



Chapter 6

# Greenways and Trails of Juniata and Mifflin Counties



## Introduction

Greenways and trails are linear resources that connect a community or region. Juniata and Mifflin Counties have tremendous opportunity to develop a comprehensive greenway and trail system that could connect the many natural resource areas, parks, rural villages, and community destinations of the two Counties.

The Commonwealth of Pennsylvania has adopted a plan, "Pennsylvania Greenways: An Action Plan for Creating Connections" with a coordinated and strategic approach for developing a statewide system of connected greenways. The Plan calls for all counties within the Commonwealth to develop and adopt greenway plans<sup>1</sup>.

### Greenways Defined

A greenway is a corridor of open space. Greenways vary greatly in scale, from narrow ribbons of green that run through urban, suburban, and rural areas to wider corridors that incorporate diverse natural, cultural, and scenic features. They can incorporate both public and private property, and can be land- or water-based. They may follow old railways, canals, or ridge tops, or they may follow stream corridors, shorelines, or wetlands, and include water trails for non-motorized craft. Some greenways are recreational corridors or scenic byways that may accommodate motorized and non-motorized vehicles. Others function almost exclusively for environmental protection and are not designed for human passage. Greenways differ in their location and function, but overall, a greenway will protect natural, cultural, and scenic resources; provide recreational benefits; enhance natural beauty and quality of life in neighborhoods and communities; and stimulate economic development opportunities.

The vision of a network of greenways throughout Pennsylvania includes regional, state, county, and local greenways, all interconnected and spanning the Commonwealth. This network of landscape connections will create a "green infrastructure" of open space vital to the health of Pennsylvania's resources, both ecological and manmade. The

statewide greenways network can also provide a new connectivity within and among Pennsylvania's communities and promote healthier lifestyles with more abundant recreational opportunities and transportation alternatives, and stronger connections to cultural and historic places. This connectivity can be represented by the metaphor of the "hubs and spokes" of a wheel.

### "Hubs and Spokes"

Pennsylvania's greenways network will ultimately take the form of "hubs and spokes." The "hubs" of this network will include parks, forests, game lands, nature preserves, lakes, vistas, cultural attractions, or other destination areas including our communities. The "spokes" of the network will be greenways connecting our natural areas and recreation and cultural destinations with the places where we live.<sup>2</sup> These greenways may conserve ecologically sensitive corridors for wildlife; provide land and water trails for transportation, fitness and outdoor recreation; and accommodate motorized recreational vehicles such as snowmobiles or ATVs.

## Greenways

The geography of Juniata and Mifflin Counties with the dominant east-west ridge lines and the meandering Juniata River has greatly influenced the location of population centers and transportation corridors. The fertile valleys are dominated by farm fields and pastures and the larger population centers are located along the river with smaller villages expanding throughout the valleys. The forested ridges with their steep slopes are relatively undisturbed. The ridges, rivers, and stream corridors are the primary features that can serve as the "spokes" of the Juniata and Mifflin Counties greenway network. Through previous planning efforts two major greenway corridors of statewide importance that traverse Juniata and/or Mifflin Counties have been identified and studied. These corridors are described below and are located on the Greenways, Trails, and Bicycle Routes Maps (pages

---

<sup>1</sup> Pennsylvania Greenways: An Action Plan for Creating Connections, Pennsylvania Greenways Partnership Commission and Greenways Partnership Advisory Commission, (2001), p.34.

---

<sup>2</sup> Pennsylvania Greenways: An Action Plan for Creating Connections, Pennsylvania Greenways Partnership Commission and Greenways Partnership Advisory Committee, (2001),p.8.

6-20 and 6-21). Both the Mainline Canal Greenway and Susquehanna Greenway are designated as Pennsylvania Major Greenway Corridors. Major Greenways are defined as those that are 50 miles or more in length, pass through two or more counties and are recognized in official planning documents.

- **Main Line Canal Greenway** – The Main Line Canal Greenway traverses both Juniata and Mifflin Counties along the Juniata River and the historic path of the Main Line Canal. The greenway is a total of 63.5 miles long in Juniata and Mifflin Counties with 22.5 miles in Juniata and 41 miles in Mifflin. The Main Line Canal, completed in 1834, stretched 320 miles from Columbia Borough in Lancaster County to Pittsburg with a 37 mile portage via the Allegheny Portage Railroad between Hollidaysburg and Johnstown for crossing the Allegheny Mountain. The canal provided a transportation route for westward expansion from the population centers of Philadelphia and Harrisburg. The Juniata Division of the system began where the Juniata River merged with the Susquehanna River and continued to Hollidaysburg over 127 miles. The Juniata Division had 86 locks and 25 aqueducts. The canal was sold by the State to the Pennsylvania Railroad in 1857 which operated the canal until 1888.

The Main Line Greenway incorporates trail systems for recreation and connection to surrounding communities with the goal of a continuous land-and-water-based recreation system.

### **Main Line Canal Greenway: Pennsylvania's Millennium Legacy Trail**

The commonwealth of Pennsylvania designated the Main Line Canal Greenway as Pennsylvania's Legacy Trail. As part of the national Millennium Legacy Trails project, each state was able to designate only one trail as a millennium trail under a program launched by the White House in 2000.

### **What is it?**

The Main Line Canal Greenway is a conceptual route that follows a section of the Pennsylvania Main Line Canal from Pittsburgh to Harrisburg. It is an entity that is mapping and promoting a system of land trails, water trails and roadways that will span the route. It is not a rail trail connecting the two cities but rather a system of thematic trails connecting centers of art, history, culture, entertainment, education, outdoor, and other recreational activities.

### **Why is it Important?**

By magnifying the visibility of communities and the amenities they have to market, Pennsylvania's Legacy Trail can start increasing revenue as soon as it has an identity. Resources will be increased for development of more trails, cultural and shopping districts, local businesses, and recreation. Conservation, recreation, and economic development go hand-in-hand. This has significant potential for economic development in Mifflin and Juniata Counties.

Source: Allegheny Ridge Corporation

A 1.5-mile segment of the Juniata Division of the Main Line Canal has been restored in Mifflin County at the Locust Campground. This segment of the restored canal was placed on the National Register for Historic Places in 2002. The campground features canal boat rides on a replica canal boat and public access to the only restored section of the canal in the two Counties.

The Allegheny Ridge Corporation, a private non-profit corporation, manages the Main Line Canal Greenway and other initiatives within the Allegheny Ridge Heritage Area to develop heritage-based recreation, environmental, and quality-of-life projects for the area.

- **Susquehanna Greenway** – The Susquehanna River corridor in Juniata County is part of the Susquehanna Greenway that extends through Pennsylvania from New York State to Maryland. About 0.75 miles of the

greenway is in Juniata County and exists as riparian buffer and water trail without improvements or access facilities. The Susquehanna Greenway is the longest corridor in Pennsylvania, stretching nearly 500 miles in length. 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.

In 2003, the Susquehanna Greenway Partnership conducted a public opinion survey about the greenway in the 22 counties along the corridor including Juniata County. Findings from the section of the greenway in which Juniata County residents responded included the following:

- 62% supported the greenway creation.
- 55% wanted their community to be involved – only 7% did not. About 38% were not sure.
- 95% consider the river an asset.
- Over four out of five rated clean water, scenery, public access, and cultural, historic and natural resources as important.
- About one out of two respondents indicated that they do not use the river because they do not know what is available. About 40 percent expressed the opinion that there is not enough public access to the river.
- Nearly 60% of the respondents specified that the focus of the greenway should be on achieving a balance of recreation, resource conservation, economic development, and flood protection.
- To 80% of the respondents in the Juniata Reach of the greenway, the major benefits of the greenway were to make their community a better place to live and to improve their community image.
- Top uses of the Susquehanna River and its adjoining lands as specified by over 60% of

respondents: enjoying river views, scenic drives, nature enjoyment, community festivals and spending time with family and friends.

- Activities respondents would most like to do along the greenway: hiking, picnicking, environmental education, bicycling, and photography.

Two water trails, or blueways, within Juniata and/or Mifflin Counties have been designated as having statewide importance: the Juniata River Water Trail and the Middle Susquehanna River Water Trail.

- **The Juniata River Water Trail** – A water trail has been designated along the Juniata River and is mapped in two sections along its main stem. The Lower Section stretches from the confluence with the Susquehanna River to Lewistown. The Upper Section extends between Lewistown through Mifflin, Huntingdon, and Blair Counties to Canoe Creek State Park. The Juniata River Water Trail was designated as a National Recreation Trail in 2009 as part of the Main Line Canal Greenway.

In Juniata and Mifflin Counties, 63 miles of water trail offer access to historic sites, shore and island camping, and other points of interest. There are six surfaced ramp river access areas in the Lower Section, five of which have been designated by the Pennsylvania Fish and Boat Commission (PFBC) including the recently completed access ramp as part of the Lewistown Narrows highway project. Along the Upper Section there are four designated access points, with three under PFBC jurisdiction. Refer to Chapter. The Granville ramp (mile 51) and Newtown-Hamilton ramp (mile 73) are separated by 22 miles of river, limiting convenient access to the river for a significant portion of western Mifflin County residents.

- **Middle Susquehanna River Water Trail** – Juniata County has approximately 0.75 miles of riverfront land along the Susquehanna River. There are no public

improvements within this relatively short length of the Middle Susquehanna River Water Trail. In 2008, the U.S. Department of the Interior designated a 103-mile section of the Susquehanna River Water Trail, from Sunbury to the Maryland border through Juniata County, as a National Recreational Trail.

### National Recreation Trails

The designation recognizes exceptional existing trails that connect people to resources and improve the quality of their life. National Recreation Trails benefit from the prestige and increased visibility of being part of the National Trail System.



## Trails

Existing trails in Juniata and Mifflin Counties are identified in Tables 6-1 and 6-2 on page 6-5. State lands in Juniata and Mifflin Counties contain over 261 miles of trails and roads used as trails. Additionally, many logging roads throughout the Counties extensive woodlands are used as trails. Just a handful of designated trails in Juniata and Mifflin Counties are located outside of the State lands. One regional long distance trail, the Mid-State Trail passes through northern Mifflin County and the Link Trail traverses a short segment of Mifflin County. These two trails are listed as major greenways with trails by the Commonwealth. Existing trails in Juniata and Mifflin Counties include 3.6 miles of trail in Reeds Gap State Park and the following:

- **State Forest Trails** – Both Juniata and Mifflin Counties contain significant acreage of State Forest lands which have 151 miles of dedicated trails and 105 miles of trails that are part of the roadway system. These trails are open to hiking, mountain biking, and horseback riding. The public opinion surveys for the two Counties found that citizens rank public forests and natural areas as the most important recreation facilities and access to trails is important for the enjoyment of these areas.
- **State Game Land Trails** – The State Game Lands trails are extensive and informal but not listed by mile as they are primarily wilderness in nature. The Game Commission permits hiking and use of designated trails for horses and bicycles during specific periods of the year. Snowmobile use is also permitted on designated routes during specific periods. The main purpose of the State Game Lands is for hunting and wildlife habitat protection.
- **Mid-State Trail** – The Mid-State Trail is a long distance primitive hiking trail traversing 319 miles across the Commonwealth from the Mason-Dixon boundary in Bedford County to just north of the village of Blackwell in Tioga County. Approximately 13 miles of the trail is located along the northern boundary of Mifflin County. The trail is extremely rugged within the natural settings of Bald Eagle and Rothrock State Forests. The Mid-State Trail is part of a larger trail system: the Great Eastern Trail. The Great Eastern Trail is a long-distance hiking footpath stretching along the Appalachian Mountains from Alabama to the Finger Lakes Trail in New York. The Great Eastern Trail links existing trails, including the Tuscarora Trail, Standing Stone Trail, and the Mid-State Trail in Pennsylvania.
- **Link Trail** – The Link Trail, also known as the Standing Stone Trail, is a 72 mile hiking trail that links the Mid-State Trail to the Tuscarora Trail. The trail traverses the northern boundary of Mifflin County in the area of the Rocky Ridge Natural Area for approximately 8 miles. The trail affords a scenic overlook to the northwest.
- **Vincent Tram Trail** – The Vincent Tram Trail is an approximately 12 mile unimproved trail in northern Juniata County along an abandoned rail corridor. The trail is within State Forest Lands and popular for day use.

Greenways and Trails of Juniata and Mifflin Counties

| Table 6-1 - Juniata County<br>Existing Trails/Greenways/Blueways                            |  |
|---|--|
| Trails/Greenways/Blueways   | Comments   |
| Mainline Canal Greenway   | Along the Juniata River  |
| Vincent Tram Trail  | Traverses Blue Mountain  |
| Tuscarora State Forest<br>- Shade Bench/Haul Road/<br>Sugar Spring Trail<br>- Whitsel Trail |  |
| Cross Keys Path   | Connects to Tuscarora State Forest trails  |
| Juniata River Water Trail   |  |
| Middle Susquehanna River Water Trail  |  |
| BicyclePA Route J   | Along Routes 11 & 15   |
| Tuscarora Mountain Greenway   | Traverses S.G.L. 88/171, Tuscarora S.F. & Tuscarora Wild Area along border with Perry County |

- **Municipal Park Trails** – Several municipal parks have trails that offer walking opportunities while linking park facilities. Municipal park trails include Lewistown Borough’s Rec Park, and Derry Township’s Derry Township Community Park in Mifflin County and Moist Run Park in Mifflintown Borough, Juniata County.



| Table 6-2 - Mifflin County<br>Existing Trails/Greenways/Blueways  |   |
|---|---|
| Trails/Greenways/Blueways   | Comments  |
| Mainline Canal Greenway   | Along the Juniata River   |
| Mid-State Trail   | Traverses Bald Eagle State Forest   |
| White Mountain Ridge Trail  | Traverses White Mountain Wild Area  |
| Bald Eagle State Forest Trails<br>- Coxes Valley Trail<br>- Summit Trail<br>- Strong Mountain Trail<br>- High Mountain Trail<br>- Red Ridge Trail<br>- High Top Trail<br>- Bear Gap Trail<br>- Long Path<br>- Wolf Gap Trail<br>- Middle Ridge Trail              | - Along Strong Mtn. ridge<br><br>- Along Thick Mtn. ridge<br>- Borders White Mountain Wild Area   |
| Reeds Gap State Park<br>- Reeds Gap Spur Trail<br><br>- Honey Creek Trail Loop<br>- Blue Jay Trail Loop<br>- Flicker Path   | - Connects to Poe Valley State Park (18 miles)  |
| Rothrock State Forest Trails<br>- Link Trail<br>- Spruce Mountain Trail<br>- Indian Trail<br>- Pig Pile Trail<br>- Bigelow Trail<br>- Sassafras Trail<br>- B.R. & S. Trail<br>- Ben Jacobs Trail<br>- Mutterbaugh Trail<br>- Chestnut Trail<br>- Bush Ridge Trail |   |
| Tuscarora State Forest<br>- Flat Trail<br>- Whitsel Trail<br>- Carlisle Gap Trail   |   |
| Link Trail & Greenway   | Along Huntingdon/Mifflin Co. border<br>Connects to Greenwood Furnace S.P. and Rocky Ridge Natural Area in Huntingdon Co.<br>Traverses Rothrock S. F. and S.G.L. 112 |
| Kish RiverWalk  |   |
| Juniata River Water Trail   |   |

- **Kish RiverWalk** – The Kish RiverWalk is an urban trail located between Rec Park at Dorcus Street and Main Street in Lewistown. This segment of the trail is gravel. The trail is envisioned to extend from Rec Park, south to Victory Park on the Juniata River and north to Derry Township Community Park. Additional segments of the trail were studied in the Lewistown RiverWalk Trail and Feasibility Study, 2005 including Juniata RiverWalk linking to the Kish RiverWalk near the river and extending southeast along the river’s north shore to Jack’s Creek. A second extension; Juniata RiverWalk West is planned to extend along the north shore, west from Victory Park to the area along the river, aligning with Greenleaf Avenue in Lewistown.
- **Route 322/Narrows Trail** – A recreation trail was developed as part of the Route 322 reconstruction at the Narrows along the Juniata River. The trail extends 1.5 miles along the former tow-path of the Main Line Canal from the location of a restored lock to a newly developed PA Fish & Boat Commission river access area. Amenities along the trail include a restored section of the lift lock system, a restored towpath spillway, interpretative signs, and trail markers to guide visitors along the trail. The stone lock keepers house has been stabilized but full restoration was not part of the project. The trail does not extend along the entire 10-mile road reconstruction corridor. Access for fishing is provided along a continuous path located at the toe of slope of the new roadway construction. This path is approximately four-foot wide and provides access for bridge and wall safety inspections.

## Greenway and Trail Resources

### Natural Resources

The Juniata River, numerous streams, and many ridgelines traversing the Counties provide natural

corridors that could contribute to a comprehensive greenways system.

#### Guidelines for Greenway Networks

Connected natural systems are ecologically more sustainable and important than unconnected systems. “If all else is equal, large reserves are better than small reserves; a single large reserve is better than several small ones of equivalent total area; reserves close together are better than reserves that are far apart; rounded reserves are better than long, thin ones; reserves clustered compactly are better than reserves in a line; and reserves that are connected by corridors are better than unconnected reserves.”<sup>3</sup>

(Source: International Union for Conservation of Nature)

The many forested ridges of the Counties already connect significant natural areas. Designation of a greenway with associated conservation objectives can promote protection of natural resources and important habitat areas. Both counties have significant wooded ridgelines/mountains to include:

- Tuscarora Mountain
- Blacklog and Shade Mountain
- Jacks Mountain
- Long Mountain
- Stone Mountain
- Front Mountain
- High Mountain
- Blue Mountain.



---

<sup>3</sup> Mark A. Benedict and Edward T. McMahon, Green Infrastructure, Linking Landscapes and Communities (Washington: Island Press, 2006), p.110.

The many streams of the Counties provide additional linear resources and their high quality makes their protection critical. Many of the streams within both Juniata and Mifflin Counties listed in PA DEP Chapter 93 Water Quality Standards have water quality criteria of Cold Water Fishes (CWF) or higher. The high water quality designations from PA DEP attest to the importance of protecting these resources. The Natural Resource chapter identifies these streams. Juniata County has four streams with High Quality DEP designations and Mifflin County has 15 streams with this designation.

### Man-made Resources

Abandoned railroad corridors, logging roads, utility rights-of-way, and other linear features present opportunities to expand the greenway system beyond the Counties' natural corridors. The following man-made resources could contribute to a comprehensive greenway and trail system throughout Juniata and Mifflin Counties.

- **Main Line Canal** – The historic path of the Juniata Division of the Main Line Canal System in both Counties presents a 63.5 mile long distance corridor 63.5 with trail and recreation potential. Although the physical evidence of the historic path has been lost in many locations, where it can be reclaimed it presents a trail opportunity with a significant tie to the history of the Counties. Remnants of the canal and its facilities should be incorporated where possible to tell the story of the Main Line Canal.



- **Kishacoquillas Valley Railroad** – The abandoned Kishacoquillas Valley Railroad

(KV Railroad) from Belleville to Lewistown in Mifflin County is 9.2 miles long, located parallel to the Kisk Creek. The KV Railroad operated from 1893 to 1940. When the KV Railroad ceased to operate the tracks were removed. The rail corridor has since reverted to private ownership.

The KV Railroad corridor has potential as a recreation trail as the continuous linear open space remains intact. Recently the corridor between Yeagertown and Reedsville was improved for temporary use for Amish carriages while PennDOT was improving Route 322 at the narrows crossing of Jacks Mountain. This portion of the corridor was improved with an aggregate surface and, in addition to the carriage use, became popular as a recreation trail for the general public. Signage currently prohibits use of this improved portion of the corridor. There are multiple landowners along the length of the KV Railroad including the Lewistown Water Authority and Maple Grove Mennonite Church.

- **Tuscarora Valley Railroad** – The Tuscarora Valley Railroad (TV) ran 30-miles through the Tuscarora Valley between Port Royal and Blairs Mills in Juniata County. In Port Royal the train connected with the Pennsylvania Railroad. The TV operated until 1934 and the corridor has been abandoned and reverted to private ownership. Little evidence remains of this former rail corridor.
- **Roadways** – The improved roads and logging roads of Juniata and Mifflin Counties present places to walk and bicycle. The relatively low volume of traffic on both state and municipal roads in the two Counties opens the opportunity for on-road cycling. The popularity of road cycling emerged in the planning process and a Cyclists Forum was held to explore this activity further from a local perspective.

## Regional Greenway Connections

By definition, greenways often extend regionally, following natural and manmade resources that are not limited by artificial governmental borders. It is important to look beyond the boundaries of Juniata and Mifflin Counties to identify additional greenway and trail opportunities. Cooperation and partnerships with state agencies, adjacent counties and municipalities, and other willing landowners is important to realize greenway and conservation objectives regionally. The following corridors are in common between adjacent counties and Mifflin and Juniata Counties and are illustrated on the Greenways, Trails, and Bicycle Routes Maps (pages 6-20 and 6-21):

- **Centre County** – The border between Mifflin and Centre Counties is the existing Mid-State Trail regional greenway corridor. Bald Eagle State Forest and Rothrock State Forest span for miles on either side of the Mifflin and Centre border with several State Forest hiking trails crossing across the county border. The Mid-State Trail runs along the border snaking between the two counties along several ridge lines and valleys. Centre County is currently developing a County Greenway Plan and hopes to coordinate future proposed greenways with the Mifflin and Juniata County’s proposed greenway system.
- **Union County** – Union County borders Mifflin County for approximately three miles through Bald Eagle State Forest and Pennsylvania Fish and Boat Commission land. An existing State Forest hiking trail, the White Mountain Ridge Trail, runs through the White Mountain Wild Area located on either side of the county border. Additionally, the Penns Creek corridor connects the two counties across the northern portion of their border. Union County has recently completed a comprehensive plan which suggests that greenways should be established along major stream corridors and other linear natural features.
- **Snyder County** – Several established and potential greenways link Snyder, Mifflin, and Juniata Counties. The Middle Susquehanna River Water Trail corridor connects Juniata and

Snyder County along the Susquehanna River. Bald Eagle State Forest spans between Mifflin and Snyder Counties with several State Forest hiking trails crossing between the counties. No trail exists presently, however the Snyder and Juniata County border follows the Mahantango Creek Corridor to the Susquehanna River for approximately 13 miles. Snyder County has not undertaken a greenway study and does not have any proposed greenways or trails linking Mifflin, Juniata, and Snyder Counties

- **Perry County** – Three significant greenway corridors connect Perry and Juniata Counties. The Perry and Juniata border follows the Tuscarora Mountain Greenway Corridor. State Game Lands 88, 171, Tuscarora State Forest, and Tuscarora Wild Area are located along this corridor and extend into both counties across the county border. No land trails exist along the Tuscarora Mountain Corridor at this time. The proposed Mainline Canal Greenway Corridor extends from Juniata into Perry County along the Juniata River corridor. Lastly, the Middle Susquehanna River Water Trail corridor connects Juniata and Perry County along the Susquehanna River. Perry County will begin work on a Greenway, Parks, Recreation and Open Space Plan in Fall 2009 and will coordinate on cross-county connections.
- **Huntingdon County** – There are numerous existing and potential greenway and trail connections between Huntingdon, Mifflin, and



Juniata Counties. The 2007 Southern Alleghenies Greenways and Open Space Network Plan, which includes Huntingdon County, established five wildlife corridors that

extend through Huntingdon County to the Mifflin and Juniata Counties border. The wildlife corridors are envisioned in the plan as conservation greenways without trail development. The conservation greenways identified follow Jacks Mountain, Aughwick Creek, Blacklog Mountain, Shade Mountain, and Tuscarora Mountain into Mifflin and Juniata Counties. Though there is no trail development at this time along the conservation greenways, Huntingdon County has the option of developing trails in the future. Jacks Mountain Wildlife Corridor, in particular, has the potential to become a land trail in the future.

The proposed Mainline Canal Greenway connects Huntingdon and Mifflin Counties along the Juniata River corridor and is Huntingdon County's highest priority greenway. Locally, many boroughs in the County along the Juniata River are improving their river access and trails to be part of the Juniata River Water Trail.

The Link Trail Greenway extends north-south through eastern Huntingdon County connecting to the Tuscarora Trail in northern Fulton County and to the Mid-State Trail in Centre County near the border of Mifflin County. The Link Trail begins in Greenwood Furnace State Park in Huntingdon County. Currently 46 miles have been developed throughout the County. The Link Trail Greenway snakes slightly across the border into Mifflin County in several locations in Rothrock State Forest and State Game Lands 112.

Additionally, Rothrock State Forest, Tuscarora State Forest, and a small portion of Bald Eagle State Forest span the border between Huntingdon, Juniata and Mifflin Counties. Many local hiking trails span across the county borders within these State Forests.

- **Franklin County** – Franklin County recently completed a County Greenways Plan. A Tuscarora Conservation Greenway is proposed following Tuscarora Mountain along the County's western border and north into Juniata and Perry Counties. The plan identifies this corridor as a high priority for conservation as

an important migratory flyway spanning several states. The Tuscarora Trail follows the Tuscarora Greenway throughout the majority of the County, but veers south into Perry County approximately four miles south of the Franklin-Juniata County lines. Juniata County and Franklin County are linked indirectly through Tuscarora State Forest lands.

### Barriers to Greenway Development

The very resources that promote greenway potential also influenced the land use and development patterns of the Counties. For instance, the Juniata River presents tremendous potential as a greenway corridor that could provide ecological benefits for wildlife and enhanced riparian buffers to protect water resource, but the existing land uses along the river include roadways, active rail lines, and numerous population centers with industrial and other development hugging the shores of the river.

The geography of Juniata and Mifflin Counties promotes east-west corridors and the majority of the transportation routes and stream corridors follow this alignment. The exceptions include Route 322 which traverses the gaps in the mountain and ridge lines to span the Counties from southeast Juniata County to northcentral Mifflin County. Other exceptions include the Juniata River in Juniata County and several of the small streams. The active rail line adjacent to the river and Route 322 form the most challenging barriers to a comprehensive network of greenway connections throughout both Counties. These transportation routes form physical barriers, particularly for the ridge and mountain greenways and their linkage to the river greenway. One function of greenways is as a trail for people movement, and very often this can be accommodated through work-arounds and engineering solutions. Bridges and underpasses can be built to connect trails across roadways or rail lines. The natural functions of greenways are not as adaptable. Greenways as wildlife corridors and preserves for habitat protection are limited by the presence of transportation routes that bisect and interrupt the continuity of a corridor.

Greenways are easiest to establish in areas with limited development and where there are large tracts of land under single ownership. As this

planning document has stated in several instances, Juniata and Mifflin Counties have not seen the tremendous development other parts of the Commonwealth have experienced and expansive open space still exists, especially beyond the primary population centers of Lewistown, Mifflintown, Mifflin, Port Royal, and Thompsettown. Development pressure experienced in Juniata and Mifflin Counties has come from the Harrisburg area to the south and State College area to the north. This development pressure will likely continue following the recovery of the current economic downturn as Juniata and Mifflin Counties offer affordable, rural housing opportunities in relatively close proximity to these urban areas. This points to the urgency of pursuing greenways and trails now, while opportunities for linear connections remain relatively available.

### Juniata and Mifflin Counties Greenway, Trail, and Bikeway System

A comprehensive system of greenways, trails, and bikeways is proposed to connect throughout the two Counties. This system should span the Counties to connect the residential, recreation, commercial, and school hubs and other destinations.

#### **Greenways: Important to the Citizens**

The public opinion survey conducted as part of this planning process provides glimpse into what citizens deem as important greenway objectives. About 56 percent of the survey respondents indicated that greenways are important. Only one in ten respondents views greenways as not important.

### Proposed Greenways for Juniata and Mifflin Counties

Inventory and analysis of natural and man-made resources identified and mapped features that contribute to greenway development. Corridors were then designated that align with major landscape features and areas of natural resources. The greenways connect protected lands and fragmented landscapes. Areas of special concern identified in the County Natural Areas Inventory are included to a great degree. Nine regional

greenway corridors were identified which creates the framework for the Juniata and Mifflin County system of greenways and trails. The nine regional greenways corridors include:

- Susquehanna Greenway – Juniata County
- Main Line Canal Greenway – Juniata and Mifflin Counties
- Kishacoquillas Creek Greenway – Mifflin County
- Tuscarora Mountain Greenway – Juniata County
- Tuscarora Creek Greenway – Juniata County
- Black Log Mountain/Shade Mountain Greenway – Juniata and Mifflin Counties
- Jacks Mountain Greenway – Mifflin County
- Stone Mountain Greenway – Mifflin County
- Mid State Trail Greenway – Mifflin County

The Greenways, Trails, and Bicycle Routes Maps (pages 6-22 and 6-23) illustrate the nine regional greenway corridors. Descriptions of the regional greenway corridors are provided in Table 6-3 on the following page. These corridors are the main greenways that traverse Juniata and Mifflin Counties, and are located along significant landscape features which extend beyond the boundaries of the Counties. As adjacent counties plan and implement protections for greenways, the greenway system of Juniata and Mifflin Counties will connect along this green infrastructure to other greenways throughout the Commonwealth.

The nine regional greenways alone do not complete a greenway system that encompasses all of the significant resources of the two Counties. Additional local greenways have been identified to extend greenways along secondary corridors to protect important resources and create interconnecting loops which tie the main greenways together. These local greenways link important

## Greenways and Trails of Juniata and Mifflin Counties

| <b>Table 6-3 - Juniata and Mifflin Counties<br/>Regional Greenway Corridor Descriptions</b> |   |  |   |  |
|---|---|--|---|--|
| <b>Regional Greenway</b>  | <b>Approximate Length (Miles) /Beginning-End</b>            | <b>County / Municipalities</b>   | <b>Key Features / Attributes</b>  | <b>Other Planning / Development Initiatives / Comments</b>   |
| G-1 Susquehanna Greenway  | 0.75 / Susquehanna  | Juniata County – Susquehanna   |   | Susquehanna Greenway Partnership   |
| <b>G-2 Main Line Canal Greenway</b>   |   |  |   |  |
| a. Juniata County   | 22.5 / Perry County Line to Mifflin County Line             | Juniata County – Delaware, Thompsontown, Turbett, Port Royal, Mifflin, Mifflintown, Walker, Milford, Fermanagh | Haldeman Park, Central Juniata Park   | Main Line Greenway, Juniata Watershed Management Plan  |
| b. Mifflin County – Juniata Co. to Lewistown  | 5.2 / Lewistown to Juniata Co. Line                         | Mifflin County – Derry, Lewistown  | Victory Park, Lewistown Riverwalk   | Main Line Greenway, Juniata Watershed Management Plan, Lewistown RiverWalk Trail Feasibility Study |
| c. Mifflin County – Lewistown to Huntingdon Co.   | 37.5/Lewistown to Huntingdon Co. Line                       | Mifflin County – Granville, Bratton, Oliver, McVeytown, Wayne  | Juniata Terrace Playground, Central Juniata Park  | Main Line Greenway, Juniata Watershed Management Plan, Lewistown Riverwalk Trail Feasibility Study |
| <b>G-3 Kishacoquillas Creek Greenway</b>  |   |  |   |  |
| a. Lewistown to Reedsville  | 6.5 / Lewistown to Reedsville                               | Mifflin County – Lewistown, Derry, Brown   |   | Lewistown RiverWalk Trail Feasibility Study  |
| b. Reedsville to Belleville   | 9.6 / Reedsville to Belleville                              | Mifflin County – Brown, Union  |   |  |
| G-4 Tuscarora Mountain Greenway   | 35.3 / Franklin Co. to Perry Co.                            | Juniata County – Delaware, Walker, Turbett, Spruce Hill, Tuscarora, Lack                                       | State Game Land No. 88 and 171 Tuscarora State Forest   |  |
| G-5 Tuscarora Creek Greenway  | 38.3/Huntingdon and Franklin Co. Line to Perry Co. Line     | Juniata County – Port Royal, Milford, Turbett, Beale, Spruce Hill, Tuscarora, Lack                             |   |  |
| <b>G-6 Black Log Mountain / Shade Mountain Greenway</b>                                     |   |  |   |  |
| a. West of Juniata River  | 22.3 / Juniata River to Huntingdon Co. Line                 | Juniata County – Milford, Tuscarora, Lack<br>Mifflin County – Derry, Granville, Bratton, Wayne                 | State Game Land No. 107, Tuscarora State Forest, Vincent Tram Trail, Karl B. Guss Picnic Area |  |
| b. East of Juniata River  | 11.6 / Juniata River to Perry Co. Line                      | Juniata County – Fermanagh, Fayette<br>Mifflin County – Decatur  |   |  |
| <b>G-7 Jacks Mountain Greenway</b>  |   |  |   |  |
| a. West of Kishacoquillas Creek   | 24.9 / Kish Creek to Huntingdon Co. Line                    | Mifflin County – Derry, Granville, Brown, Union, Menno, Oliver, Wayne  | Rothrock State Forest, Reeds Gap State Park   |  |
| b. East of Kishacoquillas Creek   | 14.0 / Kish Creek to Snyder Co. Line                        | Mifflin County – Armagh, Decatur, Brown, Derry   |   |  |
| G-8 Stone Mountain Greenway   | 15.5 Brown to Huntingdon Co. Line                           | Mifflin County – Brown, Union, Menno   | Rothrock State Forest, Link Trail   |  |
| G-9 Midstate Trail Greenway   | 20.5 / Huntingdon/Centre Co. Line to Union/ Centre Co. Line | Mifflin County – Armagh, Brown   | Bald Eagle State Forest, Midstate Trail, White Mountain Wild Area                             | Existing long distance trail.  |

hubs and are typically located along smaller streams and ridgelines.

The next step in the planning process was to evaluate the regional greenways to establish protection and development priorities. The greenway corridors were evaluated based on open space criteria considered by the advisory committee. The advisory committee ranked the criteria as first, second, or third priority as shown in Table 6-4. Greenways were separated into geographic segments where the physical characteristics were not homogeneous across the full length of the corridor. Each greenway segment was evaluated based on the criteria and priority designations were used to create a weighted ranking.

| <b>1<sup>st</sup> Priority</b> | Contiguous to protected lands of the Commonwealth (State Parks, State Forests, State Game Lands).               |
|--------------------------------|---|
|                                | Preserves stream corridors and enhances riparian buffers.   |
|                                | Provides access to streams and rivers.  |
|                                | Protects woodlands.   |
|                                | Contiguous to protected lands of a municipality.  |
| <b>2<sup>nd</sup> Priority</b> | Contiguous to farmland permanently protected with an Agricultural Conservation Easement.                        |
|                                | Preserves/connects natural corridors for wildlife.  |
|                                | Preserves outstanding wildlife habitat, diverse species/communities, PNDI sites, and large enough to be stable. |
|                                | Protects areas of cultural or historic significance.  |
|                                | Extends/protects trails, greenways, and blueways.   |
| <b>3<sup>rd</sup> Priority</b> | Preserves scenic qualities.   |
|                                | Preserves prime agricultural soils.   |
|                                | Protects area under development pressure, located in high growth area.  |

Table 6-5, on page 6-13 illustrates the outcome of the prioritization process and provides a prioritized greenway ranking based on the evaluation criteria. The criteria were weighted as follows: 2 points if the greenway satisfies the criteria, 1 point if the criteria are partially satisfied, and 0 points if the greenway does not satisfy the criteria. The resulting ranking of greenway corridors is a useful tool for County and municipal officials and

planners to prioritize acquisition and implementation of protection strategies. It does not place a relative value on the greenways nor assess the current “degree of threat” or “availability” of the corridor. The ranking provides a point of departure for future action but consideration must be given to protection opportunities and development pressure. Each greenway identifies is important to the quality of life of County residents and provides many significant benefits. Juniata and Mifflin Counties should strive to protect and preserve each of the identified greenway corridors.

**Greenway Function**

Greenways can take many forms. Some may consist only of natural areas or passive greenways. Others may include a primitive footpath for exploring nature or have a recreation trail and function as an active greenway. An important goal of Juniata and Mifflin County’s greenway system is to protect the Counties natural resources that are valued by residents. Although a lower priority for future County focus, trails are important and valued for their recreation, fitness, and transportation potential as well as their potential to draw tourists to the area.

The appropriate function for each regional greenway was evaluated. The evaluation considered compatibility of protecting natural resources while facilitating public access via trail development. Each greenway was considered based on the following:

- Extends an existing trail.
- Located in high growth area or area of development pressure.
- Links population centers, school sites, and parks.
- Terrain is compatible with trail development.

**Greenways: For Natural Resource Conservation**  
 Approximately 80-percent of Juniata and Mifflin County residents who responded to the opinion survey indicated that “natural resource conservation” should be a priority future focus for open space, parks, and recreation. Approximately 40-percent of residents from both Counties rated “create trails” as a future priority focus.

**Table 6-5 - Juniata and Mifflin Counties  
Greenway Ranking**

| Greenway Designation | 1 <sup>st</sup> Priority                          |  |                                       |                    |   | 2 <sup>nd</sup> Priority          |   |   |  |   |  |                            | 3 <sup>rd</sup> Priority          |                                   |   | Greenway Ranking |                                   |
|----------------------|---|--|---------------------------------------|--------------------|---|-----------------------------------|---|---|--|---|--|----------------------------|-----------------------------------|-----------------------------------|---|------------------|-----------------------------------|
|                      | Contiguous to protected lands of the commonwealth | Preserves stream corridors and enhances riparian buffers | Provides access to streams and rivers | Protects woodlands | Contiguous to protected lands of a municipality | 1 <sup>st</sup> Priority Subtotal | Contiguous to farmland permanently protected with an Agricultural Conservation Easement | Preserve/connect natural corridors for wildlife | Preserves outstanding wildlife habitat, diverse species/communities, PNDI sites, and large enough to be stable | Protects areas of cultural or historic significance | Extends/protects trails, greenways, and blueways | Preserves scenic qualities | 2 <sup>nd</sup> Priority Subtotal | Preserve prime agricultural soils | Protects area under development pressure, located in high growth area |                  | 3 <sup>rd</sup> Priority Subtotal |
| G-1                  | Susquehanna Greenway                              |  |                                       |                    |   | 4                                 |   |   |  |   |  | 9                          |                                   |                                   | 3   | 33               | 5                                 |
| G-2                  | Main Line Canal Greenway                          |  |                                       |                    |   |                                   |   |   |  |   |  |                            |                                   |                                   |   |                  |                                   |
|                      | a. Juniata Co.                                    |  |                                       |                    |   | 7                                 |   |   |  |   |  | 10                         |                                   |                                   | 3   | 44               | 1                                 |
|                      | b. Mifflin Co. - Juniata Co. to Lewistown         |  |                                       |                    |   | 6                                 |   |   |  |   |  | 10                         |                                   |                                   | 3   | 41               | 2                                 |
|                      | c. Mifflin Co - Lewistown to Huntingdon Co.       |  |                                       |                    |   | 6                                 |   |   |  |   |  | 11                         |                                   |                                   | 1   | 41               | 2                                 |
| G-3                  | Kishacoquillas Creek Greenway                     |  |                                       |                    |   |                                   |   |   |  |   |  |                            |                                   |                                   |   |                  |                                   |
|                      | a. Lewistown to Reedsville                        |  |                                       |                    |   | 7                                 |   |   |  |   |  | 9                          |                                   |                                   | 2   | 41               | 2                                 |
|                      | b. Reedsville to Belleville                       |  |                                       |                    |   | 5                                 |   |   |  |   |  | 8                          |                                   |                                   | 4   | 35               | 4                                 |
| G-4                  | Tuscarora Mountain Greenway                       |  |                                       |                    |   | 4                                 |   |   |  |   |  | 7                          |                                   |                                   | 0   | 26               | 7                                 |
| G-5                  | Tuscarora Creek Greenway                          |  |                                       |                    |   | 5                                 |   |   |  |   |  | 6                          |                                   |                                   | 1   | 28               | 6                                 |
| G-6                  | Black Log Mountain/ Shade Mountain Greenway       |  |                                       |                    |   |                                   |   |   |  |   |  |                            |                                   |                                   |   |                  |                                   |
|                      | a. West of Juniata River                          |  |                                       |                    |   | 7                                 |   |   |  |   |  | 9                          |                                   |                                   | 0   | 39               | 3                                 |
|                      | b. East of Juniata River                          |  |                                       |                    |   | 4                                 |   |   |  |   |  | 8                          |                                   |                                   | 0   | 28               | 6                                 |
| G-7                  | Jacks Mountain Greenway                           |  |                                       |                    |   |                                   |   |   |  |   |  |                            |                                   |                                   |   |                  |                                   |
|                      | a. West of Juniata River                          |  |                                       |                    |   | 3                                 |   |   |  |   |  | 8                          |                                   |                                   | 0   | 25               | 8                                 |
|                      | b. East of Juniata River                          |  |                                       |                    |   | 3                                 |   |   |  |   |  | 6                          |                                   |                                   | 0   | 21               | 9                                 |
| G-8                  | Stone Mountain Greenway                           |  |                                       |                    |   | 4                                 |   |   |  |   |  | 8                          |                                   |                                   | 0   | 28               | 6                                 |
| G-9                  | Mid-State Trail Greenway                          |  |                                       |                    |   | 4                                 |   |   |  |   |  | 8                          |                                   |                                   | 0   | 28               | 6                                 |

 = Greenway satisfies criteria - 2 points
  = Greenway partially satisfies criteria - 1 point
  = Greenway does not satisfy criteria - 0 points

Seven regional greenways or greenway segments were determined to align with some or all of the trail development considerations. Trail development should be considered for the following regional greenway corridors:

- Main Line Canal Greenway – Juniata County segment
- Main Line Canal Greenway – Mifflin County, Juniata County to Lewistown
- Main Line Canal Greenway – Mifflin County, Lewistown to Huntingdon County
- Kishacoquillas Creek Greenway – Lewistown to Reedsville
- Kishacoquillas Creek Greenway – Reedsville to Belleville

- Tuscarora Creek Greenway
- Black Log Mountain/Shade Mountain Greenway – west of Juniata River

At this time the Susquehanna Greenway is not categorized as a greenway with trail due to its short length. When trails are developed up and down river of the Juniata County portion of the Susquehanna Greenway a trail should extend along the 0.75 mile river frontage in the County.

### Expanding the System

Developing greenways and trails is a long-term proposition due to the linear nature of the resources which are not constrained by governmental or parcel boundaries. The rural character of the Counties and the relatively low traffic volume already make the area popular for on-road cycling

and walking for leisure. The rural roadways of the Counties were identified as a resource to expand the proposed greenway and trail system beyond the regional and local greenway corridors identified.

### Cycling

An open forum was held with cycling enthusiasts as part of the public input process for this plan. Cyclists attended and shared their thoughts on cycling and potential cycling routes and trails in the two Counties. Concerns and challenges cited by the cyclists include:

- Roadways are not designed to accommodate cyclists. Roadway berm/shoulder width is not sufficient.
- There is only one convenient way over Seven Mountains: Route 322, a four lane highway which prohibits bicycle use. Cyclists have been pulled over for riding over Seven Mountains while it was noted that you may ride with permission. (PennDOT may grant permission to ride on highways if requested in writing based on the potential unavailability of a reasonable alternate route or PennDOT publishes a notice in the Pennsylvania Bulletin authorizing bicycle access to the highway.) Other states permit bicycles on similar roads.
- The canal towpath between Lewistown and Juniata County is not open for public cycling. In Lewistown you cannot get beyond Juniata Concrete along the towpath.
- The Lewistown RiverWalk Trail extension of the Kish Riverwalk from Lewistown, north to Derry Township is limited due to an active rail line.
- In the spring, when DCNR puts the stone down on State Forest roads, it is difficult to ride the roads.
- The improvements to Route 322 through the Lewistown Narrows were not developed to accommodate bikes and a tremendous recreation and transportation opportunity was lost.

Cycling opportunities in Juniata and Mifflin Counties includes:

- Cycling opportunities are located in close proximity to most residents – right outside their front door if they avoid high volume roads.
- There is easy access to State Forest lands for mountain biking.
- Indian Valley High School has an active bike club which has been successful in spurring interest in cycling. The club has approximately 120 members and participants can get involved in four sub-interest groups: BMX riding, mountain bike riding, recreational riding, and bike repair and assembly.
- Creating safe routes to school via biking and walking is important. While creating long distance trails is important, the most crucial trails are the ones that connect schools to population centers and neighborhoods.
- The KV Railroad presents one of the best opportunities for development of an off-road bike trail.

Routes for long-distance, on-road cycling and roadways frequented by walkers were noted through the planning process. These references were also accompanied by concerns for safety and convenience. According to Pennsylvania's Statewide Bicycle & Pedestrian Master Plan, few Pennsylvania communities are walkable or bikeable. The following concerns identified in the Statewide Plan are common to Juniata and Mifflin Counties as well.

- Increasing Walking and Bicycling – More people would walk and bicycle if safe and convenient facilities were available including paved shoulders along roads, bike lanes, signed routes, and sidewalks.
- Increase Public Awareness – Educational and aggressive outreach programs are needed to make people aware of non-motorized traffic as well as the rights and

responsibilities all typed of users have regarding motorized and non-motorized transportation. Supporting the Mifflin County School District's curriculum for bicycle riding as part of its Physical Education Curriculum is essential. It is a model of what communities can do to increase bicycling, short distance non-motorized transportation, and healthy active life-styles.

- **Integration with Transportation Planning –** Non-motorized transportation must be part of the planning process for transportation at all levels of government and regional planning.
- **Making Communities Pedestrian and Bicycle Friendly –** Making non-motorized transportation safe and convenient in pedestrian/bicycle friendly communities requires a comprehensive approach including physical improvements for cycling and walking, education, promotion, and providing technical assistance and support for municipalities, community organizations, and others involved with related planning efforts for walking and biking.
- **Leadership –** Government officials at all levels need to step up to the plate and make a commitment to making non-motorized transportation a reality in pedestrian/bicycle friendly communities. Planning needs to extend beyond jurisdictional borders for a true regional approach that facilitates transit through a network of connected trails and community/regional destinations.

## Trail and Bikeway Initiatives

Several recent efforts to improve the bicycling and walking opportunities in Mifflin County have been proposed. Through initiatives of the Mifflin County Planning and Development Department safe bicycle routes to schools have been explored for funding and future development. Trail and bicycling and pedestrian opportunities for Juniata and Mifflin Counties include the following:

- **Electric Avenue Re-Stripping/Indian Valley High School –** PennDOT is considering including the re-stripping Electric Avenue on its schedule of upcoming road improvement projects in the Lewistown area. Electric Avenue is located within a short distance of the Indian Valley High School and is the main roadway traveled to access the school from the surrounding area. Mifflin County explored the opportunity of coordinating with PennDOT to stripe bike lanes along Electric Avenue to promote bicycle use by students to access the school. The high school integrates bicycling into its Physical Education curriculum and runs a popular bike club fostering a high level of interest in bicycling. Electric Avenue is a wide roadway having previously been stripped for four traffic lanes and currently accommodating three lanes providing sufficient area for bike lanes on both sides of the road. Although the project was delayed due to funding and changing regulations, PennDOT is considering accommodating pedestrian and bicycle use of the shoulder to designate the off road lane adjacent to the road shoulder. PennDOT indicated that additional accommodations may be appropriate when a comprehensive bike network is established in the area.
- **Green Avenue Extension/Lewistown Middle School –** Mifflin County Planning and Development Department identified the opportunity of creating a bicycle and pedestrian connection from the Lewistown Middle School to Blossom Hill, a new residential development slated for approximately 400 families located just north of Route 322. Green Avenue Extension connects the school and the housing development as well as a Geisinger Health facility, a residential retirement development, and a child care facility. One option for funding this connection is Safe Routes to School Program, a federal program administered by the states which

provides infrastructure improvements that promote safe connections to schools.

Figure 6-1 on page 6-21 illustrates a possible configuration for safe bicycle and pedestrian connection. The improvements illustrated include a pedestrian/bicycle trail separated from the road cartway in most locations. An easement may be necessary in some areas from adjacent property owners to develop the trail. The existing bridge over Route 322 is narrower than the approaching right-of-way and will require safety accommodations to separate bikes and pedestrians from traffic and provide safe passage across the span. The proposed trail links into the open space trails of the Blossom Hill development. The development will have families with students attending the school who will benefit from a safe trail link to the school.

- **Mifflintown Borough to Mifflin Borough** – This linkage across the Juniata River is an outcome of the replacement of the existing vehicular bridge by PennDOT. PennDOT is in the process of developing a design for a new bridge that will tie the two shores together in a location south of the existing bridge. The old bridge will be removed and one design option under consideration includes a new pedestrian bridge built in its place to retain cohesion between the two town centers and provide bicycle and walking connections between the communities and public facilities. If the final design includes the pedestrian bridge, it could be the impetus for bicycle and pedestrian connections that extend from the bridge to nearby community destinations. In Mifflin Borough destinations include Central Juniata Park, Mifflin Park, and Mountain View Elementary School. Extending bicycle and walking accommodations along River Drive and Wilson Street will complete these connections. In Mifflintown Borough destinations include Myers Park, Moist Run Park, Tuscarora Junior High School, and Juniata High School. Connections to these destinations could take a variety of routes

through the Borough using the existing street, sidewalk, and alley system. The affected municipalities and Juniata County should continue to communicate with PennDOT to promote pedestrian and bicycle accommodations associated with these roadway and bridge improvements.

- **Lewistown Hospital Life Trail** – Walking the perimeter grounds of Lewistown Hospital is a popular activity for hospital employees as well as local residents. This trail could be developed as a model interpretive trail featuring programs and information to promote active healthy lifestyles.
- **Kish RiverWalk Northern Extensions** – The Kish RiverWalk extensions to the north to Derry Township Park and south to Victory Park are important local connections that will expand the reach and benefit of this urban trail. Challenges to completing these extensions include crossing of Kish Creek and Route 22 to the south and the active rail line to the north.
- **Juniata RiverWalk** – The Juniata RiverWalk parallel the Juniata River and Route 22, connecting the Kish RiverWalk to the Stone Arch Bridge at Jack’s Creek. The trail corridor extends along utility rights-of-way and existing sidewalks. From Jack’s Creek the trail could extend south of the Borough along the Juniata River.
- **Juniata RiverWalk West** – The Juniata RiverWalk West extends up-river from Victory Park to an existing cement plant. This trail will parallel the river and primarily use utility rights-of-way

### **Pedestrian and Bicycle Friendly Trail Strategy for the Future**

Juniata and Mifflin Counties are ideally suited to enhance their community’s and the Counties as a whole, with trails and corridors for biking and walking. The rural character, low volume of traffic on most roadways, and the current low level of development in the Counties points to a significant

opportunities to provide improvements for pedestrians and bicyclists. The cyclist forum revealed interest in cycling in the region, which, in part may be attributed to the convenient access to low volume roadways.

Cycling and walking are poised to take a more dominant role in the mix of transportation options available to Americans. With fluctuating gas prices, energy dependence, concern about carbon dioxide emissions and global warming, and the obesity epidemic and lack of physical activity; promoting alternative transportation modes, especially biking and walking is vital.

Enhancing Juniata and Mifflin Counties with a comprehensive system of trail and on-road bike routes has the potential to dramatically enhance the quality of life for residents while setting the stage for spin-off benefits such as economic development through tourism and supporting businesses; fitness and wellness; reduction in vehicular traffic; and reduced dependence on the automobile. Providing alternative transportation modes such as trails and bike lanes open up opportunities for the non-driving teen and adults to connect to destinations and reduce dependency on motorized transportation options.

The existing roadways of the Counties have not been designed nor managed for shared use. Accommodations need to be made to enhance safety for shared use by bicycles and pedestrians. Vehicles currently share numerous County roadways with Amish horse and buggies and enhancements for bicycle and pedestrian use will benefit this population as well.

Currently there is only one formally designated on-road bicycle route identified for either County, BicyclePA Route J which follows Routes 11 and 15 along the Susquehanna River in Juniata County. The BicyclePA Routes are road corridors designated by experienced bicyclists that traverse the Commonwealth.

### **Trails and Economic Development - Heritage Rail Trail County Park - York County, PA**

A survey of trail users of the 21 mile Heritage Rail Trail County Park was completed in 2007 to define the characteristics of trail users and gauge the economic impact of the trail on the County's economy. The survey found that approximately 60.8 percent of users were from York County while the rest were from the surrounding counties, the Philadelphia and Baltimore areas and as far away as California. Based on the 2007 usage, it is estimated that the trail contributes over \$6 million annually to the York County economy.

Through cyclist input and research, roadways in the Counties have been identified as potential bike routes. These are roads already used by cyclists for leisure riding or for bike races. The roadways traverse the Counties and are illustrated on the Trail/Bike Routes Map. Currently, these on-road routes are un-improved for bicycle or pedestrian use and cyclists have identified safety of using these routes as a primary concern. These routes are presented as initial corridors that should be explored and evaluation for their compatibility with shared road bicycle and pedestrian use. Evaluation of these routes and others should occur through a comprehensive evaluation of bicycle and pedestrian opportunities in Juniata and Mifflin Counties. Suggestions for the evaluation process include:

- Create a Bicycle/Pedestrian Advisory Committee to guide the planning efforts to develop a County-wide Bicycle and Pedestrian Plan.
- Involve local cyclists and pedestrians to identify appropriate routes. Cursory investigation was completed as part of this study and has been documented, but additional assessment is warranted to identify routes and loops that will provide a comprehensive system throughout both Counties and linking to routes in adjacent counties.
- Define a system of on-road routes, bike lanes, and multi-use trails that connect hubs or destinations including parks, schools,

residential neighborhoods, commercial areas, and community assets such as libraries.

- Coordinate with and work closely with PennDOT District Engineers to identify roadway improvement projects on state roadways and U.S. Routes. Improvements to routes 655, 522/22, 235, 35, 103, 333, and 75 that accommodate bicycles would greatly expand the safe bicycling opportunities in the Counties. Most of these roads were not identified in the Cyclists Forum as routes frequented by cyclists as these are the more heavily traveled routes through the Counties. Safety accommodations to these roads would further expand cycling opportunities and promote alternative transportation as these routes connect many of the towns and villages of the Counties. As part of the evaluation of these roads also consider Amish buggy use and accommodation of buggy lanes that would also serve cyclists. Route 655 in western Mifflin County was cited as an area of significant buggy traffic.
- Coordinate with local municipalities to include bicycle and pedestrian accommodations such as shoulder paving and maintenance as part of their roadway maintenance work. County residents already walk on roadways such as Ort Valley Road, a local road with narrow gravel shoulders. Ort Valley Road's proximity to residential subdivisions and Electric Avenue in Lewistown make it a popular walking corridor. Additionally, high school students use Electric Avenue, Ort Valley Road, Country Lane, and Walnut Street as a running circuit. Municipalities should work with a transportation engineer with experience and knowledge of bicycle facility development to develop a comprehensive approach to integrating bicycle and pedestrian facilities into local roadway networks.
- Team with the Juniata River Valley Visitors Bureau and advocates for children's health and fitness and the environment to promote

local bicycling opportunities. Develop brochures, maps, and touring routes/destination information that will promote cycling. Themed bike excursion routes could promote tourism as well as local use. Possible themes include historic sites, farmers markets, and the covered bridges of Juniata County.

### A Vision for a Greenway, Trail, and Bikeway System for Juniata and Mifflin Counties

The Greenway, Trail, and Bikeway System for Juniata and Mifflin Counties will provide a connecting system of corridors for resource protection, recreation, and linkage to community destinations. The system is composed of natural greenways, greenways with trails, and bikeways. System Components include:

- **Central Spine** - A central greenway spine that functions as the primary corridor in Juniata and Mifflin Counties. Other greenways, trails, and bikeways link to this regional corridor. This spine is composed of four priority regional greenway segments:
  - Main Line Canal Greenway – Juniata County
  - Main Line Canal Greenway – Juniata County to Lewistown
  - Main Line Canal Greenway – Lewistown to Huntingdon County
  - Kishacoquillas Creek Greenway – Lewistown to Reedsville

These greenways have been identified as “active” corridors with trails. Geographically these segments extend generally north-south through Juniata County and much of Mifflin County, eastward along the Juniata River through the main population center of Juniata County, and westward along the river in Mifflin County. The majority of the other regional and local greenways, trail, and

bikeways connect to this central greenway spine.

- **Natural Greenways** – Natural greenways are regional and local greenways that function primarily to protect natural areas and are located along the mountains, ridgelines, and streams. The existing trails of the State lands provide recreational opportunities in many of these corridors. New trails are not suggested as a high priority in these greenways because of the extremely steep terrain, high water quality, and the current availability of the Mid-State Trail and Link Trail providing long-distance hiking opportunities.
- **Active Greenways** – Active greenways are regional and local corridors that are compatible with trail development and extend from the central spine and link hubs while providing recreation and transportation benefits. Active greenways provide tangible benefits and can create momentum for the entire greenway, trail, and bikeway system. Pilot projects should be undertaken in each County to illustrate the many benefits of greenways and trails. The KV Railroad corridor in Mifflin County and a trail connecting the Lehman Covered Bridge and Lions Club Park and Moyer Park in Milford Township and Port Royal Borough, Juniata County are suggested as pilot projects.
- **Bikeways** – Bikeways connect to the central spine and active greenways to create loops and extend the system to generally encompass the Counties.
- **Local Links** – Local links provide the last piece of the puzzle, connecting destinations such as parks, schools, and indoor recreation facilities to nearby active corridors where linear resources and system corridors do not exist. Municipalities, school districts, and private land owners must work together to develop the local links which connect local destinations to the greenways and trail system.

## Conclusions

### Strengths

Juniata and Mifflin Counties have the confluence of greenway and trail opportunities seldom found in other areas of the Commonwealth: a rich tapestry of natural resources, two prestigious greenways of statewide and national significance, bikeable roadways, and a level of growth and development that provides openings for greenway and trail opportunities to be explored.

### Challenges

The benefits of greenways and trails have not been widely embraced and some opportunities have been lost to develop trails and greenways in the Counties. Recent efforts of Mifflin County Planning Department and this planning process have exposed a growing interest in bike and pedestrian friendly communities. The citizen survey substantiated the importance of greenways to residents as a preferred park type while bike trails ranked much lower. Residents relate to the resource protection benefits of greenways while the transportation and recreation benefits of trails are not as widely embraced.

Private landowner cooperation will be critical to realizing the full greenway and trail system. Although public lands are significant in the Counties, proposed greenways and trails traverse many private landholdings. Promoting the benefits of greenways and trails as well as natural resource conservation and working directly with landowners to understand and address their concerns will be important.

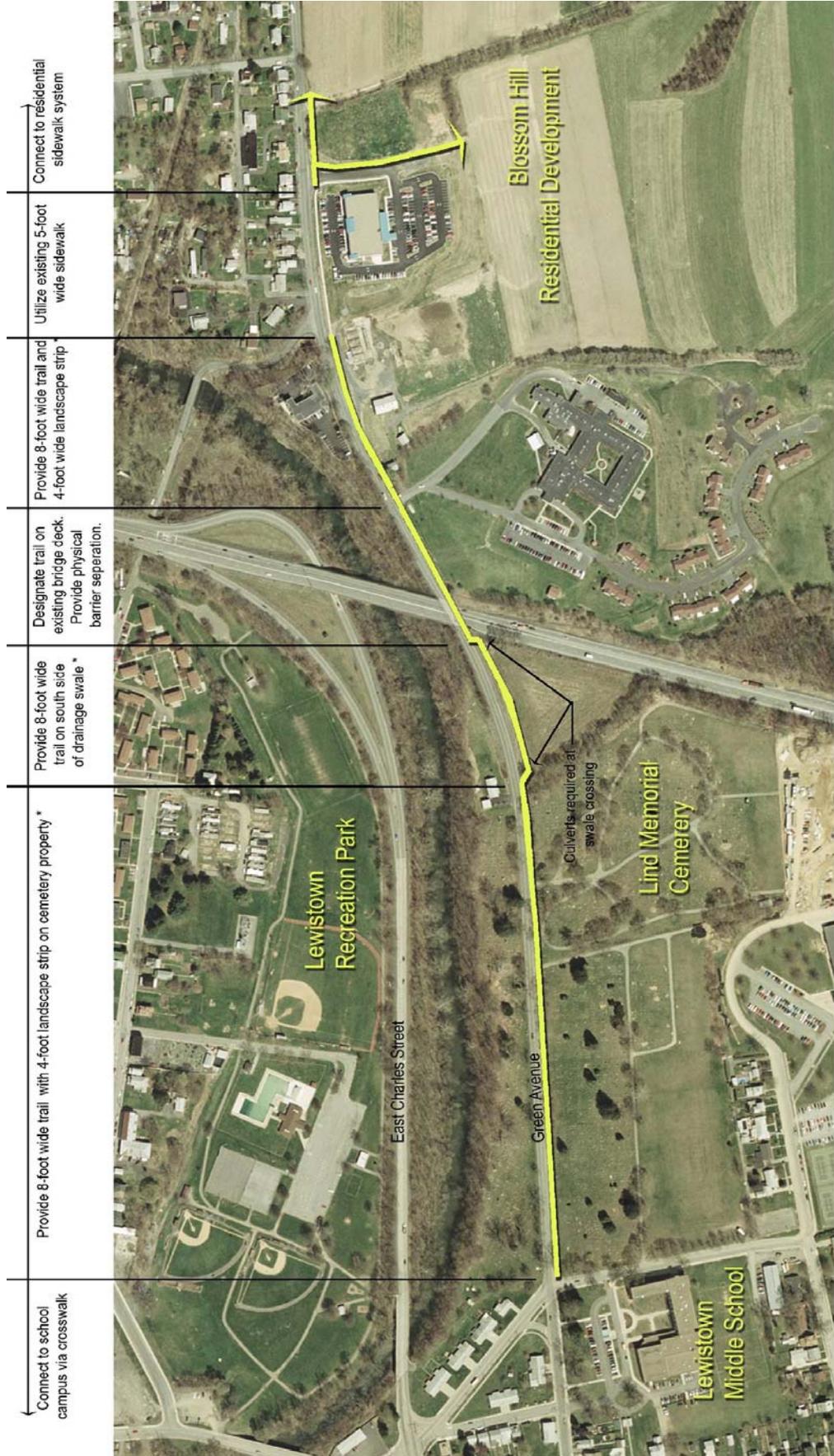
Developing a comprehensive system of greenways and trails is a long term proposition that will take decades to fully realize. Promoting the benefits of greenways and trails and incorporating them into local planning decisions will be critical to realizing the vision of a fully connected system of greenways, trails, and bikeways throughout Juniata and Mifflin Counties.

### **Opportunities**

This plan outlines the numerous assets and opportunities that exist in both Counties that could contribute to a comprehensive system of greenways, trails, and bikeways. A fully realized system is much more than nice recreation features, but rather, an opportunity to enhance the quality of life for residents through expanded access for fitness, safe non-motorized connections to local destinations, economic benefits through local expenditures and tourism, and conservation of natural resources. It is important that Juniata and Mifflin Counties position themselves to seize opportunities that will create these community assets and work with State agencies and other partners to make greenways, trails, and bikeways throughout the Counties a reality.

The State-owned public lands with extensive protected natural resources provide the initial components of a greenway system traversing the Counties. The rivers, streams, and ridge corridors offer additional resources to extend the greenway system throughout the Counties. Low volume local roads, sidewalks, and local greenways and trails complete the system connecting community destination.

Figure 6-1  
Green Avenue Extension/Lewistown Middle School

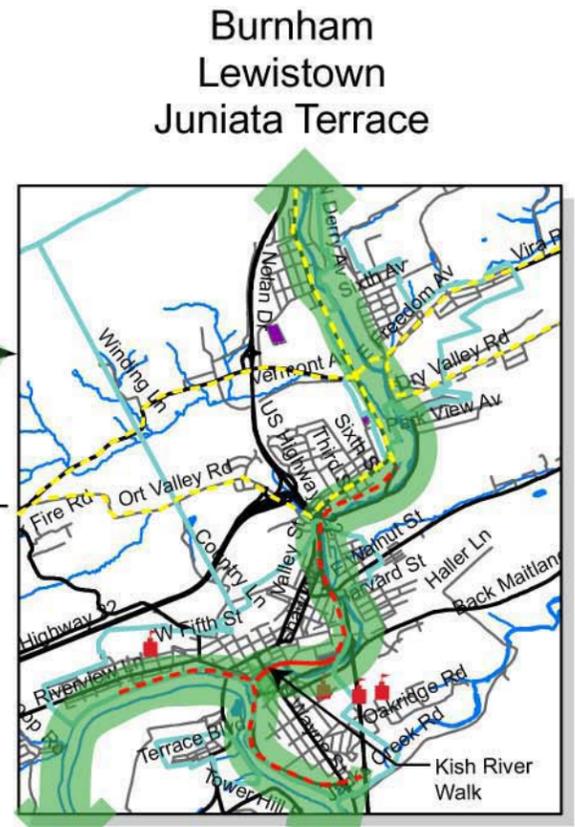
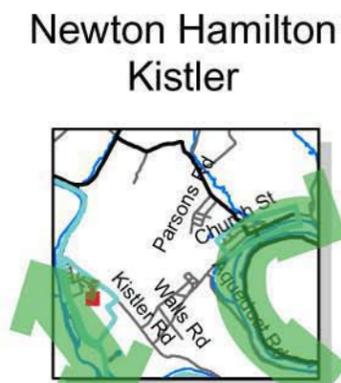
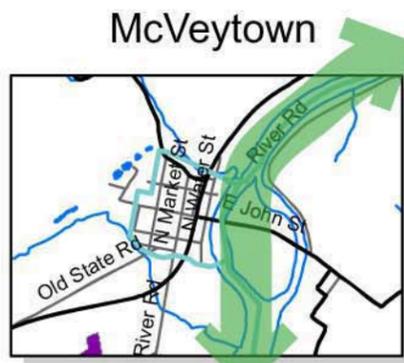
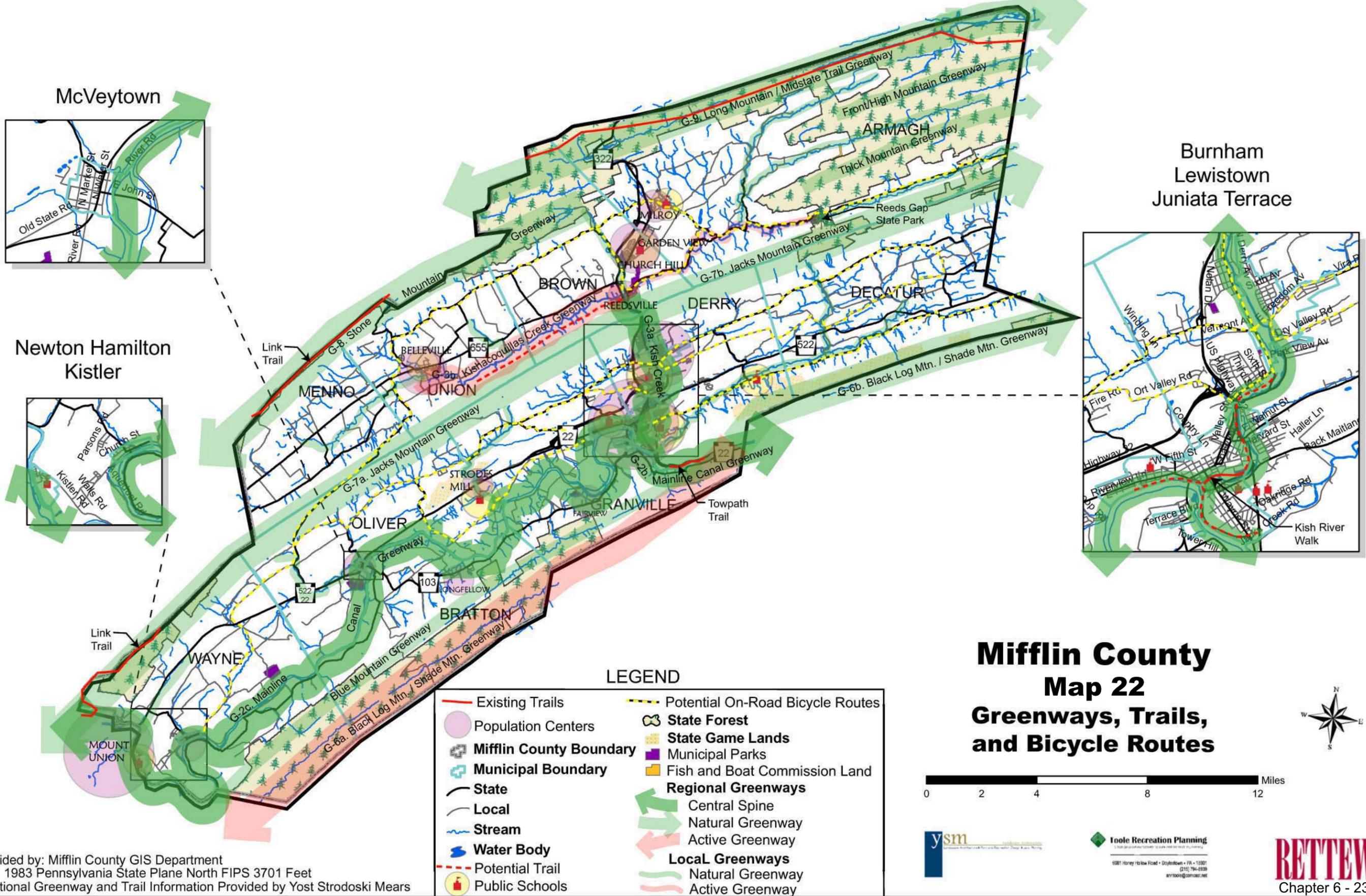


\* Easement may be required.





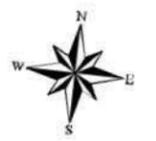
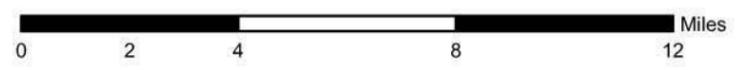
# Juniata/Mifflin County Greenway, Open Space and Rural Recreation Plan



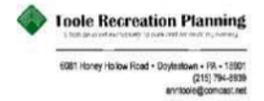
## LEGEND

- Existing Trails
- Population Centers
- Mifflin County Boundary
- Municipal Boundary
- State
- Local
- Stream
- Water Body
- Potential Trail
- Public Schools
- Potential On-Road Bicycle Routes
- State Forest
- State Game Lands
- Municipal Parks
- Fish and Boat Commission Land
- Regional Greenways**
  - Central Spine
  - Natural Greenway
  - Active Greenway
- Local Greenways**
  - Natural Greenway
  - Active Greenway

## Mifflin County Map 22 Greenways, Trails, and Bicycle Routes



Provided by: Mifflin County GIS Department  
 NAD 1983 Pennsylvania State Plane North FIPS 3701 Feet  
 Additional Greenway and Trail Information Provided by Yost Strodoski Mears





---

Chapter 7

# Conservation of Juniata and Mifflin Counties



## Introduction

Juniata and Mifflin Counties have extensive natural resource areas, agricultural lands, and public lands. Taken together, these lands provide expansive open space and create the rural setting of Juniata and Mifflin Counties that residents and visitors value. Beyond the intrinsic value of the resources is their value in enhancing the quality of life enjoyed by County residents. Residents cite the lack of traffic congestion, safe communities, healthy environment with clean water and air, and easy access and abundant natural areas as valuable attributes of living in Juniata and Mifflin Counties.

Sustaining these desired characteristics of Juniata and Mifflin Counties will not occur naturally. Planning, conservation initiatives, and proactive management of resources are necessary to maintain the areas quality of life. If we clear cut our forests the resulting soil erosion will degrade our water resources. If our waters are degraded we can not readily provide quality drinking water and must invest in expensive treatment to use this natural resource. If we build upon our best soils, more fertilizers and additives will be required to produce our foods and feed our livestock. If we haphazardly develop our land without concern for protection of wildlife or sensitive natural areas we will not realize the economic benefits from nature-based tourism and diminish the convenient access to natural areas for recreation and respite.

This chapter explores the conservation of open space and natural resources in Juniata and Mifflin Counties.

## What is Protected

Juniata and Mifflin Counties are fortunate to have significant lands owned by the Commonwealth as State Forests, Game Lands, Reeds Gap State Park, and Fish and Boat Commission lands. In Juniata County approximately 26,988 acres are owned by the Commonwealth as public lands. In Mifflin County there are approximately 67,213 acres owned by Commonwealth public land agencies. In addition to these Commonwealth land holdings, county and municipal park land, conservation

organization holdings, and farmland with permanent agricultural conservation easements add to the total of protected lands in the Counties. See the Protected Lands Maps on pages 7-10 and 7-11.

Land trust and conservation organizations are not as active in Juniata and Mifflin Counties as other locations in the state although the Central Pennsylvania Conservancy has preserve six properties for a total of 415 acres in Juniata County. In Mifflin County one property in Armagh Township, off of Lower Creek Road totaling 13.6 acres has been conserved by the Nature Conservancy.

Table 7-1 outlines the acres of protected lands in each County and the percentage of each County that is protected.

| <b>Ownership</b>                    | <b>Acres in Juniata County</b> | <b>Acres in Mifflin County</b> |
|-------------------------------------|--------------------------------|--------------------------------|
| State Parks                         | -                              | 220                            |
| State Forests                       | 17,590                         | 63,222                         |
| Game Commission                     | 9,343                          | 3,265                          |
| Fish & Boat Commission              | 55                             | 506                            |
| County Lands                        | 1,595                          | 1                              |
| Agricultural Conservation Easements | 1,541                          | 1,764                          |
| Municipal Park and Recreation Lands | 86                             | 334                            |
| Conservancy Lands                   | 415                            | 14                             |
| Total Protected Lands               | 30,611                         | 69,229                         |
| Total County Acreage                | 245,756                        | 264,299                        |
| Percent of County Protected         | 12.5%                          | 26.2%                          |

While the total protected lands are significant, much of the Counties land areas are vulnerable, lacking ownership that provides permanent protection. The non-protected lands include open space and developed lands. Developed lands consist of home sites, commercial land, industrial land, transportation and utility lands, and quasi-public lands occupied by churches, education institutions, and government entities. In Juniata County, 21.77

percent of the County is developed based on the analysis in the Juniata County Comprehensive Plan. The 2000 Mifflin County Comprehensive Plan identified 8.31 percent of Mifflin County as developed.

### What is Vulnerable

What lands are vulnerable to unplanned growth and development? Vulnerable lands comprise a significant amount of each County; 161,644 acres or 65.8 percent in Juniata County and 173,107 acres in Mifflin County or 65.5 percent of the County. These acreages are defined by subtracting the protected lands and developed lands from the total county area.

Included within these vulnerable lands are floodplains, wetlands, riparian corridors, woodlands, streams, steep slopes, important soils for agriculture, and other resources that are linked to the quality of life enjoyed by County residents. Government regulatory requirements add a layer of protection for some of these resources and some municipalities in the Counties have ordinances that provide further protection. Unfortunately, regulations and ordinances do not guarantee the appropriate management, wise use, and permanent protection of these resources for sustained conservation.



Many landowner practice sound resource management and avail themselves of the resources of County Conservation Districts, Penn State Cooperative Extension, and other agencies that provide assistance to landowners. Additionally, landowners may participate in voluntary programs such as the Conservation Reserve Enhancement

Program (CREP) or Game Commission landowner programs (Farm-Game Program, Forest Game Program, Safety Zone Program) which, in part, share the goals of natural resource protection. These programs, while important and beneficial, do not provide permanent protection status for vulnerable lands.

### Conservation Analysis

Trying to answer the question of what to conserve is challenging due to the extensive pallet of resources and special places in Juniata and Mifflin Counties. Chapters 3 through 5 explored the importance of these resources with GIS mapping that identified the generalized location of specific resources.

The resource maps provide a tool to evaluate and target conservation initiatives. GIS analysis was used to assess the risk to unprotected lands based on a composite analysis of resource mapping. A model was developed that prioritized resource areas based on research and findings of the planning process. Specific resources were determined to be critical to conservation of County resources. These features include woodlands, steep slopes, floodplains, prime soils, wetlands, and Natural Area Inventory (NAI) sites.

The mapped layers for these resources were isolated and weighted for analysis based on the following vulnerability consideration. Woodlands and steep slopes were assigned a value of two (2) as activities within these resources are not typically regulated and ordinance protection is applied on a municipality by municipality basis. Floodplains were also given a weighted value of two (2) as these areas encompass a significant portion of the riparian corridor which is critical for many ecological functions. Wetlands and NAI sites were given a weighted value of one (1) due to Department of Environmental Protection regulations that protect these features. Prime soils were also weighted as one (1) as they are typically the basis for locating agricultural zones and as such are protected by zoning ordinances. Additionally, State agricultural preservation programs target preservation of farmland with prime soils.

| Table 7-2 - Juniata and Mifflin Counties Conservation Model Weighted Values |                |
|---|----------------|
| Land Characteristics  | Weighted Value |
| Woodlands   | 2              |
| Steep slope   |                |
| Floodplain  |                |
| Wetland   | 1              |
| NAI sites   |                |
| Prime soils   |                |

The weighted analysis prioritizes areas for conservation on a continuum scale of 1 (least resources) to 9 (most resources). The graphic interpretation of the analysis is illustrated on the Targeted Conservation Area Maps (pages 7-12 and 7-13). The protected lands of each County have been highlighted to promote consideration of connectivity and target conservation of high priority areas contiguous to protected landscapes. The general description of the targeted conservation areas is listed below by County and Table 7-3 provides approximate acreage and potential methods of conservation.

### Juniata County

The Juniata County Targeted Conservation Areas Map illustrates the results of the resource weighting exercise and targeted conservation areas have been identified where there is a concentration of high conservation value lands. These targeted conservation areas in Juniata County include:

- River and stream corridors and their associated floodplain areas. High priority areas include:
  - Susquehanna River corridor.
  - Juniata River corridor.
  - Tuscarora Creek – a concentrated area of resources is located in central Tuscarora Township.
  - Willow Run in central Lack Township.
  - East Licking Creek in Milford Township.

The river and stream corridors are critical for maintaining water quality, recharging

groundwater supplies, and minimizing flood damage.

- Mountain and ridges. High priority areas include:
  - Tuscarora Mountain areas along the southern boundary of the County that are not protected by State Game Lands.
  - Black Log/Shade Mountain in Milford Township south of East Licking Creek, east of State Forest lands.
  - Black Log and Shade Mountains in Milford and Fermanagh Townships in the area of the Lewistown Narrows.
  - Slim Valley Ridge spanning the boundary between Fermanagh and Fayette Townships.

The mountain and ridge lands are vulnerable to inappropriate development, excessive logging, and other indiscriminant activities that could result in erosion and loss of habitat areas. Expanding the State Forests is important as they are typically larger blocks of forest which have higher ecological function and value than smaller fragmented forested areas.

### Mifflin County

The Mifflin County Targeted Conservation Areas Map illustrates the results of the conservation analysis. The mapping illustrates targeted conservation areas which include:

- Mountain and ridges. High priority areas include:
  - Blue Mountain and Shade Mountain – areas along the southern boundary of the County. Portions of these mountain ridges are protected by State Forest land and State Game Lands. The gap between the mountains at the Lewistown Narrows is the main area where these ridge lines are not protected.

## Conservation of Juniata and Mifflin Counties

| Table 7-3 - Juniata and Mifflin Counties<br>Targeted Conservation Areas                                 |                                  |          |   |
|---|----------------------------------|----------|---|
| Conservation Area - Location  | Size<br>(Approximate<br>Acreage) | Priority | Potential Method(s) for<br>Conservation   |
| <b>Juniata County</b>   |                                  |          |   |
| Tuscarora Mountain  | 6,640                            | Low      | Conservation easements, forest management plan, acquisition (State Forest expansion and infill)         |
| Black Log and Shade Mountains – Milford Township south of East Licking Creek, east of State Forest Land | 8,970                            | Mod      | Conservation easements, forest management plan, acquisition (State Forest expansion and infill)         |
| Black Log and Shade Mountains – Milford and Fermanagh Township in area of Lewistown Narrows             | 2,750                            | Low      | Conservation easements, forest management plan, acquisition (State Forest – State Game Lands expansion) |
| Slim Valley Ridge – at boundary between Fermanagh and Fayette Townships                                 | 1,880                            | Mod      | Conservation easements, forest management plan, acquisition   |
| Susquehanna River Corridor  | 300                              | Mod      | Conservation easements, municipal regulations   |
| Juniata River Corridor  | 7,970                            | High     | Conservation easements, municipal regulations   |
| Tuscarora Creek – in central Tuscarora Township   | 1,725                            | High     | Conservation easements, municipal regulations   |
| Willow Run – in Lack Township   | 910                              | High     | Conservation easements, municipal regulations   |
| East Licking Creek – Milford Township   | 1,400                            | High     | Conservation easements, acquisition (State Forest infill)   |
| <b>Mifflin County</b>   |                                  |          |   |
| Blue and Shade Mountains – along southern County boundary at Lewistown Narrows                          | 12,150                           | Low      | Conservation easements, forest management plan, acquisition (State Forest – State Game Land infill)     |
| Jacks Mountain  | 26,940                           | High     | Conservation easements, forest management plan, acquisition   |
| Stone, Long, Strong, and Thick Mountains  | 13,000                           | Low      | Conservation easements, forest management plan, acquisition (State Forest infill)                       |
| Juniata River Corridor  | 11,000                           | High     | Conservation easements, municipal regulations   |
| Lingle Creek – west of Mount Pleasant   | 1,150                            | Low      | Conservation easements, acquisition (expand State Forest) municipal regulations                         |
| Ferguson Valley – toe of Jacks Mtn. in Oliver Township  | 1,640                            | High     | Municipal regulations, acquisition  |
| Toe of Slope in Decatur Township  | 1,175                            | High     | Municipal regulations, acquisition  |

- Jacks Mountain for its full length within the County ranks as a priority conservation area. Jacks Mountain is a prominent well defined landscape

feature that is afforded little protection by public lands making it a very vulnerable landscape.

- Stone, Long, Strong, and Thick Mountains are important landscape features along the northern and northeastern boundary of the County. These features are well protected by State Forest land except at the western extent of the Stone Mountain ridge that is adjacent to Rothrock State Forest lands.
- River and stream corridors and their associated floodplain areas. High priority areas include:
  - Juniata River corridor.
  - Lingle Creek west of Mt. Pleasant
- Valley areas include:
  - Ferguson Valley at the toe of Jacks Mountain in Oliver Township.
  - Toe of Jacks Mountain in Decatur Township.

The Big Valley agricultural land ranks out as a lower priority than the areas identified above, based on the analysis model used. The significant contiguous nature of the valley resource is highlighted in the analysis map and this characteristic alone speaks to the importance of the area as a cultural landscape. Additionally, the Big Valley is extremely important from a soil, agricultural, and economic standpoint. Because the analytical model used placed a lesser value on prime soil and by reference agricultural lands, the Big Valley does not rank as a conservation priority. Based on the typical preservation criteria, the Big Valley would be a priority area for agricultural preservation. The Big Valley is no less important than other areas of Mifflin County but conservation must come from agricultural preservation initiatives. Programs targeted at agricultural preservation should be widely promoted throughout the Big Valley municipalities to sustain and protect this cultural landscape and its resources.

The steep mountain landscape throughout the County is vulnerable to development that does not prioritize the protection of sensitive natural resources. Jack's Mountain is particularly vulnerable due to the limited state ownership.

## Conservation Recommendations

Conservation recommendations are a synthesis of the analysis completed in this chapter as well as considerations from previous chapters. Conservation strategies considered the following:

- Population projections and growth patterns.
- Locations of existing protected lands.
- Locations of prime agricultural areas.
- Location of vulnerable natural resources.
- Recreation need and opportunities.

A four pronged approach to conservation is recommended for Juniata and Mifflin Counties. The approach targets vulnerable areas and important resources and targets opportunities unique to each County. The four components of the conservation strategy include:

- Primary agricultural areas
- Central Spine Greenway
- High priority conservation areas
- Regional parks.

The Conservation Recommendations Maps (pages 7-14 and 7-15) illustrate the locations of the four recommended conservation components.

### Primary Agricultural Areas

Agriculture is the leading industry in both Juniata and Mifflin Counties and integral to the future economic stability of the Counties. Prime agricultural areas have been identified in each County and these areas should be protected through effective agricultural zoning and agricultural conservation easements.

### Central Spine Greenway

The Juniata River and Kishacoquillas Creek corridors are designated as the Central Spine Greenway. The Central Spine Greenway has been ranked as the highest priority greenway corridor for its dominant landscape value, unique natural resources, historic and cultural significance, connectivity, and recreation value. The Conservation Analysis Map further illustrates the importance of this corridor from a natural resource perspective with targeted conservation areas identified along the river in both Counties. The river corridor should be conserved to enhance and protect the natural functions and the many opportunities the river provides.

### Targeted Conservation Areas

The Targeted Conservation Areas Map highlights areas that have high conservation values based on the analysis scenario evaluated. High priority conservation areas have been designated based on their relative scale of conservation value and ability to promote connectivity and larger scale “preserves” of natural areas. As discussed in Chapter 6, connected natural systems are ecologically more sustainable and important than unconnected systems. Larger, rounder connected reserves function better than separate, smaller, linear ones.

A variety of protection strategies should be employed to protect these areas to include land use regulations, acquisition, land owner initiatives, and outreach and education.

### Regional Parks

Three regional parks are suggested for each County. These parks are envisioned as multi-municipal recreation areas that will meet the recreation needs of citizens while protecting important open space and resource areas. The suggested general locations of the regional parks consider municipal population projections, location of primary agricultural lands, locations of existing recreation facilities, geographic features that limit ease of access, and known park opportunities.

Juniata County Regional Parks are suggested for the following general locations:

- Southern Monroe/Northern Greenwood/Western Susquehanna Townships
- Northeast Fermanagh/Northwest Fayette Townships
- Central Milford/Northeast Beale Townships

Mifflin County Regional Parks are suggested for the following locations:

- Armagh Township (Reeds Gap State Park partnership)
- Northern Brown Township
- Kistler Borough (Kistler Borough Farm)

Where possible, the regional parks should be located adjacent to permanently protected lands to expand resource protection. In some instances, regional parks that may be located adjacent to State Forest or Game Lands may help to address fragmentation of resources and offer the opportunity to link to existing trails. Additional information regarding the proposed regional parks is provided in Chapter 5.

### Land Use and Land Development Regulations

An effective strategy for promoting sound land use and conservation of important resources and natural areas is adoption of land use regulations. Zoning ordinances, subdivision and land development ordinances and other specific ordinances are tools that manage growth and land use at the local level. Unfortunately, there are municipalities in both Counties that have not adopted ordinances and many of those with ordinances, have not been updated with progressive zoning and design guidelines that promote smart development and protection of vulnerable lands. Refer to Table 7-4 for a listing of land use regulations adopted by municipalities.

| Table 7-4 - Juniata and Mifflin Counties Ordinances By Municipality |        |                                  |                        |                       |
|---|--------|----------------------------------|------------------------|-----------------------|
| Municipality  | Zoning | Subdivision and Land Development | Flood Plain Management | Stormwater Management |
| <b>Juniata County</b>   |        |                                  |                        |                       |
| Beale Township  | -      | √                                | √                      | -                     |
| Delaware Township   | √      | √                                | √                      | √                     |
| Fayette Township  | √      | √                                | -                      | -                     |
| Fermanagh Township  | √      | √                                | √                      | √                     |
| Greenwood Township  | √      | √                                | -                      | -                     |
| Lack Township   | -      | √                                | -                      | -                     |
| Mifflin Borough   | -      | -                                | -                      | -                     |
| Mifflintown Borough   | √      | -                                | -                      | -                     |
| Milford Township  | -      | √                                | -                      | -                     |
| Monroe Township   | -      | -                                | -                      | -                     |
| Port Royal Borough  | √      | √                                | √                      | -                     |
| Spruce Hill Township  | -      | √                                | -                      | -                     |
| Susquehanna Township  | -      | √                                | √                      | -                     |
| Thompsontown Borough  | √      | √                                | -                      | -                     |
| Turbett Township  | -      | √                                | -                      | -                     |
| Tuscarora Township  | -      | √                                | -                      | -                     |
| Walker Township   | √      | √                                | √                      | -                     |
| <b>Mifflin County</b>   |        |                                  |                        |                       |
| Armagh Township   | -      | √                                | √                      | -*                    |
| Bratton Township  | -      | -**                              | √                      | -                     |
| Brown Township  | √      | √                                | √                      | √*                    |
| Burnham Borough   | √      | √                                | √                      | √*                    |
| Decatur Township  | -      | √                                | √                      | √*                    |
| Derry Township  | √      | √                                | √                      | √*                    |
| Granville Township  | √      | √                                | √                      | √*                    |
| Juniata Terrace Borough   | -      | -**                              | √                      | -                     |
| Kistler Borough   | √      | -**                              | √                      | -                     |
| Lewistown Borough   | √      | √                                | √                      | √*                    |
| McVeytown Borough   | √      | -**                              | √                      | -                     |
| Menno Township  | -      | √                                | √                      | -*                    |
| Newton Hamilton Borough   | -      | -**                              | √                      | -                     |
| Oliver Township   | -      | √                                | √                      | √                     |
| Union Township  | √      | √                                | √                      | √*                    |
| Wayne Township  | -      | -**                              | √                      | -                     |

\* Subject to the Kishacoquillas Creek Watershed Stormwater Management Plan

\*\* Subject to the Mifflin County Subdivision and Land Development Ordinance

Each municipality in Juniata and Mifflin Counties should develop and adopt zoning and subdivision and land development ordinances. Ordinance provisions should promote conservation objectives and may include the following:

**Overlay Zoning** - Land use regulations may designate a zone that is overlaid on an existing zone that adds regulation governing the use of a property. This technique is typically used to protect floodplains, woodlands, wetlands, and steep slopes. Overlay zones can be designated for specific resources or areas to provide additional environmental protection. A steep slope ordinance provision limiting development on slopes greater than twenty-five percent is an example of an overlay ordinance. This strategy requires enforcement by local government and provides targeted protection of natural resources.

**Targeted Ordinance Provisions** - Municipal ordinances can incorporate provisions that target specific strategies such as tree protection during construction and buffer requirements for sensitive resources such as wetlands and streams.

**Growing Greener: Conservation By Design** - The “Growing Greener – Conservation By Design” program is a collaborative effort of the DCNR, the Natural Lands Trust, and the Governor’s Center for Local Government Services, to incorporate conservation initiatives into municipal codes through a four step initiative. This technique balances conservation and development objectives.

1. Perform Community Assessments – A community assessment evaluates land-use regulations and offers recommendations of how to incorporate conservation provisions.
2. Map Potential Conservation Lands – Identify and map primary (lands typically controlled by land use regulations, e.g. wetlands, etc.) and secondary (lands with significant natural and cultural landscape features) conservation areas of a community. The map gives guidance to landowners and developers as to where new development is compatible with site characteristics.

3. Implement Conservation Zoning – Modify zoning to encourage subdivisions that set aside at least 50-percent of the tract being developed as permanent open space and provide density disincentives for not conserving open space.
4. Require Conservation Subdivision Design Process – Require the four-step subdivision design approach that prioritizes conservation and the preservation of significant natural resources.

**Mandatory Dedication** – Mandatory dedication ordinances provide municipalities the authority to require the dedication of public land for recreation purposes as part of the development process. Refer to Chapter 5 for a detailed discussion of mandatory dedication.

### Land Owner Driven Conservation

Few know the inherent conservation value of a tract of land better than the landowner. While many landowners may be interested in protecting their land for future generations, the mechanisms for doing so may not be readily available and easily navigated. Land owner conservation efforts in Juniata and Mifflin Counties are further hampered by the lack of an active land trust or other conservation organization. Providing information to land owners about their land conservation options and assisting to facilitate the process is key to the success of these conservation options. Many of the following resource protection techniques allow the landowner to retain ownership of their land while protection certain features, while other techniques transfer ownership and management to a conservation organization.

**Selling Land for Conservation** – Landowners selling their land to a conservancy or government entity such as their municipality or the Bureau of State Forests is probably the most effective method of promoting land protection. Drawbacks for the buyers include the cost of land, the need to be agile to respond quickly to opportunities, and the long-term management commitment. Government entities must follow outlined procedures for acquisition of land. Unfortunately the real estate

market often moves at a swift pace, with parcels sold within days of becoming available. It is important that municipalities and agencies establish procedures to respond quickly to potential acquisition opportunities. Municipalities often seek open space with the assistance of acquisition grant funds from of the Pennsylvania Department of Conservation and Natural Resources (DCNR). DCNR funds up to 50 percent of land acquisition for park, nature preserves, and greenways and views acquisition of these lands a priority. The sale of private lands can take several forms to include:

- **Fair Market Value Sale** – The landowner agrees to sell their land for its current market value.
- **Bargain Sale** – The landowner agrees to sell the land at less than its appraised market value. The difference in the purchase and fair market value is considered a charitable gift for tax purposes.
- **Option to Buy** – This is an agreement where the landowner agrees to sell land or the rights of first refusal to purchase land. This agreement secures the rights of the future purchase but does not set the price or determine when the property would be sold.

**Donations or Gifts** – Land owners may wish to donate their land to a government entity or conservation organization and, in doing so, may be eligible for tax benefits. A variation of the donation scenario is when a landowner agrees to a donation with a life estate. A life estate donation allows the landowner to continue to reside at the donated property until their death or relocation, at which time the full rights of the property are conveyed to the receiving organization. The donation is considered a charitable contribution and provides tax benefits to the landowner. If a donation is made as a bequest where the ownership transfers upon the landowners' death, the donor's estate would benefit from the charitable contribution through reduced estate tax on the land.

**Sale and Resale** – If a landowner wishes to restrict the future use of a property but a buyer cannot be

found with an ongoing conservation interest, the option of selling the land to a conservation organization could be explored. The conservation organization could place restrictive deed conditions on the land to align with conservation objectives and then resell the land.

**Conservation and Access Easements** - A conservation easement is a legally enforceable agreement between the landowner and an agency or non-profit organization that places restrictions on the use of activities on a specific property which aligns with conservation objectives. Public access may be restricted. In addition to a conservation easement, on corridor lands intended for trail use, an access easement will provide the general public the right to access or pass through a privately owned land for a defined purpose such as hiking, walking, and biking. Specific activities such as motorized vehicle use may be prohibited. The landowner retains rights not surrendered in the easement agreement and the easement provisions are valid and enforceable in perpetuity. An easement may be sold, donated, or bequest.

Government entities and conservation organizations must, in most cases, reach out to landowners for conservation options to be successful. Landowners may not know what conservation options exist and how they or their heirs may benefit. Making the process easily understood and accessible is important to facilitate these land owner conservation initiatives.

## Conclusions

### Strengths

The natural resources and open space of Juniata and Mifflin Counties are critical to the quality of life that residents enjoy. Both Counties are fortunate to have extensive acreage within State Forests, Game Lands, and other governmental holdings which protect significant land area.

### Challenges

Natural areas and open areas appear abundant and accessible to all who live in and visit the Counties.

While this is currently true, much of the Counties are open to a variety of influences that may affect its character and resources. There is evidence of approaching change and market forces that, if not directed in a planned manner, could result in haphazard development and a patchwork of open space that has lost many of its important ecological functions.

The relatively affordable land and housing in Juniata and Mifflin Counties is promoting growth from the capital region and State College area. This influx of population coupled with the migration from the villages and Boroughs to suburban areas, is consuming more and more land. While many municipalities have zoning and subdivision and land development ordinances, some do not. Areas without land use regulations are vulnerable to loss of the best farmland which is the most developable land and activity that threaten natural resources. Likewise, forest land is threatened by development that fragments the resource affecting both the health of the resource and the habitat it provides, as well as, the scenic beauty of the Counties.

Approximately two-thirds of each County's land area is unprotected and vulnerable to unplanned growth and development. The future quality of life for the citizens of each County is dependant upon the future status of these lands.

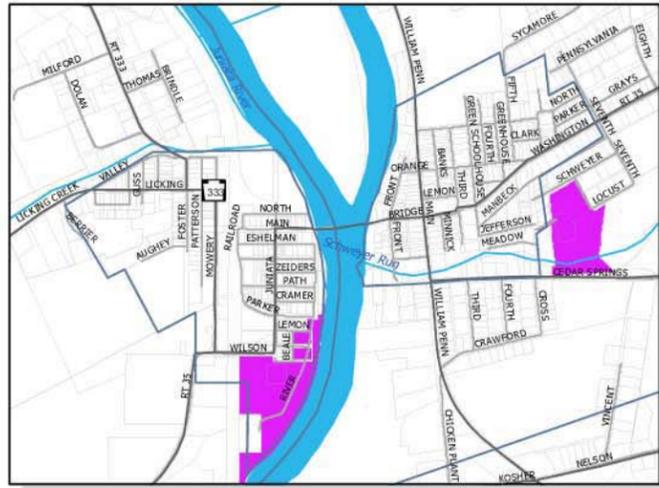
The value residents place on the open space, natural resources, and cultural landscapes of the two Counties provides the greatest opportunity for conservation. Equally important to residents is individual landowner rights and potential for land-based economic development. Awakening residents to the real threat to these resources in the Counties remains a challenge that needs to be tackled head-on.

### Opportunities

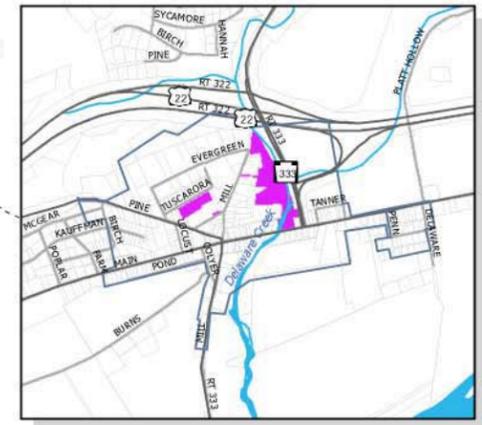
The county planning offices, County Conservation Districts, JCWP, Allegheny Ridge Corporation, Juniata River Valley Chamber of Commerce and Visitors Bureau, and other entities recognize the outstanding aspects of Juniata and Mifflin Counties and are working at various levels to conserve and protect the vulnerable resources of the Counties.



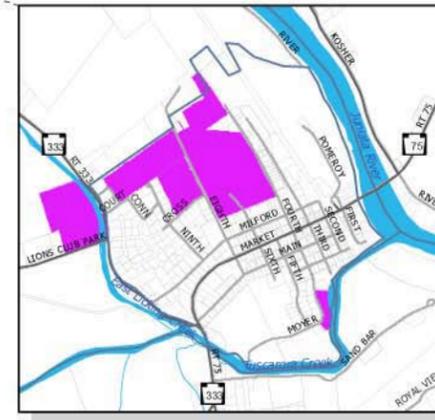
# Juniata/Mifflin County Greenway, Open Space and Rural Recreation Plan



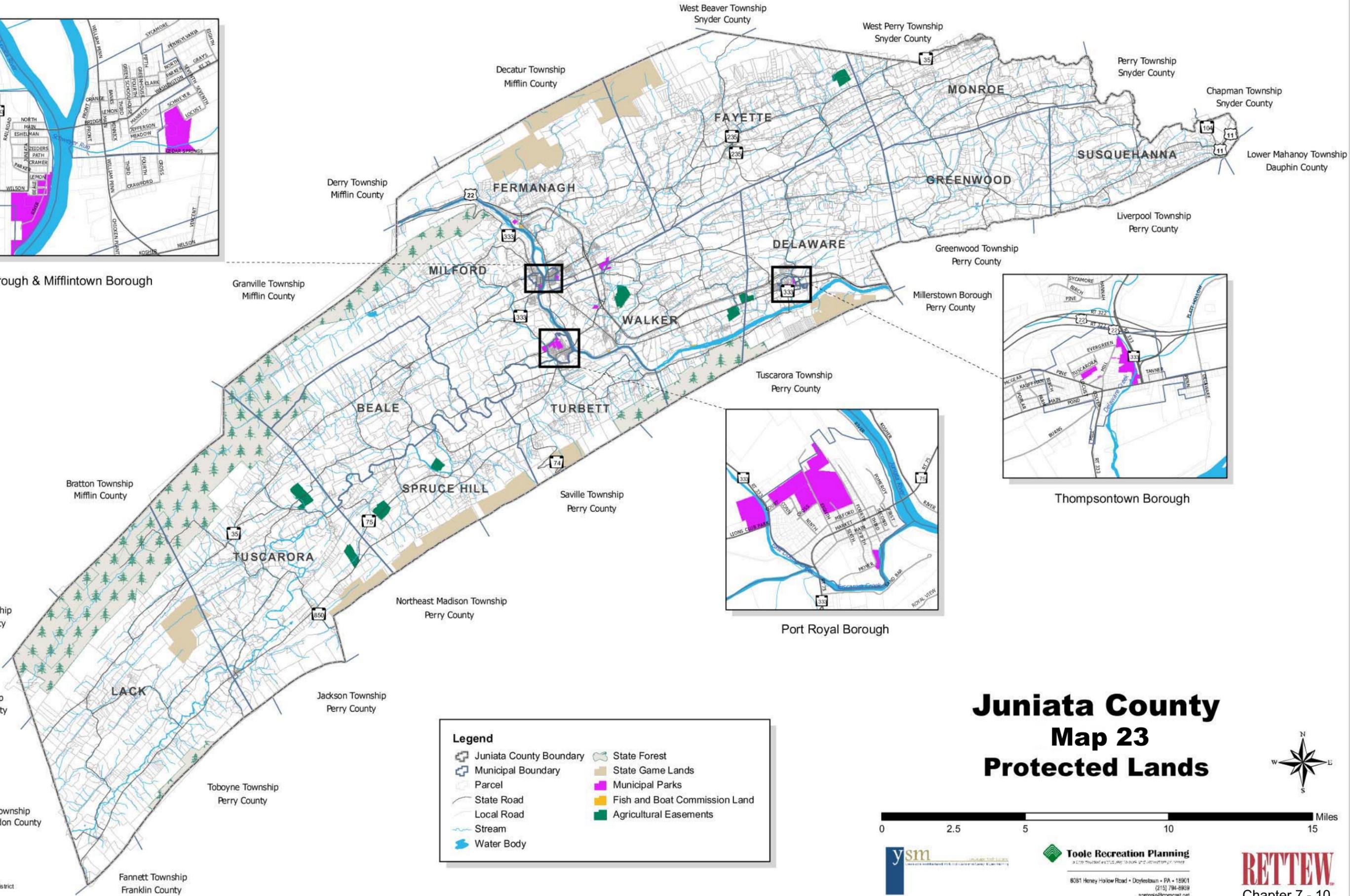
Mifflin Borough & Mifflintown Borough



Thompsontown Borough



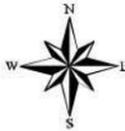
Port Royal Borough



**Legend**

|                         |                               |
|-------------------------|-------------------------------|
| Juniata County Boundary | State Forest                  |
| Municipal Boundary      | State Game Lands              |
| Parcel                  | Municipal Parks               |
| State Road              | Fish and Boat Commission Land |
| Local Road              | Agricultural Easements        |
| Stream                  |                               |
| Water Body              |                               |

## Juniata County Map 23 Protected Lands

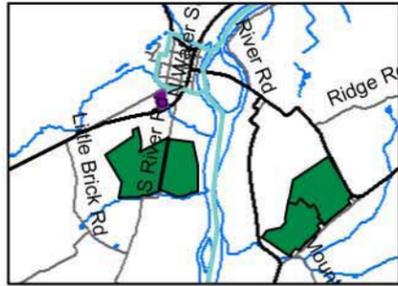


RETTEW Project No. 05-06316-001  
 PA State Plane Pennsylvania South, NAD 1983  
 Base Map Source:  
 Copyright (c) 2005, U.S. Fish and Wildlife Service  
 Copyright (c) 2006, PennDOT  
 Copyright (c) 2007, Juniata County  
 Copyright (c) 2007, Juniata County Conservation District  
 Copyright (c) 2007, RETTEW Associates, Inc.

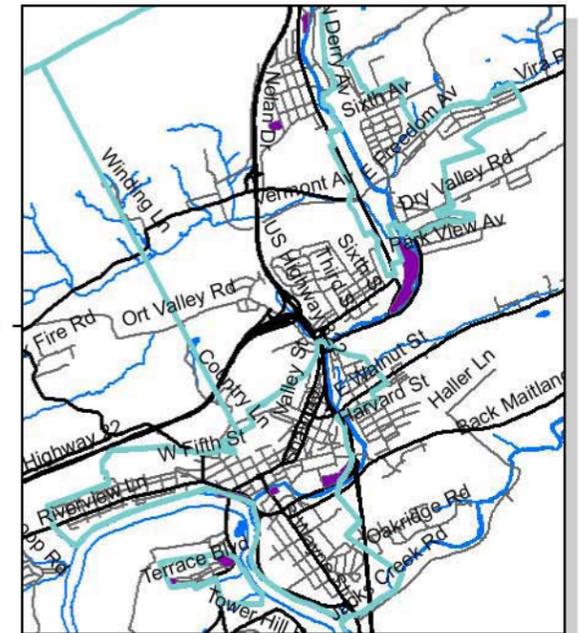


# Juniata/Mifflin County Greenway, Open Space and Rural Recreation Plan

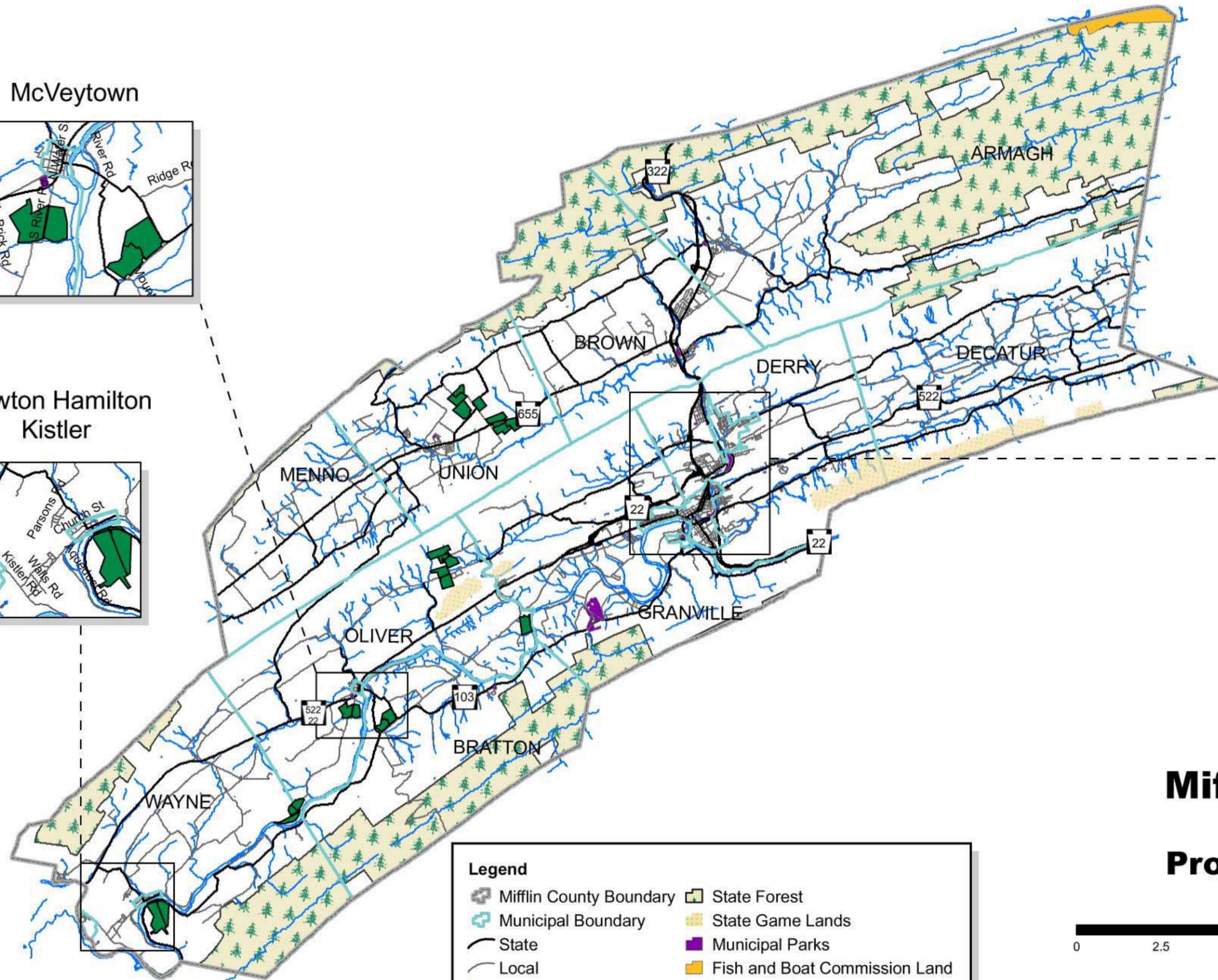
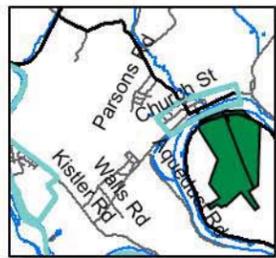
McVeytown



Burnham  
Lewistown  
Juniata Terrace



Newton Hamilton  
Kistler



**Legend**

|                         |                               |
|-------------------------|-------------------------------|
| Mifflin County Boundary | State Forest                  |
| Municipal Boundary      | State Game Lands              |
| State                   | Municipal Parks               |
| Local                   | Fish and Boat Commission Land |
| Stream                  | Agricultural Easements        |
| Water Body              |                               |

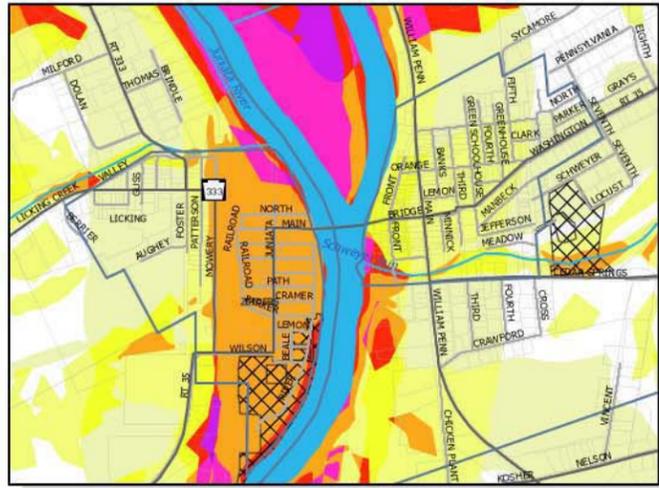
## Mifflin County Map 24 Protected Lands



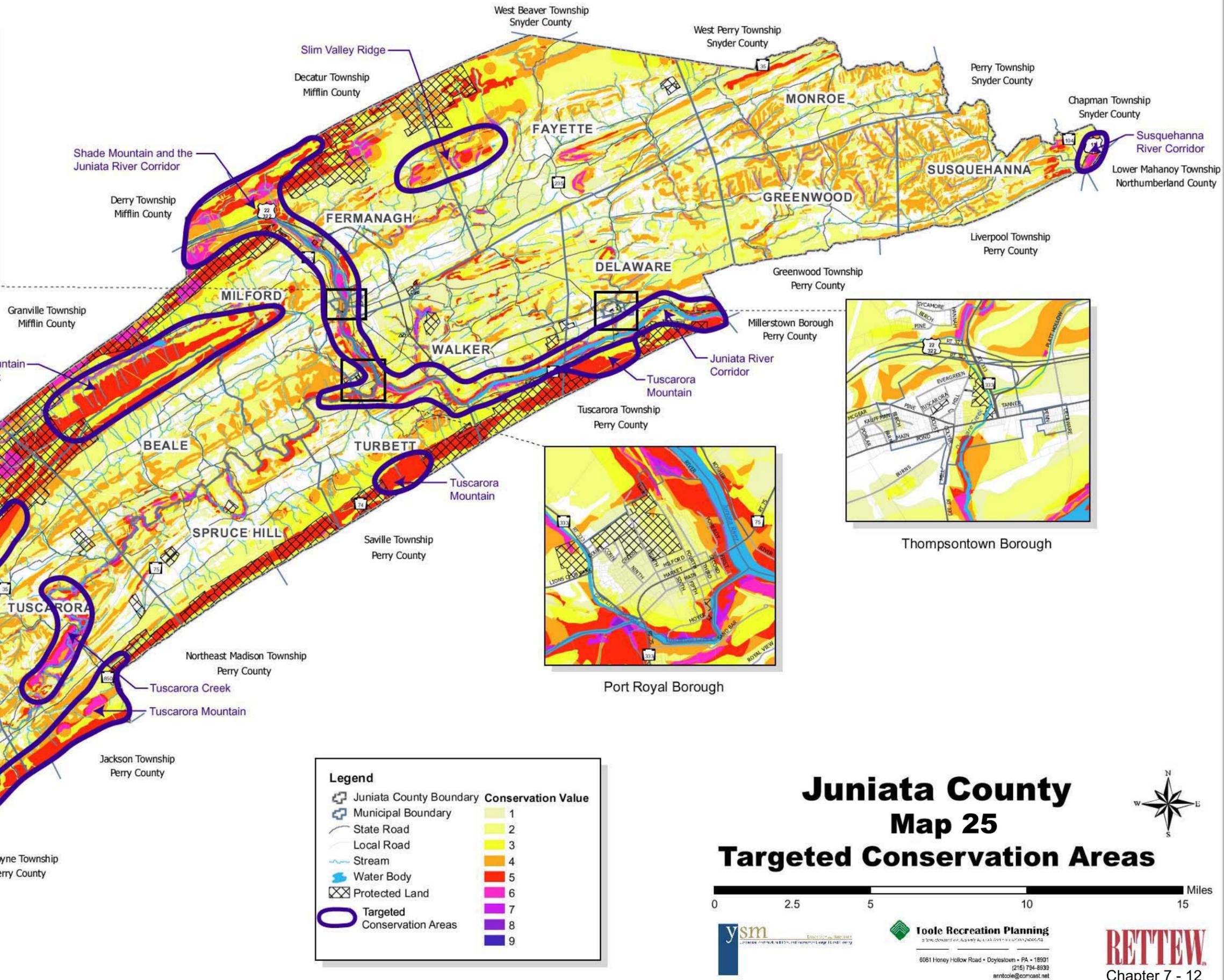
Provided by: Mifflin County GIS Department  
NAD 1983 Pennsylvania State Plane North FIPS 3701 Feet



# Juniata/Mifflin County Greenway, Open Space and Rural Recreation Plan



Mifflin Borough & Mifflintown Borough



Shade Mountain and the Juniata River Corridor

Derry Township Mifflin County

Slim Valley Ridge

Decatur Township Mifflin County

FAYETTE

MONROE

SUSQUEHANNA

Chapman Township Snyder County

Susquehanna River Corridor

Lower Mahanoy Township Northumberland County

Liverpool Township Perry County

Greenwood Township Perry County

DELAWARE

MILFORD

Granville Township Mifflin County

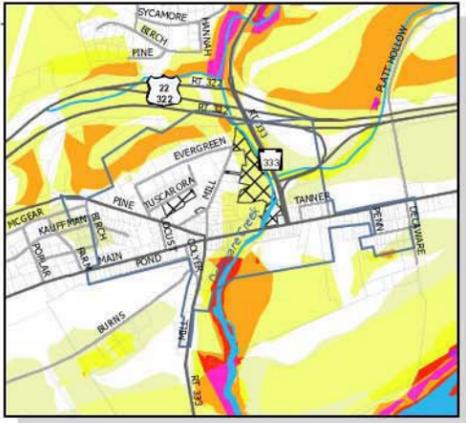
Black Log / Shade Mountain and East Licking Creek

WALKER

Tuscarora Mountain

Tuscarora Township Perry County

Juniata River Corridor

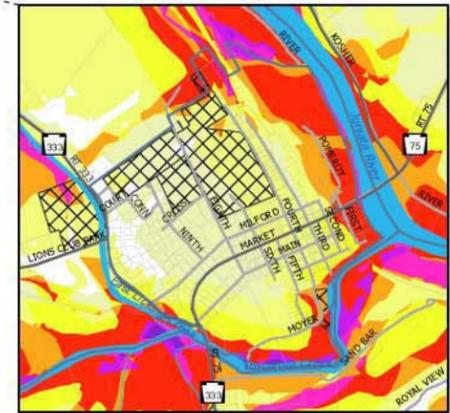


Thompsontown Borough

BEALE

TURBETT

Tuscarora Mountain



Port Royal Borough

Bratton Township Mifflin County

SPRUCE HILL

Saville Township Perry County

Shade Mountain

Northeast Madison Township Perry County

Tuscarora Creek

Tuscarora Mountain

Wayne Township Mifflin County

Shirley Township Huntingdon County

LACK

Jackson Township Perry County

Willow Run

Toboyne Township Perry County

Tell Township Huntingdon County

Fannett Township Franklin County

**Legend**

|  |                             |                           |
|--|-----------------------------|---------------------------|
|  | Juniata County Boundary     | <b>Conservation Value</b> |
|  | Municipal Boundary          | 1                         |
|  | State Road                  | 2                         |
|  | Local Road                  | 3                         |
|  | Stream                      | 4                         |
|  | Water Body                  | 5                         |
|  | Protected Land              | 6                         |
|  | Targeted Conservation Areas | 7                         |
|  |                             | 8                         |
|  |                             | 9                         |

## Juniata County Map 25

### Targeted Conservation Areas

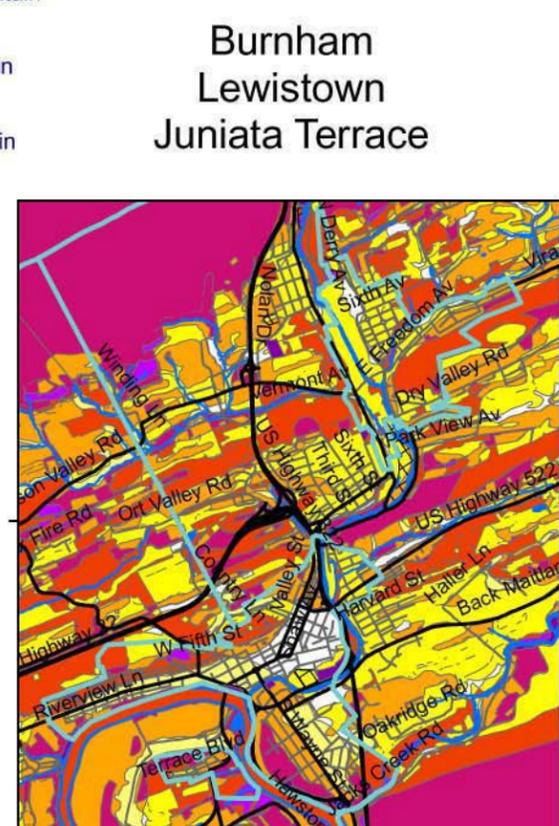
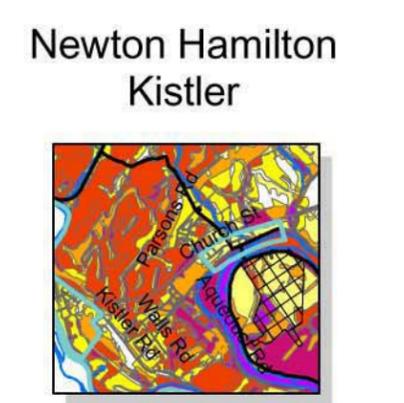
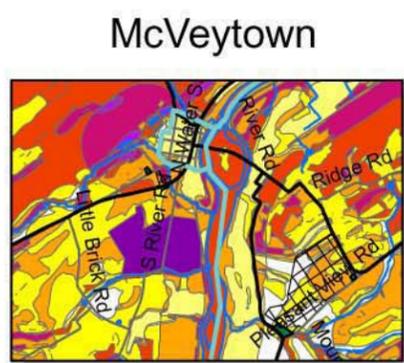
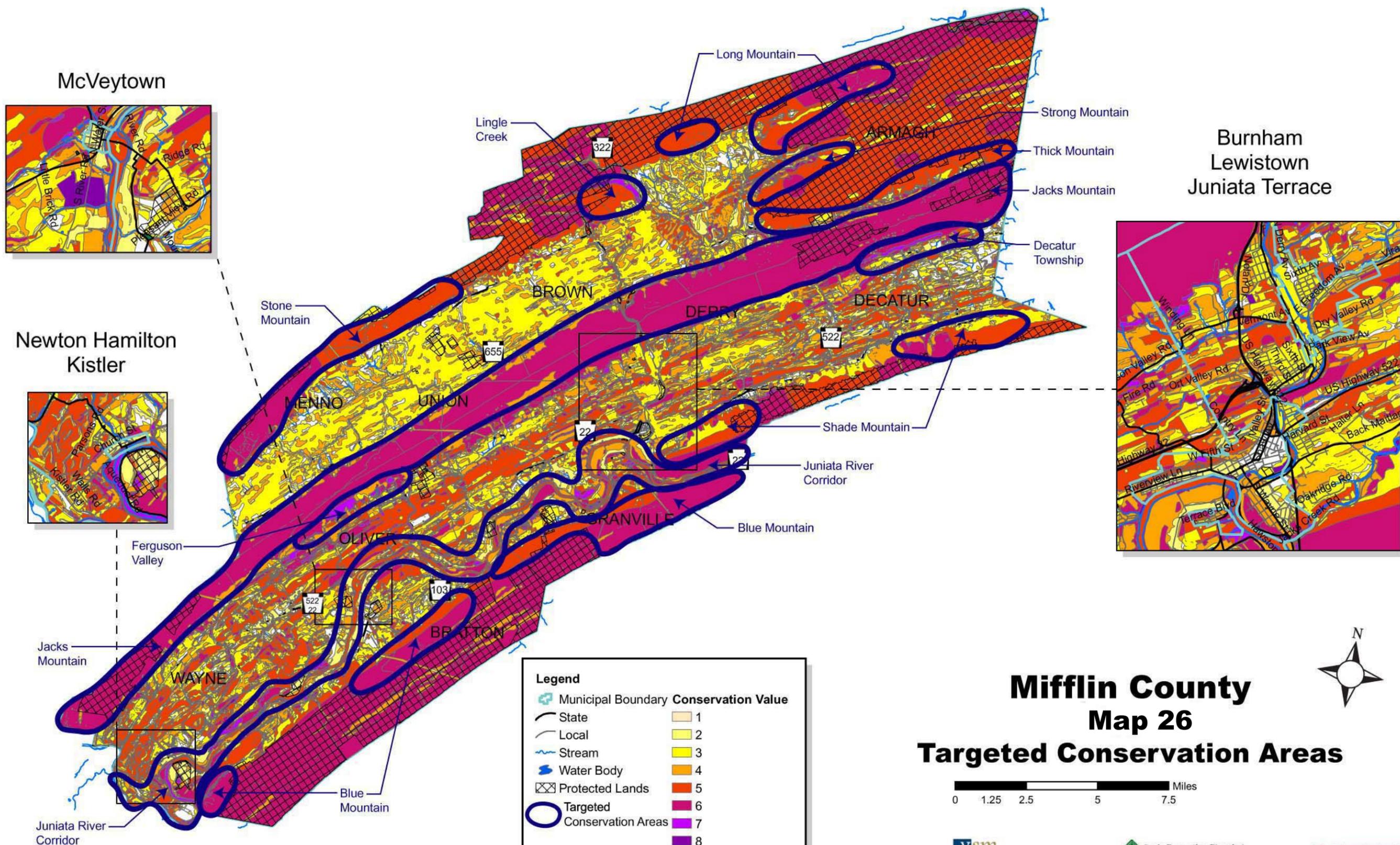


**Toole Recreation Planning**  
 6081 Honey Hollow Road • Doylesville • PA • 18001  
 (215) 794-8939  
 arntoole@comcast.net

**RETTEW**  
 Chapter 7 - 12

RETTEW Project No. 05-06316-001  
 PA State Plane Pennsylvania South, NAD 1983  
 Base Map Source:  
 Copyright (c) 2005, U.S. Fish and Wildlife Service  
 Copyright (c) 2006, PennDOT  
 Copyright (c) 2007, Juniata County  
 Copyright (c) 2007, Juniata County Conservation District  
 Copyright (c) 2007, RETTEW Associates, Inc.

# Juniata/Mifflin County Greenway, Open Space and Rural Recreation Plan



**Legend**

|  |                             |  |   |
|--|-----------------------------|--|---|
|  | Municipal Boundary          |  | 1 |
|  | State                       |  | 2 |
|  | Local                       |  | 3 |
|  | Stream                      |  | 4 |
|  | Water Body                  |  | 5 |
|  | Protected Lands             |  | 6 |
|  | Targeted Conservation Areas |  | 7 |
|  |                             |  | 8 |
|  |                             |  | 9 |

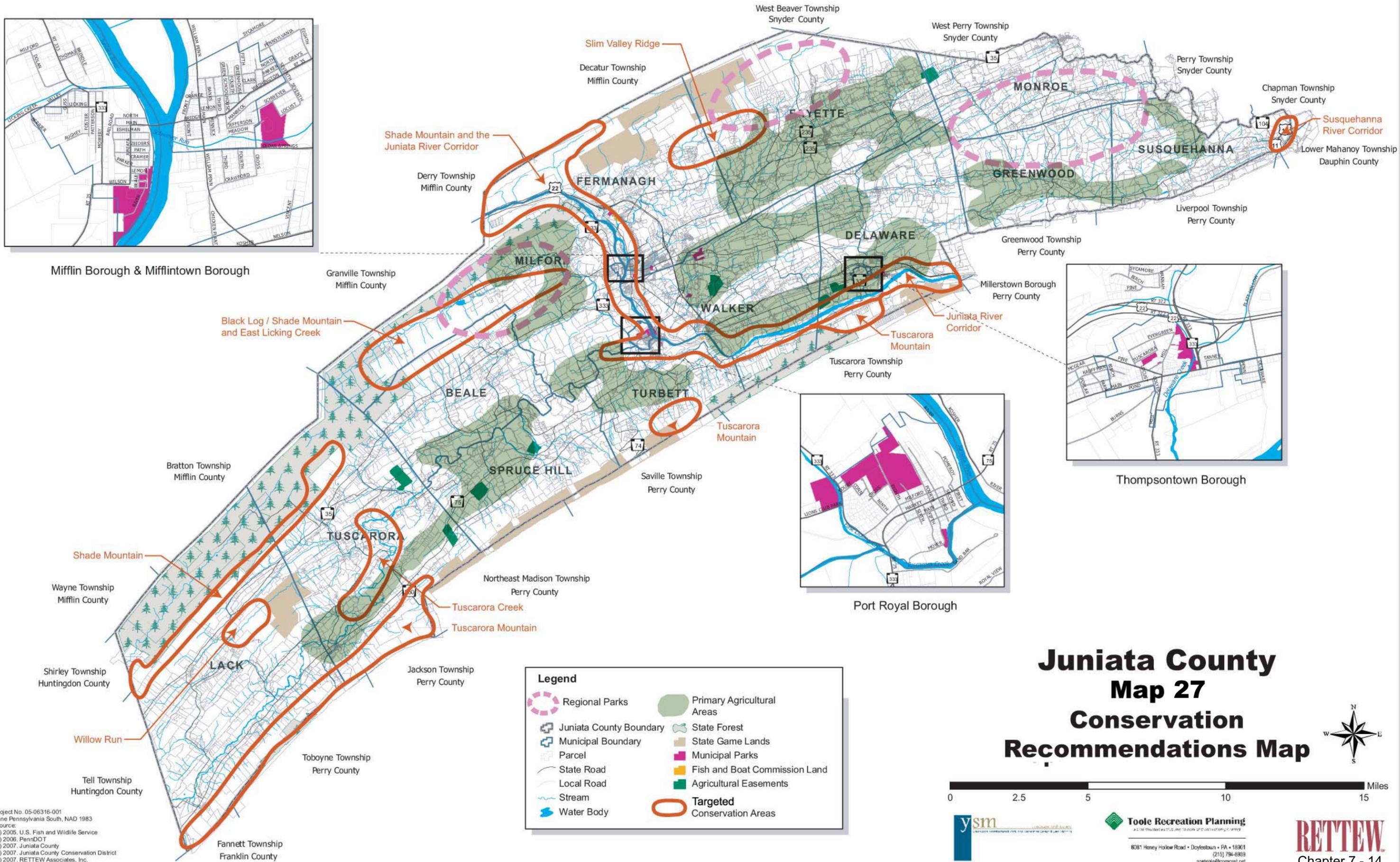
## Mifflin County Map 26 Targeted Conservation Areas



Provided by: Mifflin County GIS Department  
NAD 1983 Pennsylvania State Plane North FIPS 3701 Feet



# Juniata/Mifflin County Greenway, Open Space and Rural Recreation Plan



| Legend |                               |
|--------|-------------------------------|
|        | Regional Parks                |
|        | Primary Agricultural Areas    |
|        | State Forest                  |
|        | State Game Lands              |
|        | Municipal Parks               |
|        | Fish and Boat Commission Land |
|        | Agricultural Easements        |
|        | Targeted Conservation Areas   |
|        | Juniata County Boundary       |
|        | Municipal Boundary            |
|        | Parcel                        |
|        | State Road                    |
|        | Local Road                    |
|        | Stream                        |
|        | Water Body                    |

## Juniata County Map 27 Conservation Recommendations Map

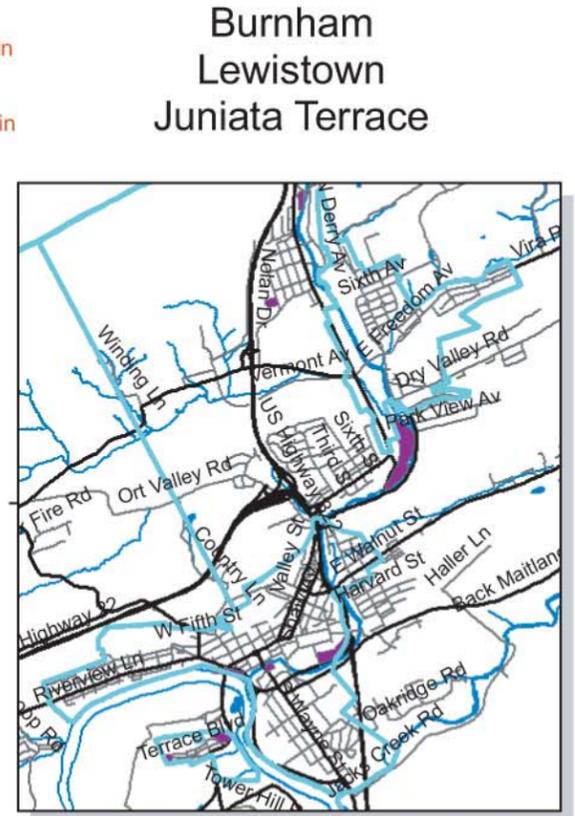
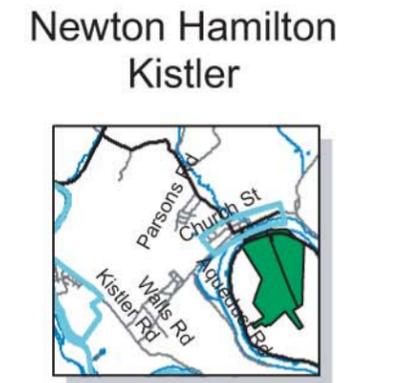
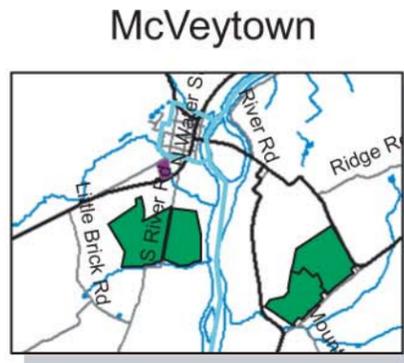
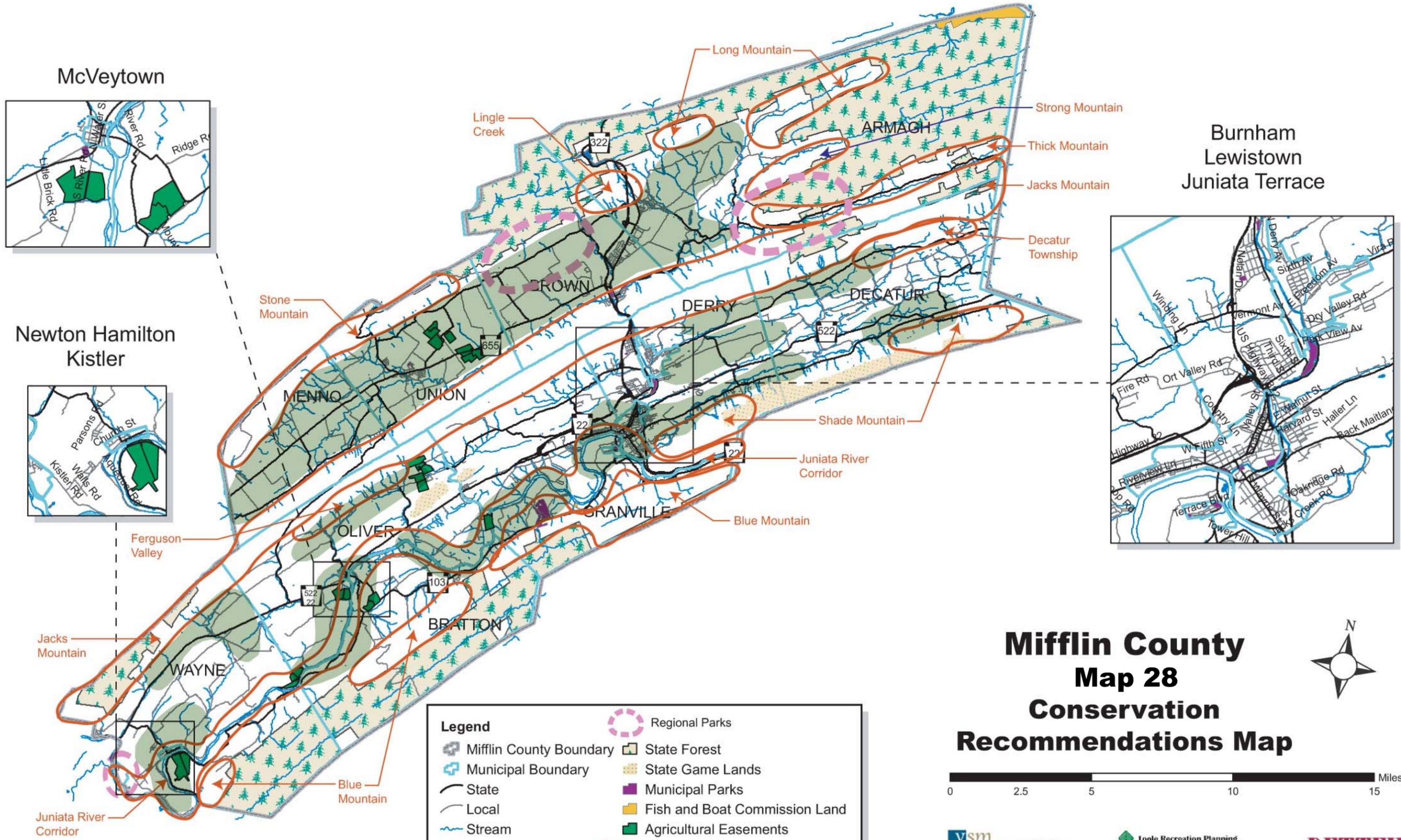


RETTEW Project No. 05-06316-001  
 PA State Plane Pennsylvania South, NAD 1983  
 Base Map Source:  
 Copyright (c) 2005, U.S. Fish and Wildlife Service  
 Copyright (c) 2006, PennDOT  
 Copyright (c) 2007, Juniata County  
 Copyright (c) 2007, Juniata County Conservation District  
 Copyright (c) 2007, RETTEW Associates, Inc.



**Toole Recreation Planning**  
 8081 Honey Hollow Road • Doylesville • PA • 18001  
 (215) 794-8800  
 anetool@comcast.net

# Juniata/Mifflin County Greenway, Open Space and Rural Recreation Plan



| Legend |                               |
|--------|-------------------------------|
|        | Mifflin County Boundary       |
|        | Municipal Boundary            |
|        | State                         |
|        | Local                         |
|        | Stream                        |
|        | Water Body                    |
|        | Regional Parks                |
|        | State Forest                  |
|        | State Game Lands              |
|        | Municipal Parks               |
|        | Fish and Boat Commission Land |
|        | Agricultural Easements        |
|        | Targeted Conservation Areas   |
|        | Primary Agricultural Areas    |

**Mifflin County  
Map 28  
Conservation  
Recommendations Map**

N

0 2.5 5 10 15 Miles

Provided by: Mifflin County GIS Department  
NAD 1983 Pennsylvania State Plane North FIPS 3701 Feet

**RETTEW**  
Chapter 7 - 15