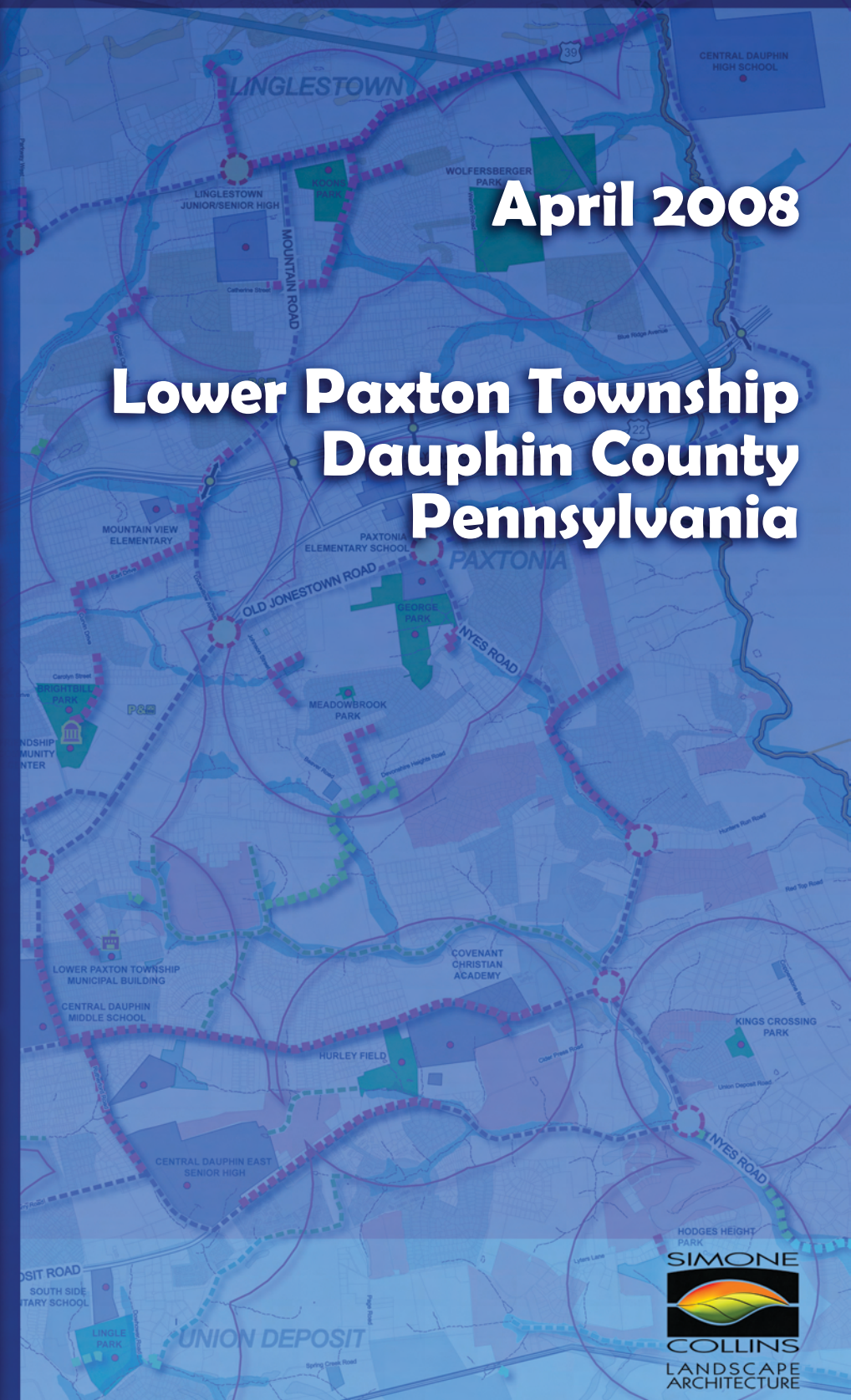




Lower Paxton Township Greenway Plan

April 2008

Lower Paxton Township Dauphin County Pennsylvania



Lower Paxton Township Greenway Plan

April 2008

Prepared for:

**The Township of Lower Paxton
Dauphin County
Pennsylvania**

Greenway Committee:

Chris Johnston, Chair
Bob McCartney, Vice-Chair
Norm Lacasse
Betsy Sibert
Priscilla St. Jacques – Glusko

Township Staff Liaisons:

Brian Luetchford
Bill Weaver

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Keystone Recreation, Park, and Conservation Fund
under the administration of the
Department of Conservation and Natural Resources (DCNR)
Bureau of Recreation and Conservation**

This study was prepared by:



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Executive Summary

The Lower Paxton Township Greenway Plan proposes both a series of bicycle and pedestrian improvements that will provide various transportation and recreation opportunities in the Township, and modifications to existing ordinances to provide additional protection to the Township's natural resources. This plan builds upon the recommendations set forth in Township's Comprehensive Plan, and will establish links between neighborhood developments and greenway destination points such as local and regional parks, schools, community & commercial destinations, and other trails beyond the township boundaries.

The Greenway Plan accomplishes the **project goals** of inventorying the existing "gray" and "green" infrastructure from this and other previously published reports into a geographic information system (GIS) database; analyzing that information to identify the opportunities and constraints for greenway development; and identifying the appropriate trail types for each of the preferred trail routes.



Public participation included three public meetings, four study committee meetings, and a number of key person interviews held over a seven-month period from November 2006 through June 2007. All meetings were well attended and the input received from Township residents at those meetings had major impacts to the plan. This input resulted in prioritizing the proposed trail routes and bicycle / pedestrian facilities to be first implemented at the "neighborhood" level in order to have the most benefit for the majority of Township residents.

The most important **benefit of a trails & greenway system** is the opportunity these facilities can provide towards bettering the community's general health and well being through regular physical activity. The opportunity for physical activity that trails & greenway related facilities provide not only fights obesity and related diseases, but also results in reduced health care costs, increased work productivity, and improved longevity for the community as a whole. Other benefits include enhanced property values and environmental education opportunities.

Executive Summary

Proposed Improvements

The Greenway Plan includes the following proposed bicycle and pedestrian improvements to be implemented primarily within new residential land developments and within existing public rights-of-way:

- Neighborhood Off-Road Trails;
- Neighborhood Bikeway and Walkway Connections;
- Township – Off Road Trails;
- Township – On-Road Cycling Routes; and,
- Intersection Improvements.

The estimated total cost for these improvements totals \$14.1 million, however it is envisioned that the majority of improvements will be funded through land development and roadway improvement projects. The remainder can be obtained at a minimal cost to the Township if properly leveraged through a number of potential funding sources outlined in the report.

General Plan Recommendations

- Adopt this Greenway Plan as an addendum to the Township Comprehensive Plan;
- Ensure that the proposed improvements within this plan are included in all new land development and roadway improvement projects;
- The Township must use its municipal funds to leverage additional grant funding from state and federal sources; and,
- Adopt a Riparian Corridor Conservation Overlay Zoning District to provide “protective” greenways that have the potential to preserve long corridors of natural land or sensitive features and serve as a placeholder for future trail plans.

Implementation Priorities

1. Construct a ‘Safe Routes to School’ demonstration project. This process is underway with the Township having submitted a DCNR Development Grant application in April 2007;
2. Complete the Neighborhood bikeway and sidewalk connections along existing roadway corridors between neighborhoods and destinations;
3. Complete the Neighborhood off-road connections;
4. Prepare Feasibility Studies / Master Plans for the Off-Road trail connections along stream corridors; and,
5. Keep an eye on the opportunities to provide connections to regional trails and/or bikeway systems beyond Township borders.

Chapter One: Introduction

This project was financed in part by a grant from the Community Conservation Partnerships Program, Keystone Recreation, Park and Conservation Fund, under the administration of the Pennsylvania Department of Conservation and Natural Resources (DCNR), Bureau of Recreation and Conservation.

In the autumn of 2006, Lower Paxton Township solicited proposals from consultants for the development of a township-wide Greenway Plan. From the proposals received, the Township interviewed and selected Simone Collins Landscape Architecture to complete the plan.

Study Purpose, Goals, Objectives, and Findings

Lower Paxton Township is facing intense land development pressures. To illustrate this pressure, a study developed by Penn State University known as the '2005 Land Use and Growth Management Report' includes exhibits that show the approximate impervious surface coverage - and a dramatic increase - between years 1985 and 2000 (Please refer to the report appendix for these exhibits). Township residents have responded by participating in the creation of the Township's Comprehensive Plan and calling for bicycling and pedestrian networks to be part of future planning efforts and ultimately this Greenway Plan.

Greenway Plan Purpose

The purpose of the Lower Paxton Township Greenway Plan is to:

1. Conduct a study of the community and effectively identify and delineate existing natural areas, "green corridors" and other greenway enhancement opportunities within the community;
2. Develop a set of planning policies for how natural areas, roadways, and easements may be utilized and appropriately integrate these policies within the comprehensive plan and recreational planning program;
3. Articulate acquisition policies for obtaining greenway areas for a variety of public benefits; and,
4. Examine municipal ordinance provisions to ensure compatibility with Dauphin County planning and ensure that greenway areas are appropriately protected as important natural features for the benefit of the public.

The Township has identified several benefits that will result from this project, including:

- Economic Benefits (i.e. eco-tourism, enhanced property values);
- Social Benefits (i.e. improved quality of life and public health,

1: Introduction

- environmental education opportunities); and,
- Recreation & Transportation Benefits (i.e. additional recreation facilities and non-motorized linkages to Township destinations).

Greenway Plan Goals include:

- Inventory man-made or “Gray Infrastructure”;
- Inventory natural resources or “Green Infrastructure”;
- Identify township destinations, existing trails, and potential connections to regional facilities located in adjacent municipalities;
- Identify potential greenway / trail types;
- Identify preferred trail route(s) and trail support facilities such as Township destinations, developments with existing sidewalks, new developments, and other trail facilities; and,
- Identify project partners for greenway implementation.

Greenway Plan Objectives include:

- Correlate information gathered from this and other studies into a single comprehensive study;
- Identify key issues, opportunities and constraints for greenway development;
- Map alternative trail alignments;
- Specify construction requirements (per facility type) and prepare an estimate of probable development costs;
- Provide measures for the preservation of natural areas found along stream corridors;
- Prepare an implementation and funding strategy, including the identification of potential funding resources; and,
- The selection a demonstration project that will jump start future plans to create a township-wide greenway system.

Greenway Study Findings:

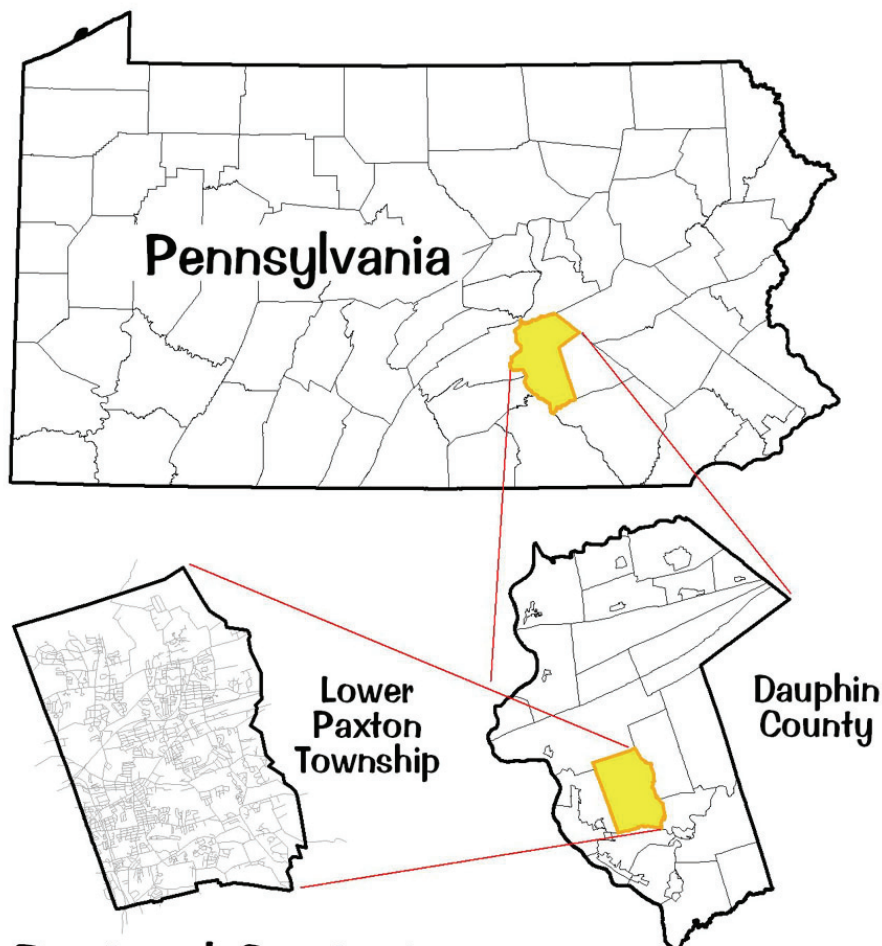
Study Committee input and community input from the public participation process led to the identification of a “Phase 1” network of pedestrian and bicycle facilities that will serve the largest percentage of Township residents and contribute to the long term potential for regional connections to adjacent municipalities and/or facilities. The primary focus of these Phase 1 planning efforts concentrates on connecting the following elements:

- Neighborhoods with existing sidewalks;
- New or proposed residential land developments;
- Public destinations (schools, parks, and other institutions);
- Stream corridors; and,
- Planned facilities in adjacent municipalities.

Township Background

Lower Paxton Township is located in the greater Harrisburg area situated about 5 miles northeast of downtown Harrisburg in Dauphin County, Pennsylvania. The Township consists of a total land area of 28.1 square miles and is bordered by municipalities of Susquehanna Township, Middle Paxton Township, West Hanover Township, South Hanover Township, and Swatara Township. Incorporated in 1767 from Paxton Township, Lower Paxton Township is classified as a second class Township governed by a five member board of supervisors.

According to the 2000 U.S. Census, the total population of Lower Paxton Township was 44,424 residents, making it the 19th most populous municipality in Pennsylvania. The character of the Township is that of a densely populated residential suburb containing few rural areas with a population density of 1,580 people per square mile. The median age of the population was 39 years with 22.5% of the population under the age of 18. Average household size was recorded at 2.35 persons per household with a median income of \$49,566.



Regional Context

not to scale

Regional Context

The exhibit to the left shows the relationship between Lower Paxton Township, Dauphin County and the State of Pennsylvania.

Benefits of Trails & Greenways Planning

Having an established trails & greenways system provides many economic, social - and most importantly - health benefits for township residents. Economic benefits include increased real estate and property values for those located near trails & greenways. Social benefits of trails include providing

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additional locations for community interaction and improving the quality of life.

The most important benefit of a trails & greenway system is the opportunity these facilities can provide towards bettering the community's general health and well being through regular physical activity. Depression, obesity and diabetes are chronic diseases directly related to the physical inactivity and unhealthy eating habits associated with a sedentary lifestyle. The US Department of Health and Human Services, Center for Disease Control and Prevention (CDC) reports that in the past 30 years, the prevalence of obesity amongst adults aged 20-74 has increased from 15.0% to 32.9%, and the estimated cost of obesity in the United States in 2000 was about \$117 billion. For more information on the facts presented as well as many other programs promoting healthy lifestyles by the CDC, please refer to their website: <http://www.cdc.gov/HealthyLiving/>

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

Chapter Two: Inventory & Analysis

Data Collection & Methodology

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

Geographic Information System (GIS) base map information was obtained from Lower Paxton Township GIS department and the Tri-County Regional Planning Commission. Field maps were prepared from the GIS database consisting of the base aerial photography and other identifying features. The consultants performed initial field reconnaissance on 12/19/06 and 3/20/07 to inventory, analyze and document existing conditions. Field data was recorded by the consultant onto the field maps, and photographs were taken of existing site conditions for use in the evaluation process of the trail alignment alternatives. Secondary field visits were performed to field check proposed alignments and verify existing conditions during the conceptual trail alignment design phase.

The Township assembled a study committee to represent a diverse cross section of the community. This committee provided valuable insight and direction to the consultant for development of the plan. In addition to the site visits, a series of public meetings and study committee meetings were held throughout the planning process. These meetings provided additional information and community feedback that contributed to the development of the Lower Paxton Township Greenway Plan.

The completed Final Greenway Plan, GIS mapping was forwarded to the Township in PAMAGIC consortium standard to be utilized for future planning endeavors. It should be noted that a topographic survey of existing conditions must be prepared for any specific trail sections prior to commencing design development and construction documentation.

Programming / Public Participation Summary

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

Three (3) public meetings and four (4) Study Committee meetings were held during the Lower Paxton Township Greenway planning process. Public Meeting #1 was held on December 5, 2006 and focused on the consultant's scope of work, programming, benefits of greenways, and initial ideas and

2: Inventory & Analysis

concerns. Public Meeting #2 was held on February 6, 2007 and presented the initial alignment options and findings from the consultant site reconnaissance and analysis. Public Meeting #3 was held on April 3, 2007 and included a presentation of the recommendations included in the DRAFT Plan. Study committee meetings took place in November, 2006 and prior to Public Meetings #1 & #2. A fourth and final study committee meeting was held in June 2007 to present the final plan and consider the next possible steps. All Public Meetings were held at the Lower Paxton Township Municipal Building while Study Committee meetings were also held at the Friendship Community Center.

Existing Planning Documents – Review

Existing and on-going planning documents that contributed to the development of The Lower Paxton Township Greenway Master Plan include:

- 1997 Swatara Creek Greenway and River Conservation Plan
- 2002 Master Plan Report for the Pedestrian Path Plan, West Hanover Township
- 2004 Lower Paxton Township Comprehensive Plan for Community Resources
- 2005 Natural Areas Inventory of Dauphin County, Pennsylvania
- 2006 Paxton Creek Rivers Conservation Plan
- Lower Paxton Township Zoning Ordinance, July 11, 2006
- Lower Paxton Township Subdivision and Land Development Ordinance (under development - consultant in-progress review comments can be found in the report appendix.)
- Walnut Street Corridor Redevelopment Planning Study (under development)
- Kittatinny Ridge Conservation Project-Audubon Society (under development)

Planning Documents - Summaries

Swatara Creek Greenway and River Conservation Plan - Completed in 1997, this plan provides a vision for 12 mile area along the Swatara Creek beginning north of Hummelstown in South Hanover Township and extending south to the Susquehanna River in Swatara Township. Professional analytical research and public participation identified potential problems and opportunities within the study area. Goals and objectives were established for varying issues such as; natural resources, cultural resources, land use, recreation, land protection, and land management. Key themes of the plan included the following:

- A three phase plan, with the most obtainable phases being implemented first;

- A multimodal transportation approach was suggested that included separate on and off-road walking and biking trails, canoe access, and the reconstruction of important infrastructure to convey these activities;
- Enhanced open space and natural resource ordinances are called for to protect the existing resources and proposed enhancements along the corridor;
- The plan proposes using the former Union Canal Towpath. This towpath is now located on private land, requiring the municipality to obtain many easements for the proposed trail alignment;
- The report suggests that various committees and support groups be formed to oversee the implementation of this project; and,
- No trail or bike connections are proposed to connect to Lower Paxton Township.

The nearest connection point from Lower Paxton Township would be approximately 1 mile south of the township boundary along the Nyes Road Corridor.

2002 Master Plan Report for the Pedestrian Path Plan, West Hanover

Township - This plan used public participation, legal constraints, and site data/analysis to determine the best possible pedestrian path locations for West Hanover Township. The final master plan lays out approximately 55 miles of interconnected trails/routes intended for pedestrian, bicycle, and equestrian uses that connect to key destinations throughout the township. A connection to the Horseshoe Trail - which eventually connects to the Appalachian Trail - is proposed with this plan. The many route alternatives presented for implementation in this plan will take many years to complete. The report outlines several ordinance changes needed to expedite construction of the project. Several path connections to Lower Paxton Township are proposed in the following areas:

- Bicycle/pedestrian connections along State Route 443 (Fishing Creek Valley Road);
- Bicycle/pedestrian linkages along State Route 39;
- CAT bicycle and pedestrian catchment areas
- Bicycle/pedestrian route along Route 22;
- Equestrian routes along the GPU electric transmission line in the western portion of the Township; and,
- A pedestrian route along Terrann Drive.

The report includes an in-depth cost estimate for the implementation and maintenance for each of the proposed improvements.

2: Inventory & Analysis

Lower Paxton Township Comprehensive Plan for Community Resources - Completed in 2004, this plan builds upon comprehensive plans adopted in 1972, 1982, and 1992, and developed a vision and action plan which resulted in a township-wide Comprehensive Plan being adopted by the Township. Analysis included demographic information, land use, transportation, cultural resources, community facilities and services, utilities, and natural resources. Transportation networks were analyzed which included vehicular, public, pedestrian, and bicycle traffic.

From these studies, action plans were designed to improve traffic flow and implement strategies to meet objectives for recommended bicycle and pedestrian routes. Many intersection improvements were recommended to improve pedestrian and vehicular safety in the Township. Major regional bike routes were identified along Nyes Road, Route 22, and Route 39. The plan shows many other local bike routes and an interconnected bike route system that links cultural resources such as schools, parks, and commercial centers. An improved pedestrian corridor is recommended in Paxtonia along Jonestown Road and Johnson Lane. Other pedestrian improvements are recommended around Central Dauphin Jr. and Sr. High Schools, and around Linglestown Jr. High School. The proposed completion date for all of the aforementioned improvements is 2012.

2006 Paxton Creek Rivers Conservation Plan - This plan takes a three step approach that calls for the protection of watershed resources, remedies to watershed problems, and enhancement of watershed attributes. The study area encompasses 27 square miles that make up the Paxton Creek watershed. The Paxton Creek starts in Lower Paxton Township and travels through the City of Harrisburg where it empties into the Susquehanna River. The report claims that the Paxton Creek is among the highest sediment generators in the Middle Atlantic Region, and that during the last half century sprawl type development has resulted in a 30% increase in impervious coverage. The identification of watershed issues, problems, and opportunities were paramount to the analysis of this plan. The results of the analysis concluded that specific best management practices (or BMP's) need to be implemented to stem the current rate of erosion, flooding, and pollution. Some of the BMP's suggested include swales, rain gardens, bioretention areas, and riparian reforestation. More specific goals of this plan include the following:

- Reduce stormwater runoff and erosion;
- Improve water quality
- The rehabilitation and expansion of forested blocks and riparian areas;
- Public education and awareness; and,
- Encouragement of neo-traditional / urban types of development.

The plan goes on to describe various types of projects that will assist in facilitating the aforementioned goals. For plan implementation, both technical administrative components were assessed and a strategy for implementing the

plan which included partnership arrangements and funding alternatives were examined. The estimated cost for the project is \$12.4 million over a period of twenty years.

2005 Natural Areas Inventory of Dauphin County, Pennsylvania - The Pennsylvania Science Office and The Nature Conservancy was commissioned by The Tri-County Regional Planning Commission to prepare this plan. The project was financed in part by PA DCNR and PA DCED. The purpose of this plan was to assess the size, quality, and type of the following natural features in Dauphin County:

- Hydrologic features;
- Geologic features;
- Forested areas;
- Animal species; and,
- Vegetation species.

Demographics, culture, and government policy were assessed to determine the threats associated with the aforementioned natural areas and species. The results of these inventories were provided to every municipality within the Tri-County planning area to aid them with development of their comprehensive plans.

The inventory findings for Lower Paxton Township produced little evidence of extensive natural landscapes due to the Township's current high development density. However, the inventory did find an extensive system of forested areas along the major stream corridors in the Township. These findings reinforced the need for greater preservation of the existing forested riparian areas for the improvement of water quality and plant and animal habitat. The study also called for the preservation of the continuously forested Blue Mountain ridge to protect water quality and to promote a continuous wildlife corridor.

Walnut Street Corridor Redevelopment Study (2006) - This is a study to improve economic development, traffic movement, and aesthetics along the Route 22 corridor and is being conducted as a joint study utilizing capital improvement monies in the Borough of Pennbrook, City of Harrisburg, Susquehanna Township, and Lower Paxton Township. The goal of the plan is to create a unified corridor that focuses on pedestrian and vehicular safety while encouraging sensible commercial redevelopment.

The study area in Lower Paxton Township focuses on reducing the visual clutter, curb cuts, and ensuring efficient transportation along the corridor. Gateway beautification opportunities west of Colonial Road and redevelopment opportunities are examined by this study. Landscape and lighting beautification

2: Inventory & Analysis

are considered a priority for the intersection of Routes 22 and 83 as well as the intersection of Mountain Road and Allentown Boulevard. The report calls for new developments along the corridor to be comprised of mixed uses. Transit oriented developments (T.O.D.) in the form of multi story, mixed use commercial/residential; multi-story, mixed-use commercial/office buildings; and multi-story, parking garages are outlined in the plans. These developments focus on three main locations; Colonial Park Mall, Paxton Towne Centre, and the Mountain Road and Allentown Boulevard area. The plan proposes connecting the corridor with continuous sidewalks and bicycle lanes with the utilization of unit paver crosswalks at intersections to promote safer crossings.

Kittatinny Ridge Conservation Project

The Kittatinny Ridge, or Blue Mountain forms the eastern most edge of the “ridge and valley region” in Pennsylvania, and the northern most border of Lower Paxton Township. This ridge provides a vital habitat for a diverse variety of wildlife, and is recognized as a “globally significant” migration flyway for many species of birds. Traversing 185 miles, the ridge facilitates various types of wildlife movement by serving as a virtually uninterrupted forested corridor through Pennsylvania. In addition to its wildlife benefits, the ridge also serves as a crucial source of drinking water for thousands of residents, and forms the headwaters of many area streams. The serenity and beauty of the ridge draws many hikers, bikers, and sportsmen to the area. To that end, the Audubon Society, along with efforts from state, local, and regional officials have combined to focus public attention on the importance of this mountain. It’s goal is that this focus will help to promote the conservation of the ridge, and its supporting landscapes from further habitat loss, fragmentation, and inappropriate land use. The symbiotic relationship between the ridge and Lower Paxton Township has prompted the Audubon Society to include the entire Township in the designated Kittatinny Ridge conservation corridor. This project suggests that conservation measures be enforced by the ordinances of the townships found in the designated conservation corridor. These conservation measures include; floodplain conservation, natural resource conservation, scenic preservation, historic preservation, and ridgeline protection. More information on this project can be found at <http://pa.audubon.org/kittatinny>.

Review of Lower Paxton Township Zoning Ordinance - The recently adopted Lower Paxton Township Zoning Ordinance provides an above average level of guidance and regulation for increased building density and mixed uses. The following are districts which encourage a more dense type of development pattern:

- Traditional Neighborhood Development (TND) Overlay District (Sec. 314) encourages mixed uses and diverse building types with a size and scale similar to developments predating 1946 are encouraged in this

section. Also, encouraged is a circulation hierarchy that includes pedestrian, vehicular, and automobile circulation.

- Age Restricted Development (Sec. 315) gives incentives for increasing the housing and lot density in this district. If the age restricted development is approved under the provisions of Sec. 315 the applicant may be able to reduce minimum lot area and maximum density by 15%.
- Business Campus District (Sec. 317) is intended to provide a campus like setting for offices and other complementary types of business development. Higher impervious coverage and a 60' maximum height is intended to allow for larger office building types.
- R-C Residential Cluster District (Sec. 320) offers the developer more choices when selecting housing and lot types and sizes. The process for determining the density of the developments is based on the existing Features Map and a Yield Plan that is to be approved by the Township. Ultimately, this allows the Township to determine the density, bulk, and area requirements for a development based on the existing conditions, allowing the standards for developments to change on a case by case basis. Also, included are provisions for lots that are smaller than usually permitted in a residential district, with the intended use of the resulting land balance to be used for common open space. Freedom of lot layout and the encouragement of variety are intended to produce subdivisions that are more economically feasible and environmentally sensitive.
- Village District (Sec. 318.D) emphasizes a central community focus that is pedestrian friendly and contains a variety of commercial and residential uses that are relatively small in scale. This will create a traditional neighborhood development that helps to protect historic structures and adapt existing buildings to new uses. This district will preserve the scale and character of existing village characteristics by encouraging such amenities such as village greens, town squares, and mixed use developments. Safe pedestrian and bicycle routes will be promoted and will help to foster a safe and livable community. Off street parking is encouraged on small parcels and parcels adjacent to alleys. Utilizing diverse architectural features and a variety of building materials is another important component of this district. All streetscape elements and circulation routes are to be designed to a human scale.
- Residential-Retirement Development (Sec. 319) is an overlay district that allows for the incorporation of the mixed uses typically found in assisted living and independent retirement living facilities.

The Lower Paxton Township Zoning Ordinance provides an average level of guidance and regulation for protection of its natural resources. Considering the

2: Inventory & Analysis

current limited state of natural areas as outlined in the County Natural Areas Inventory (CNAI), the Township should analyze the zoning ordinance in further detail with the goal of providing a higher level of protection to its natural resources. Each of the following districts or regulations are clearly defined with performance standards that developers must comply with to encourage more sensitive development in regards to natural resources.

- Open Space Development Overlay District (Sec. 311) allows for site sensitive development that strives to protect areas of environmental sensitivity and important farmland. Flexibility for the use of land is prescribed and is intended to take advantage of unique site conditions of each site while protecting environmentally sensitive areas. Extra precautions are outlined for the reduction of stormwater runoff, sedimentation, and erosion. This ordinance also calls for developments to be situated where they are best suited to the physical characteristics of the land and suggests avoiding steep road and driveway grades to ensure safety and reduce maintenance costs. Acceptable developments within this district include single family detached dwellings, nature preserves, and active or passive recreation that is of a non-commercial use. The minimum tract size for this district is 10 acres and density will be based on review of the Yield Plan and Existing Features Map.
- Steep Slopes (sec. 310.A) provides performance standard protections to all non man-made slopes in excess of fifteen percent (15%).
- Wetlands and Lakes (Sec. 308) this ordinance is intended to protect wetlands that are subject to subdivisions or land developments. Wetlands shall not count towards more than 50% of the lot area. The Township reserves the right to make the applicant prove that the lot contains sufficient buildable area that is outside of wetlands. If deemed necessary the Township can require official wetlands delineation from the applicant. Any new building or “construction” shall be setback 20’ from all wetlands under this provision.
- Preserved Open Space (Sec. 311.E) this ordinance is referenced for most of the district open space regulations. The preserved open space is to be permanently deed-restricted or protected by a conservation easement to prevent the construction of buildings, and to provide for non-commercial passive or active recreation. Maintenance roads and trails are to be provided to the preserved open space and if required, they should be able to accommodate both pedestrian and bicycle use. This open space is to be publicly owned, kept clean of rubbish, and access ways are to be routinely maintained. Any open space over 10 acres requires the completion of a landscape plan and preservation plan prepared by a registered landscape architect. The intent of this plan is to show how mature healthy trees will be protected and to implement

proposed landscaping that will filter views from adjacent housing developments.

- Conservation Along Creeks (Sec. 312.) Setbacks from perennial creeks are outlined in this section. This prohibits any new building, parking area, business or outdoor storage area from being located less than 75 feet from the center of a perennial creek. If vegetation is removed within the setback as a part of a development then replacement trees and shrubs are required to be planted.
- Conservation District (Sec. 301.D.1) This district outlines regulations that promote low intensity development in areas that contain important natural features such as wetlands, creeks, flood plains, steep slopes, and Blue Mountain. Density of developments can vary based upon the natural features of the site. Flexibility of layout for conservation oriented developments is encouraged in this section. Protection of habitats along creeks and enhanced ground water recharge is promoted under this district.
- Floodplain District (Sec.504) This is an overlay district that includes areas of floodplains as identified by FEMA to be subject to periodic inundation of floodwaters. The purpose of this district is to limit the building of structures in areas prone to flooding, protect water quality, promote safe drainage, and to prevent materials from being swept away and damaging properties located downstream.
- Landscaping (Sec. 804) This section provides general requirements for planted buffers, street trees, stormwater, and parking lot landscaping. The following potential issues were found in this section:
 1. Sec. 804.C.4 allows shade trees that are required in the buffer yard to be utilized towards meeting the street tree requirements. This statement should be rewritten to state that the shade trees required in the buffer yard can be utilized towards meeting the street tree requirements providing that the buffer is adjacent to a street.
 2. A note should be added to this section which requires all plantings to be in accordance with the latest version of American Standard for Nursery Stock.
 3. A note should be added to this section which requires that all landscape plans be prepared by a registered landscape architect.

Through discussions with Lower Paxton Township Zoning and Planning officials, it was discovered that due to the relatively steep topography in the Township, some developers have been forfeiting the pedestrian circulation aspects (mainly trails) because of the difficulty of achieving the minimum slope requirements of 4.99%.

2: Inventory & Analysis

Zoning Ordinance Summary Analysis

This section does not provide enough protection for wetlands considering the current density of the township. Wetlands are important natural features that capture stormwater runoff, promote groundwater recharge, and provide an important habitat for native species of plants and animals. It would be advantageous of the Township to require a greater building setback around wetlands. Also, the incorporation of bioswales and riparian plantings should be required around the wetlands to capture stormwater runoff before it enters the wetlands. Permeable paving options should also be outlined to reduce runoff in areas adjacent to wetlands. It was noted that the 'Wetlands and Lakes' section does not include any mention of lakes other than in the title. It is unclear whether or not this section applies to lakes.

It is recommended that an amendment be made to the pedestrian circulation requirements for recreational trails that states that not all trails will have to be 100% handicap accessible. Existing site conditions may dictate that achieving 100% accessibility will be either cost prohibitive or next to impossible. Providing proper signage to indicate that a particular segment of the trail system is not accessible is an acceptable alternative solution to discarding all trail plans because a singular trail segment within the system cannot achieve 100% accessibility.

Natural Resources “Green Infrastructure”

Please refer to the exhibits found at the end of this chapter and corresponding to each of the following descriptions:

Hydrology & Natural Areas

This exhibit depicts the Township streams, floodplains, wetlands, watershed boundaries, and forest cover. Generally, the streams in the southeast portion of the Township flow in the direction of south-southeast. The majority of the streams in the western area of the township typically flow to the southwest. Flood plain information was obtained using 1996 FEMA flood data, and is normally found surrounding streams and wetlands. Wetlands are typically found near the streams and floodplains, and near the headwaters of minor tributaries. Three minor watersheds are located in the Township that are part of the greater Susquehanna River major watershed. The northwest portion of the Township is located in the Paxton Creek minor watershed and generally drains to the southwest. The east portion of the Township is a part of the Beaver Creek minor watershed typically draining to the east. The Spring Creek West minor watershed encompasses the southwest corner of the Township. Forested areas are generally located along the major stream corridors and on the slopes of Blue Mountain along the Township's north border. The south facing portion of Blue Mountain is listed by Dauphin County CNAI as a

supporting landscape that provides a continuous forested ridge along Blue Mountain which serves as a wildlife corridor and protects the water quality of the headwater streams flowing into the valley below.

Topography and Soils

This exhibit illustrates the hydric soils and 15%-25% slopes found within the Township. Typically, these hydric soils are located in the flood plains, along streams, and in wetlands. The steep slopes are found in the stream valleys and in the north portion of the Township along the hills leading up to and including Blue Mountain.

Manmade Resources – “Gray Infrastructure”

Please refer to the exhibits found at the end of this chapter corresponding to each of the following descriptions:

Utilities

Utilities depicted in this exhibit include sewer, water, overhead power lines, and utility owned lands. Most of the Township is serviced by public water and sewer utilities. A majority of the stream valleys contain sewer lines or easements for sewer lines. There are two major overhead power lines that pass through the Township - one in the north, and one in the south.

Land Use

Illustrated in this exhibit are the current land use patterns for the Township including the following categories: commercial, high density residential, low density residential, estate type residential, recreational, utilities, industrial, institutional, farmland, and vacant land uses. Commercial use corridors can be found along the entire length of Jonestown Road, the south west corner of the Township at the intersection of Union Deposit and I-83, both I-81 interchanges, Linglestown Road, and portions of Mountain Road. Industrial uses are found in the southwest corner of the Township, along the northern township boundary (logging), both I-81 interchanges, and dispersed along the Jonestown Road corridor. Agricultural and vacant land is situated in the north portion, along the east boundary, and the south area of the Township. All of the above mentioned areas are surrounded by residential uses that are inter-dispersed with recreational and institutional uses.

Traffic and New Developments

Traffic data was supplied by PennDOT 2005 Traffic Survey and traffic data from the Lower Paxton Township year 2000 Comprehensive Plan. Traffic volume is heaviest along the west central portion of the Township along the Route 22 and Route 81 corridors. Other roads with great volume include: the western portions of Linglestown and Union Deposit Roads, Mountain Road, Lockwillow Avenue, and Colonial Road. Other roads with significant volume are typically

2: Inventory & Analysis

found in the south west area of the Township and include: Nyes Road, Rutherford Road, Locust Lane, Arlington Avenue, Londonderry Road, Dartmouth Street, Prince Street, Newside Road, Crums Mill Road, Elmerton Avenue, Old Jonestown Road, and Balthaser Street. Capitol Area Transit (CAT) park and ride areas can be found at Union Deposit Road and I-83, along Jonestown Road, and near the intersection of Mountain Road and Lockwillow Avenue.

Newly proposed or recently completed residential land developments can be found primarily in the southeast, central, and northwest portions of the Township. These new developments will ultimately increase the current traffic volume once these developments are populated.

Greenway Destinations

Illustrated in this exhibit are important community assets such as schools, parks, historic, and cultural resources identified as important destination points within a township-wide greenway system. Also noted in this exhibit are existing natural area preservation areas and agricultural security areas. The parks and schools are dispersed throughout the township, while most of the cultural resources can be found along the Route 22 corridor. There is one sizeable agricultural security area located in the north central portion of the township. Lands along the east portion of the Township's north border have been acquired by PA DCNR and the Central Pennsylvania Conservancy for the protection of the Darlington Trail and Blue Mountain. There are three (3) historic markers located in the Township to memorialize the sites of Barnett's Fort, Patton's Fort, and the Paxton Riflemen. The exact location of these sites are unknown, and no visible historic structures remain.

Key Issues, Opportunities, and Constraints

Environmental

Existing open space parcels within the Township are few in number and under constant threat from new developments. Efforts should be made to preserve existing wooded areas in the Township as a means to reduce the risk of erosion and promote continuous wildlife corridors. One way to preserve these areas is by incorporating higher natural resource protection standards into the Township Zoning Ordinance as previously mentioned in this chapter in the review of the Township's Zoning Ordinance. The Township can also solicit efforts from non-profit groups to reforest existing woodlands that are in a declining state, or riparian areas that have been subject to deforestation from erosion or human impacts. The Township should conduct a study to determine which areas have the highest priority for these efforts.

Because of the high impervious cover in the Township, severe erosion, poor water quality, and stormwater runoff are threats that will continue to multiply in

the face of future development pressures. As less developable land becomes available, wetlands could be seen as possible development sites. Because wetlands are relatively rare in south-central Pennsylvania, they become essential refuges for many native and migratory animals. Wetlands play an important role in recharging groundwater and controlling stormwater runoff. Efforts should be made to preserve existing wetlands wherever possible by strengthening existing ordinances

Existing Township zoning and subdivision & land development ordinances provide limited protection for woodlands, wetlands and stream corridors, and will require additional protective measures to preserve these sensitive natural features.

Greenway / Trail Potential

The opportunity exists to establish regional connections to the Horseshoe Trail, Swatara Creek Greenway, West Hanover Twp. Trail System, and the Capital Area Greenbelt;

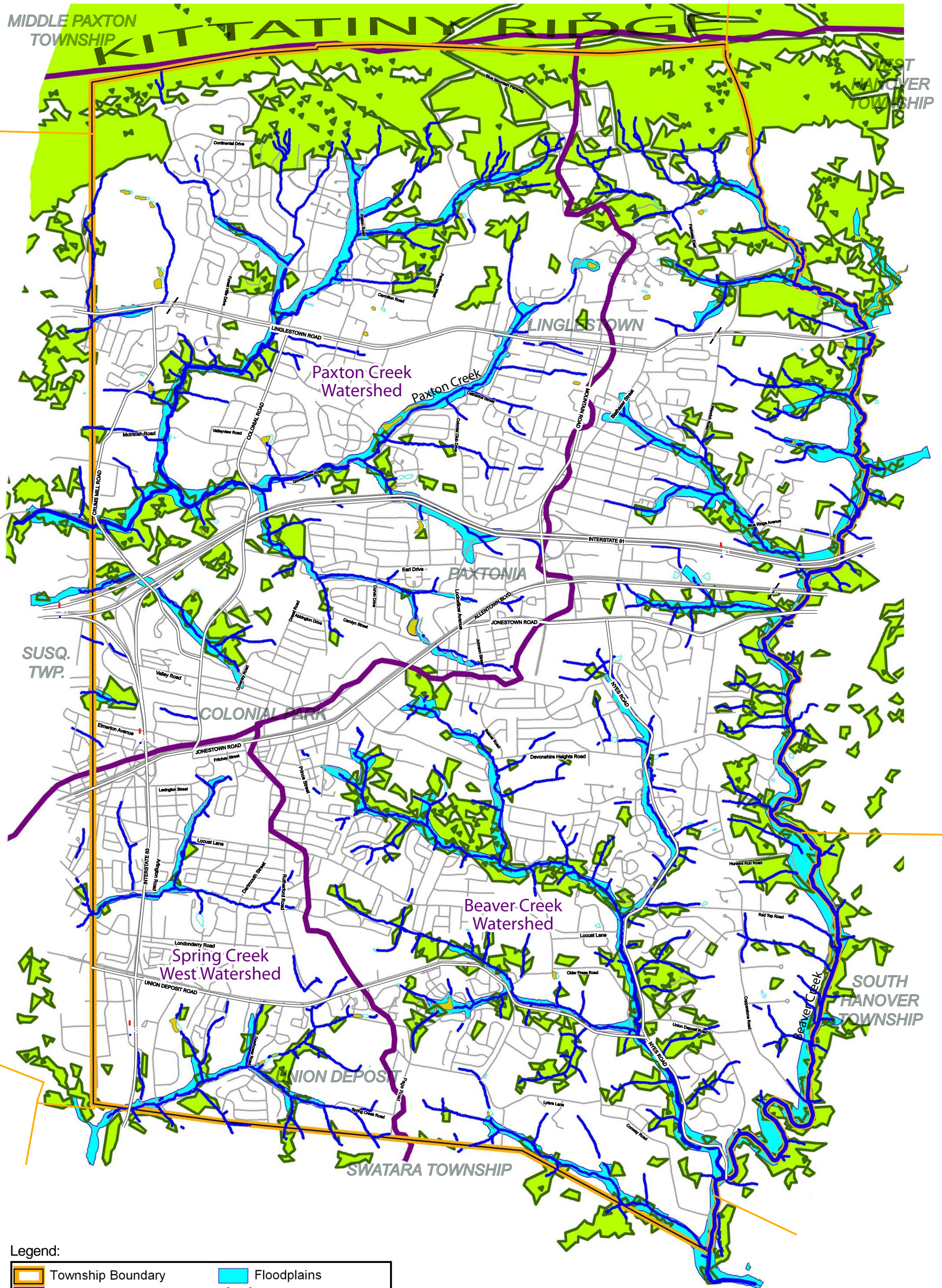
New residential land developments offer the most significant opportunity for the construction of pedestrian facilities and off-road trails.

Existing roadway shoulders and new roadway or sewer construction projects offer the best opportunity for on-road bike route development and walkway improvements within existing roadway rights-of-way.

“Protective” Greenways have the potential to preserve long corridors of natural land or sensitive natural features and can serve as a placeholder for future trail plans.

2: Inventory & Analysis

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Legend:

Township Boundary	Floodplains
Watershed Boundary	Streams
Wetlands	Forests / Woodlands

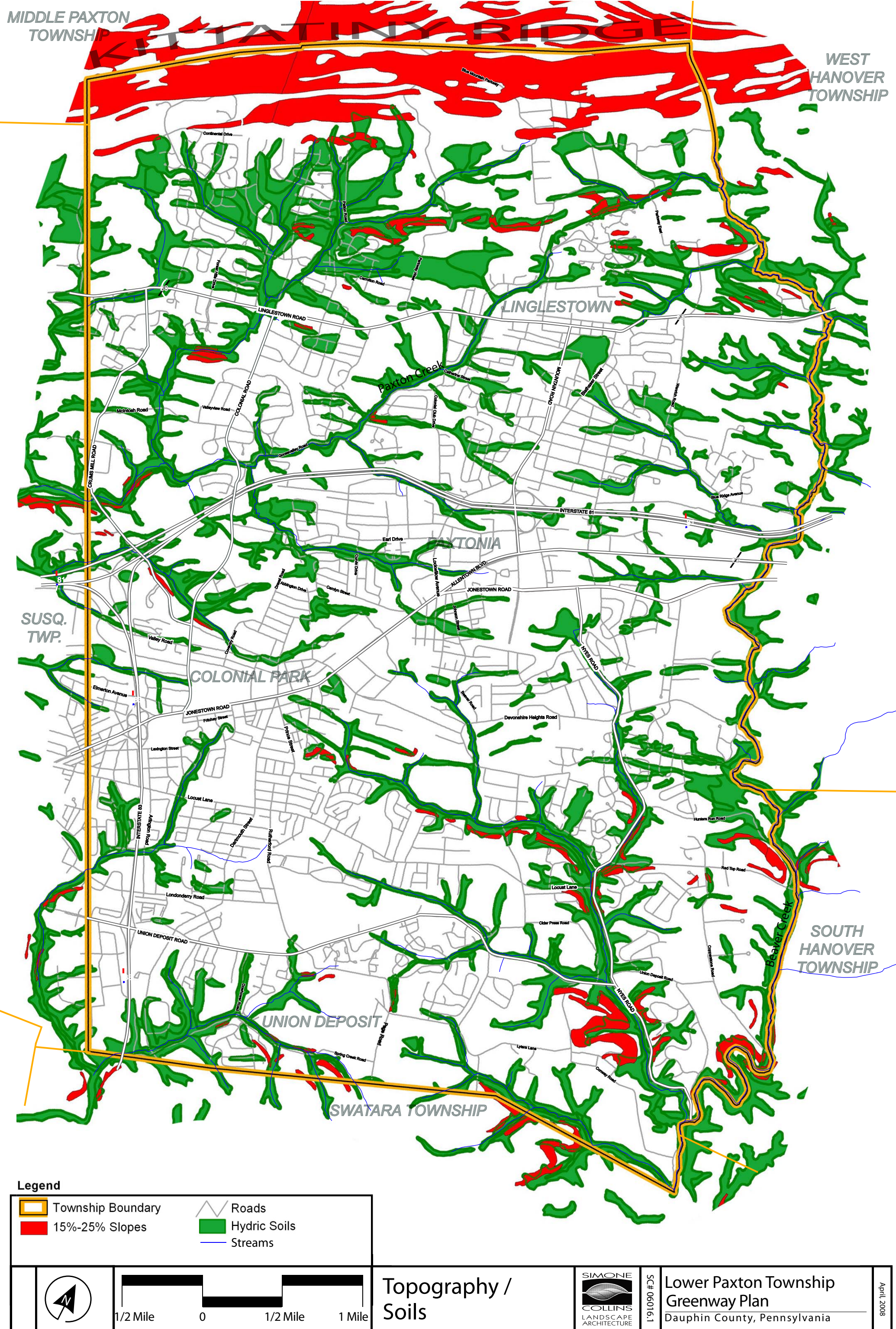
Hydrology / Natural Areas

SC# 06016:1

Lower Paxton Township Greenway Plan

Dauphin County, Pennsylvania

April, 2008



Legend

Township Boundary	Roads
15%-25% Slopes	Hydric Soils
	Streams

Topography / Soils

SC# 06016:1

Lower Paxton Township
Greenway Plan
Dauphin County, Pennsylvania

April, 2008

MIDDLE PAXTON
TOWNSHIP

WEST
HANOVER
TOWNSHIP

SUSQ.
TWP.

SOUTH
HANOVER
TOWNSHIP

SWATARA TOWNSHIP

Legend

- 

Township Boundary
- 

Public Water Service
- 

Sewer Lines
- 

Overhead Power Lines
- 

Roads
- 

Utility Owned Land



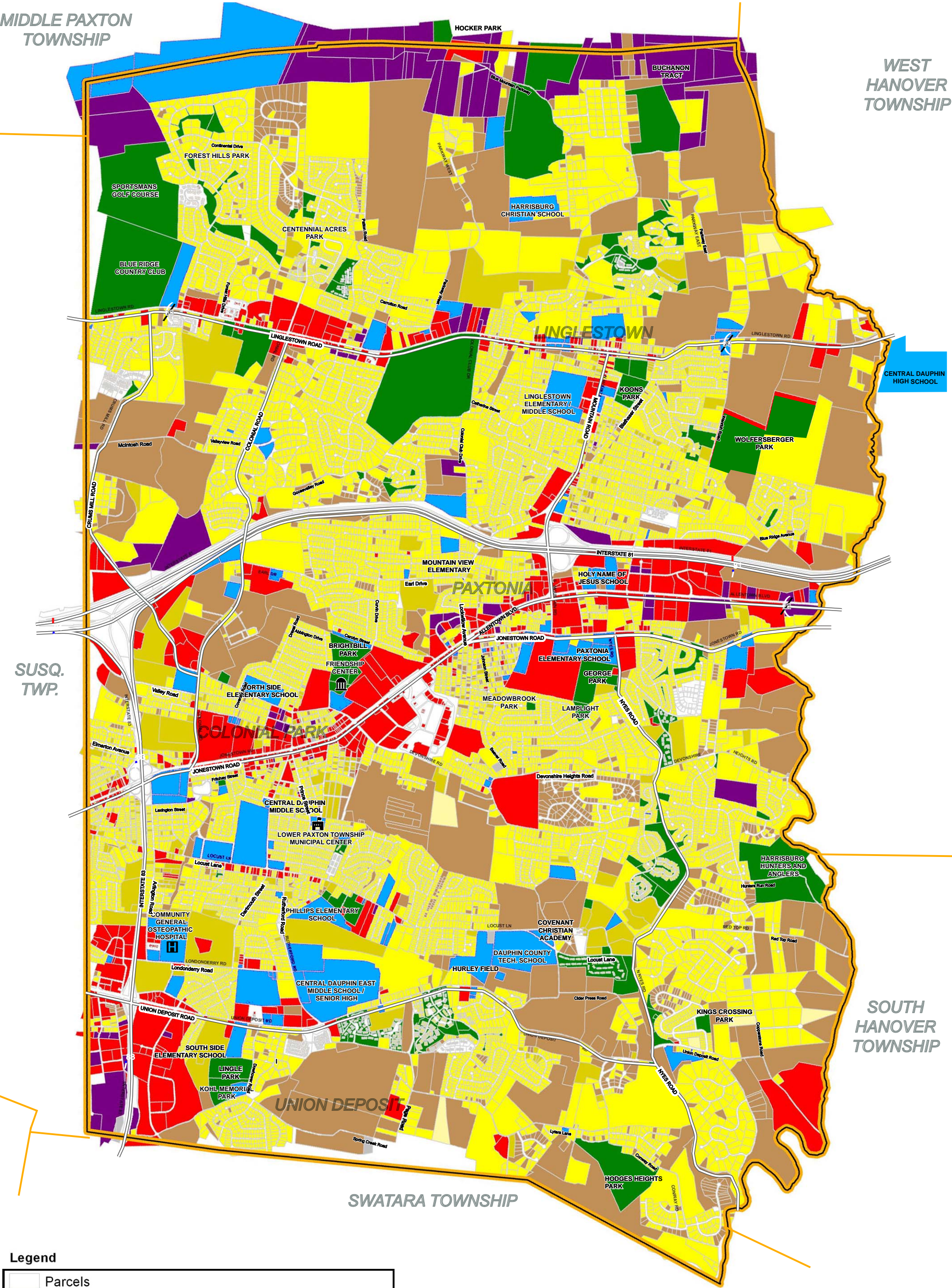
Utilities

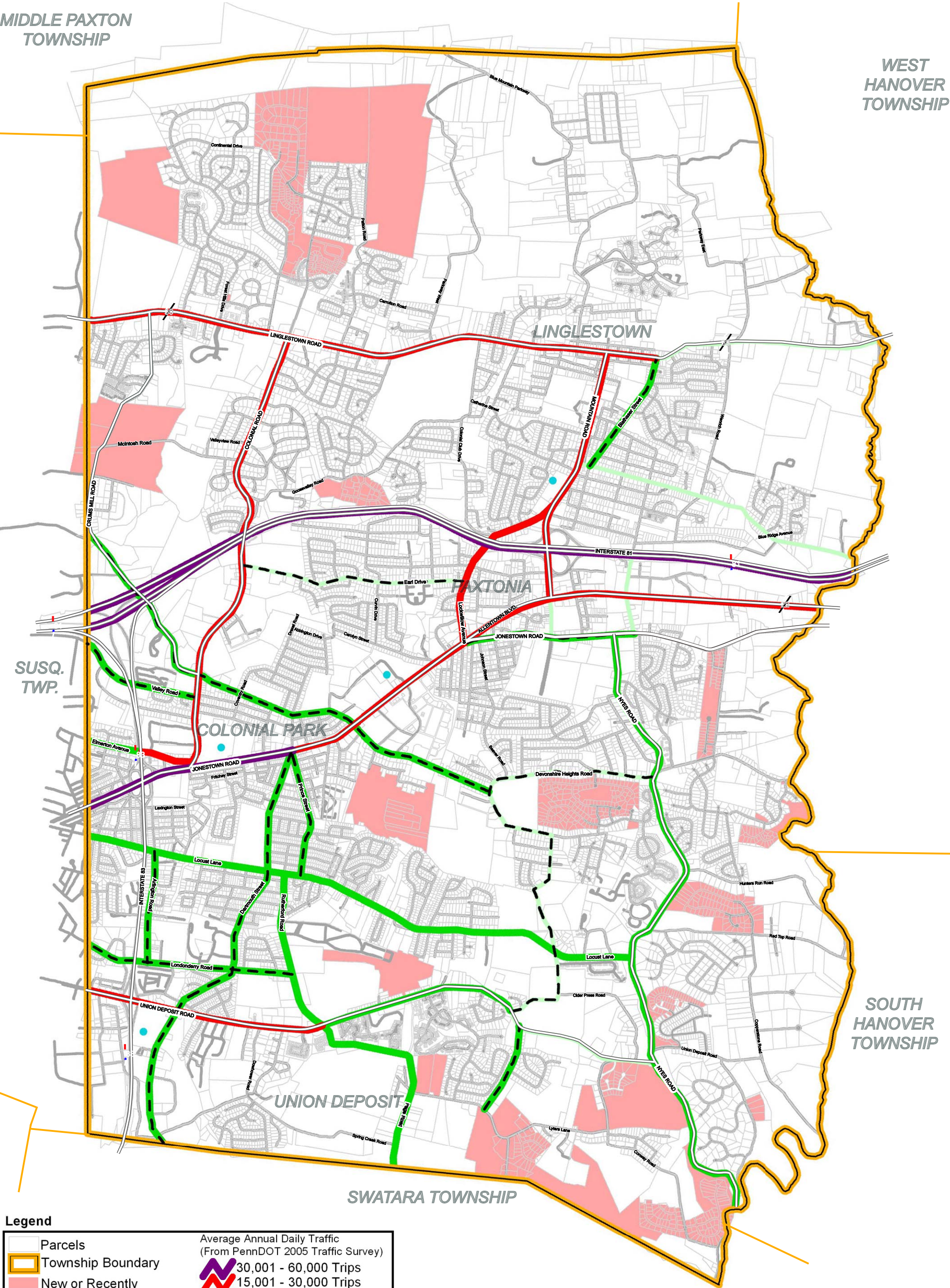


SC# 06016.1

Lower Paxton Township
Greenway Plan
Dauphin County, Pennsylvania

April, 2008





Parcels

Township Boundary

New or Recently Completed Developments

Traffic Data From L.P.T. 2000 Comprehensive Plan

C.A.T. Park and Ride

Average Annual Daily Traffic (From PennDOT 2005 Traffic Survey)

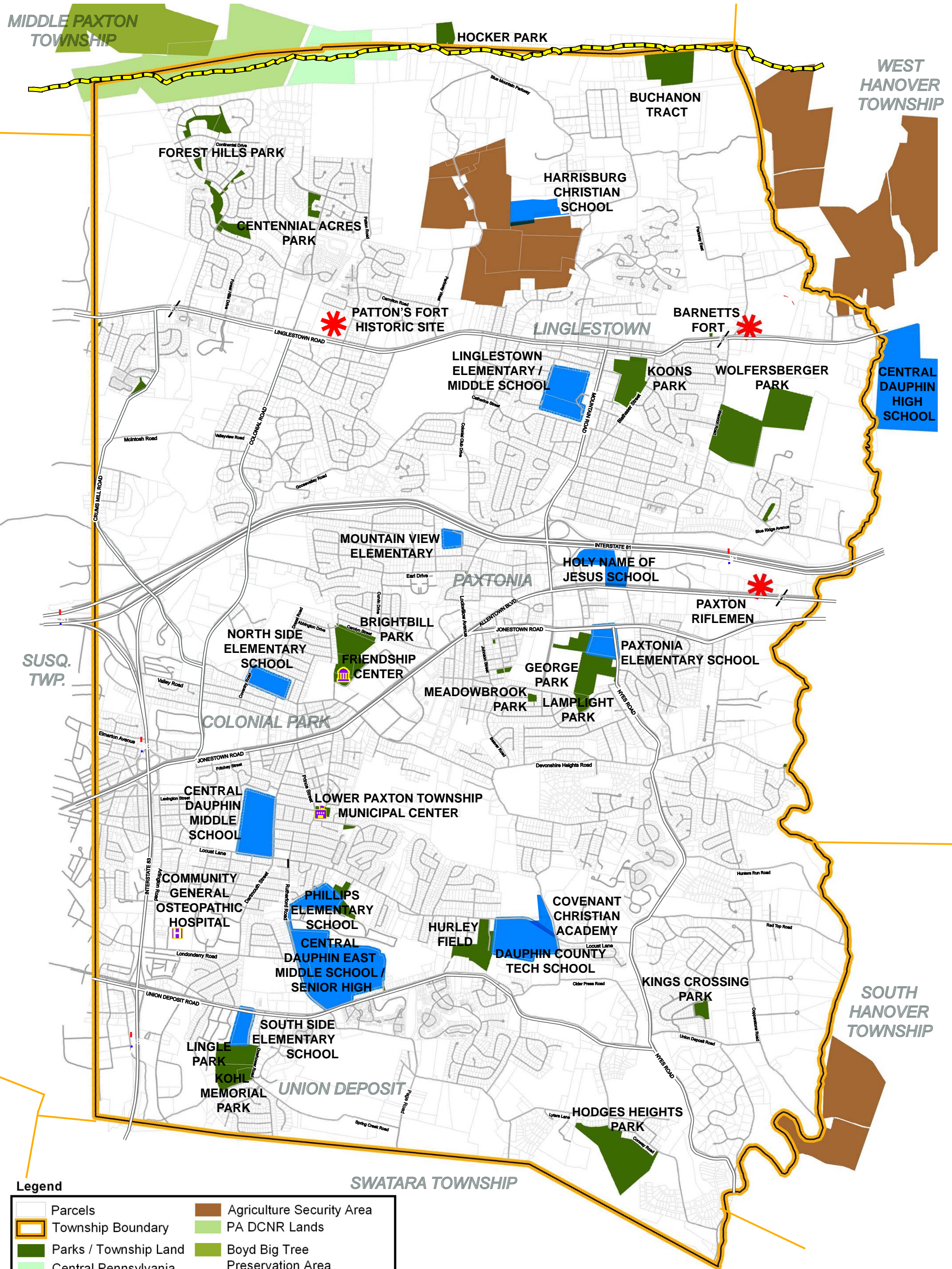
30,001 - 60,000 Trips

15,001 - 30,000 Trips

5,001 - 15,000 Trips

2,001 - 5,000 Trips

Roads (No Data Available)



	Parcels		Agriculture Security Area
	Township Boundary		PA DCNR Lands
	Parks / Township Land		Boyd Big Tree Preservation Area
	Central Pennsylvania Conservancy Lands		Historic Markers
	Darlington Trail		School Facilities

1/2 Mile 0 1/2 Mile 1 Mile

MIDDLE PAXTON
TOWNSHIP

WEST
HANOVER
TOWNSHIP

SUSQUEHANNA
TOWNSHIP

SOUTH
HANOVER
TOWNSHIP

SWATARA TOWNSHIP

Legend

Parks/Open Space

Township Owned Land

Educational Facilities

Utility Owned Land

High Tension Overhead Utility

New Developments

Underpass / Overpass

Floodplains



LOWER PAXTON TOWNSHIP GREENWAY PLAN

SIMONE COLLINS - LANDSCAPE ARCHITECTURE - SC# 06016.1

EXISTING CONDITIONS PLAN

APRIL, 2008

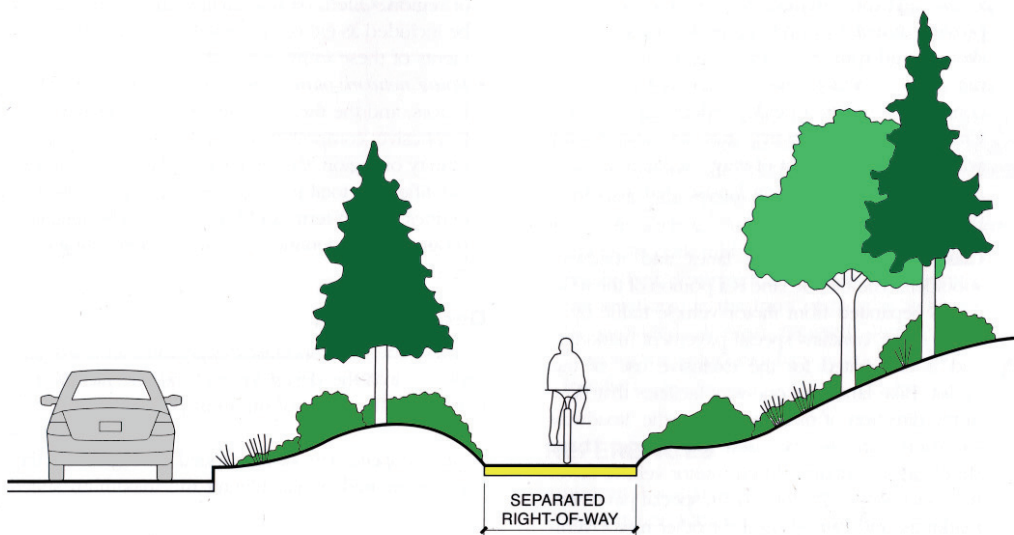


Chapter Three: Greenway Plan

Trail Types – Descriptions

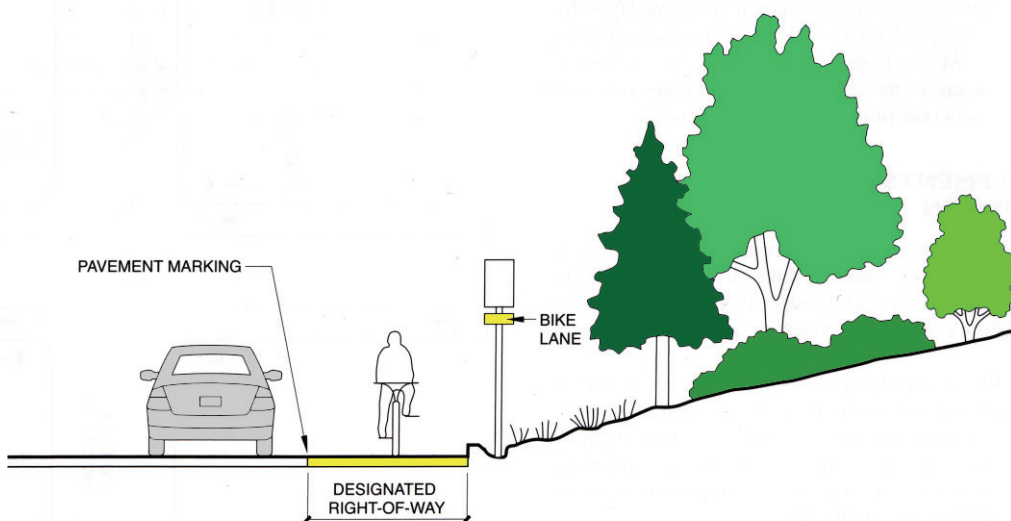
Bikeway Classifications

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



BICYCLE PATH (CLASS I)

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



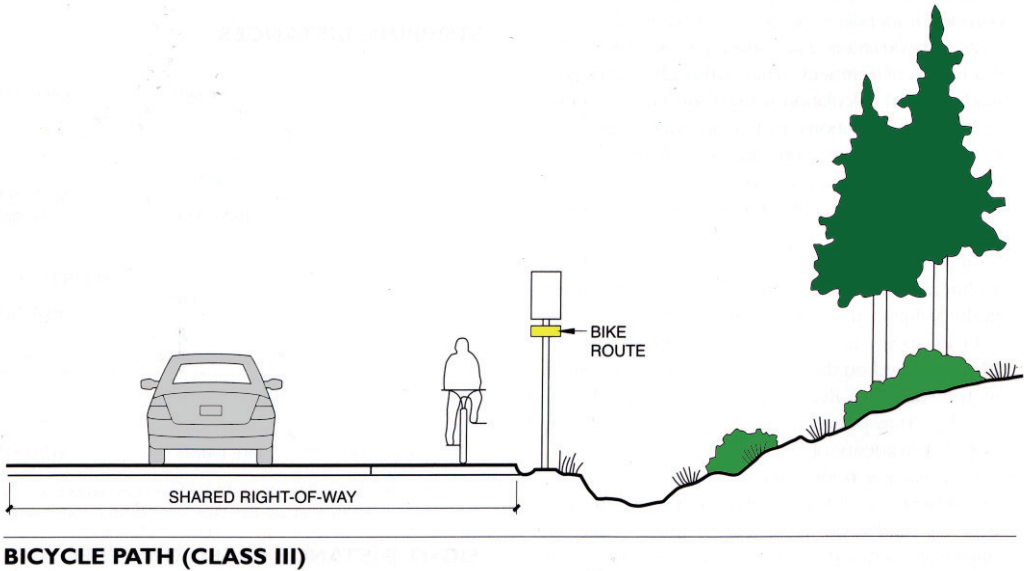
BICYCLE PATH (CLASS II)

Class 2 Bikeways are designated bicycle lanes within a roadway for exclusive use of the cyclist and contains special pavement markings and signage. Bike lanes are one-way in the direction of motor vehicle traffic. The common standard width for a bike lane is five (5) feet.

3: Greenway Plan

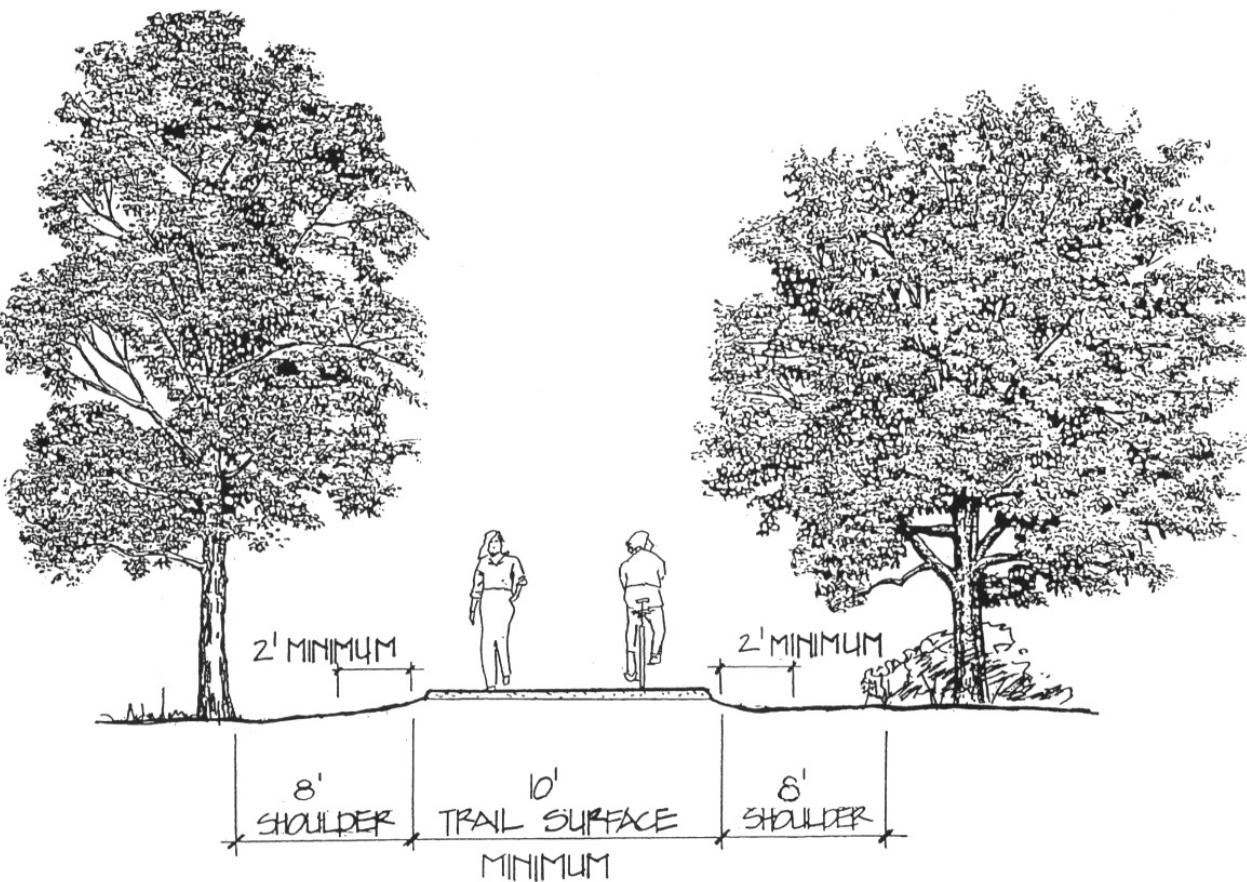
Class 3 Bikeways

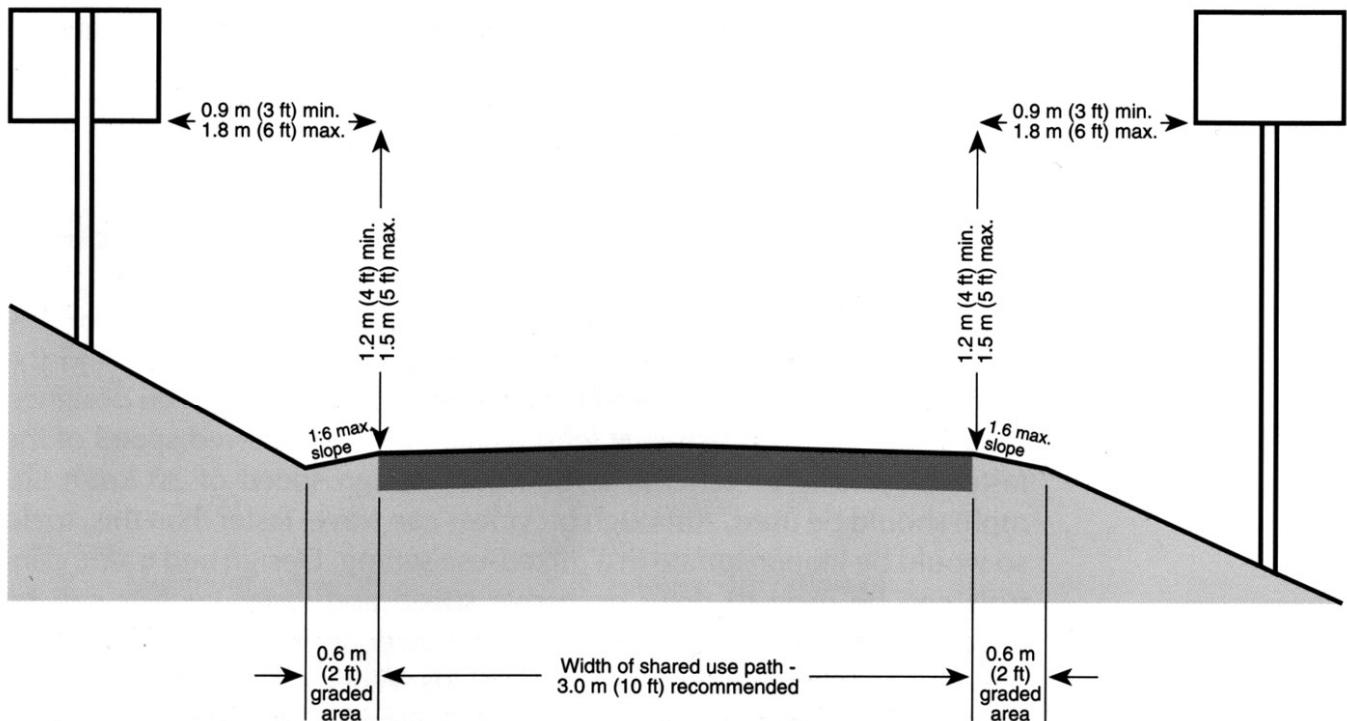
are also known as 'Bike Routes'. These offer no special accommodations for the cyclist within the road right-of-way. Signs are used to define the route and the cyclist shares the roadway with vehicular traffic.



(Source: AASHTO - *Guide For Development of Bicycle Facilities*)

Multi-Use Trail (Off-Road)





Cross Section of Two-Way Shared Use Path on Separated Right-of-Way

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

The American Association of State Highway and Transportation Officials (AASHTO) defines a Multi-Use Trail or Shared Use Path as: *a bikeway physically separated from motorized vehicular traffic by an open space or barrier and either within the highway right-of-way or within an independent right-of-way. Shared use paths may also be used by pedestrians, skaters, wheelchair users, joggers, and other non-motorized users.*

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

Both the Rails-to-Trails Conservancy (RTC) and AASHTO recommend a multi-use trail to be ten feet (10') wide, with the minimum width for a two-way trail at eight feet (8'), and for a one-way trail at five feet (5'). Depending on the user

3: Greenway Plan

volume, widths of twelve feet (12') or fourteen feet (14') are recommended to avoid potential conflicts. An additional two-foot (2') shoulder is recommended on either side of the trail surface to provide clearance from trees, poles, walls, fences or any other lateral obstruction. Site conditions may warrant additional safety measures such as fencing and increased shoulder widths.

Hiking Trails

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



Hiking Trail example.

Trail Surface Types

Asphalt or macadam surfaces provide for the widest variety of trail users including bicyclist, walkers, joggers, wheelchair users, and in-line skaters. Initial installation costs are relatively high compared to other trail surface types. However, long term maintenance costs will remain lower than others if properly installed and maintained.

Crushed limestone surfaces can accommodate all trail user types with the exception of in-line skaters. Initial installation costs for this trail surface are relatively low, however long term maintenance costs increase due this surface's higher susceptibility to erosion, especially if not properly installed with swales and cross drains. A crushed limestone surface can also serve as base material for an asphalt surface if trail use increases or funds become available for a surfacing upgrade.

Compact earth surfaces are the least expensive to install, however they limit the types and number of trail users. Compact earthen surfaces are primarily used for hiking only or horse trails adjacent to multi-use trails that receive significantly less trail user volume. Hiking trails may be considered as an

alternate means to reach the more environmentally sensitive areas found within the floodplain area to provide routes to the river for environmental education, bird watching, or fishing access.

Trails and many other recreational facilities are commonly developed within floodplains to take advantage of the relatively flat land. These trails may require additional maintenance to remove debris deposited by a flood event. If a trail is placed where flood waters will have a significant erosion effect, asphalt surfaces are recommended. Trails should not be located within a river's *floodway*, which is where the most significant flood damage occurs.

Sources:

- *Guide For Development of Bicycle Facilities*, American Association of State Highway and Transportation Officials (AASHTO), 1999;
- *Trails for the Twenty-First Century: Planning, Design, and Management Manual for Multi-Use Trails*, Rails to Trails Conservancy (RTC), 1993.
- *Statewide Bicycle & Pedestrian Master Plan, Bicycling & Walking in Pennsylvania – A Contract for the 21st Century: Bicycle Guidelines*, Commonwealth of Pennsylvania Department of Transportation

Bicyclist Types



Advanced bicyclist.

The American Association of State Highway and Transportation Officials (AASHTO), and the Pennsylvania Department of Transportation (PennDOT) both classify bicyclists into one of the following three groups:

Group A – Advanced Bicyclists – These riders generally use their bicycles as they would a motor vehicle. They are riding for transportation, convenience, and speed and want direct access to destinations with a minimum of detour or delay. They are typically comfortable riding with vehicular traffic. They prefer a sufficient operating space on the travel way or shoulder to eliminate the need for either themselves or a passing motor vehicle to shift position.

Group B – Basic Bicyclists – Less confident adult riders may also be using their bicycles for transportation purposes, e.g., to get to the store or to visit friends, but prefer to avoid roads with fast and busy motor vehicle traffic unless there is ample roadway width to allow easy overtaking by faster motor vehicles. Thus, basic riders are comfortable riding on neighborhood streets and shared use paths and prefer designated facilities such as bike lanes or wide shoulder lanes on busier streets.

3: Greenway Plan

Group C – Child Cyclists – Riding on their own or with their parents, child cyclists may not travel as fast as their adult counterparts but still require access to key destinations in their community, such as schools, convenience stores and recreational facilities. Residential streets with low motor vehicle speeds, linked with shared use paths and busier streets with well-defined pavement markings between bicycles and motor vehicles, can accommodate children without encouraging them to ride in the travel lane of major arterials.

It is estimated that only 5% of bicyclists overall would qualify as Group A or Advanced Bicyclists, therefore 95% fall into either Group B or C.

(Source: AASHTO - *Guide For Development of Bicycle Facilities*)

Preliminary Trail Alternatives

The first step in the analysis and development of a Greenway trail plan is to inventory all possible alignment alternatives. The majority of alignment alternatives were identified in the Township Comprehensive Plan. These proposed alignments included both on-road and off-road connections. Additional proposed alignments for study were suggested by the project committee and the public. Other alignments were added as part of the base mapping analysis and site reconnaissance performed by the consultant.

The initial alignment alternatives were compared to the information found within the GIS database, including parcel ownership and detailed aerial photography. This detail of base information was not available when the previous plans were developed, and allowed for a more site-specific approach to determining the actual effects each proposed alignment might have on its surroundings. The following section provides a description of the general criteria considered to analyze the initial alignments.

Alignment Selection Criteria

The following criteria were used to determine whether or not a proposed alignment could or should be included in a Township-wide trails system.



Child cyclist.



Neighborhood with existing sidewalks.

Safety

All of the recommended alternatives studied are considered to have the potential to safely be included in the proposed system. Each of the on-road routes were cross referenced to existing traffic volumes and field verified for the actual roadway conditions. Some off-road connections were not field verified due to the inability for the consultant to investigate conditions on private property. These alignments should be checked at a later time for safety with respect to slopes and other miscellaneous conditions that would deem an alignment unsafe. This evaluation should be done by the Township where potential alignments can be investigated with permission of the private landowner.

Connectivity / Continuity / Level of Service

Each of the recommended alignments need to be capable of being part of a larger system and/or provide a level of service worthy of its development. An individual trail segment that does not provide a connection between destination points or does not plug into a larger system is not recommended.

Existing Sidewalks

Many of the Township neighborhoods have existing sidewalk systems. These neighborhoods were inventoried and identified on the trail mapping. This inventory of existing sidewalks was used to determine if a proposed pedestrian alignment was necessary or if it would simply be duplicating an existing facility.

Private Property Impacts

Parcel boundaries and ownership information within the GIS database provide a level of information that was not readily available in previous planning efforts. By reviewing the property ownership along any potential off-road alignment, the approximate number of potential impacts can be identified, assessed, and calculated to determine whether or not an alignment should be pursued.

Environmental Impacts

Trail alignments that have the potential for significant environmental impacts such as clearing of wooded areas, requiring significant grading, or disturb wetlands and/or any other sensitive ecosystems should be generally avoided.

Constructability / Cost

Engineering can provide solutions to almost anything; however the costs associated with providing an engineering solution may be unreasonable or cost prohibitive. Alignments that require significant engineering efforts and abnormal construction costs should be generally avoided - unless it is the only solution possible for a critical trail linkage.

3: Greenway Plan

Proposed Greenway Connections

Through the existing conditions analysis, the public participation process, and discussions with the Study Committee, it became apparent that the Township needs to take advantage of the possibilities associated with new land developments and roadway improvements to provide the bicycle and pedestrian connections that are lacking between many of the destinations described herein and the Township's residential communities.

Many of the Township's newer communities have existing sidewalks, while some of the older ones do not. Some roads have adequate width to allow for bike lanes or bike routes, and others do not. This plan proposes to fill those missing links between communities and destinations by recommending the following improvements.

The "Neighborhood" improvements will establish a network for connectivity at the community level within a ½ mile walking radius of destinations, while the "Township" development of trails and/or bike routes will connect the Township to other systems on the regional level. In combination, these proposed improvements will serve the immediate needs for the majority of Township residents looking for safe recreational and transportation alternatives to local destinations and then provide future connections to other systems located outside Township boundaries.

Each of the following improvements is represented on the mapping in both the Township-wide exhibit found at the end of this chapter and in more detail within the Implementation Area exhibits found in Chapter 4: Implementation.

Neighborhood - Off-Road

These off-road alternatives are intended to provide safe local connections outside of the road rights-of-way between neighborhoods and destinations. These connections are relatively short in length and proposed to be located within publicly-owned land or rights-of-way or within new land developments. Some of these segments may already exist on an informal basis, or begin within Township-owned lands as hiking trails. If the demand and physical conditions warrant, these connections should be developed as full Multi-Use Trails or Class 1 Bikeways.

Each of these proposed segments was estimated for costs as a Multi-Use Trail option. Construction requirements for these sections include site preparation & vegetation clearing, earthwork & drainage improvements, and a compacted limestone dust surface – at an estimated cost of \$40 per linear foot. Asphalt surfacing would incur an additional \$10 per linear foot.

Neighborhood - On-Road

These proposed connections will provide for both pedestrian and bicycle facilities within existing public rights-of-way and be geared for the Group B and

C cyclist community that comprises the majority of Township residents. The on-road bicycle facility should be developed as a Class 2 Bikeway that includes designated bike lanes where the existing right-of-way width will permit. Developing these routes as Class 3 Bikeways - or Bike Routes would be the next best option if dictated by the right-of-way space requirements.

Construction requirements for the on-road improvements will include shoulder improvements and additional paving where necessary, lane striping & signage, and bicycle-safe grates. The estimated cost for these improvements averages \$15 per linear foot.

The pedestrian component to these proposed routes is a five foot (5') wide sidewalk to be located within the public right-of-way. The walkway is proposed to be constructed of concrete and is estimated to cost \$35 per linear foot.

Walkways

These proposed walkways will provide the necessary pedestrian linkages between neighborhoods and their destinations and be located within the public rights-of-way. The walkway is proposed to be constructed of concrete and is estimated to cost \$35 per linear foot.

Township - Off-Road

These long term connections are proposed to provide a safe off-road recreational and transportation alternative on a Township-wide level and eventually extend to and connect with regional bicycle and pedestrian facilities located outside of Township boundaries. Some of the proposed routes will only provide localized connections, but are designated as "Township" improvements because they are not immediate priorities to provide necessary connections within the ½ mile walking radius of destinations. Township improvements will eventually interconnect the priority areas into a larger continuous system capable of establishing regional connections.

Construction requirements for these sections include site preparation & vegetation clearing, earthwork & drainage improvements, and a compacted limestone dust surface – at an estimated cost of \$40 per linear foot. Asphalt surfacing would incur an additional \$10 per linear foot.

Township - On-Road (Cyclist Routes)

The final phase of the bicycle and pedestrian improvements is geared towards the Group A or advanced bicyclists within the community. The roadways suggested for this network have the existing right-of-way available to provide for a comfortable riding experience for the advanced cyclist and would require only minimal improvements in most cases. Due to the traffic volumes associated with many of these roads, it is not envisioned that the Group B or C cyclists will feel comfortable on these routes even with the proposed improvements. Some of the roadways, Nyes Road for example, will require significant roadway improvements to provide a safe space for the Group A

3: Greenway Plan

cyclists. The Township will need to ensure that provisions for these routes be included in the roadway improvement design process.

Construction requirements for the Township cyclist routes are minimal, and include striping, signage, and bike safe grates at an estimated cost of \$3 per linear foot.

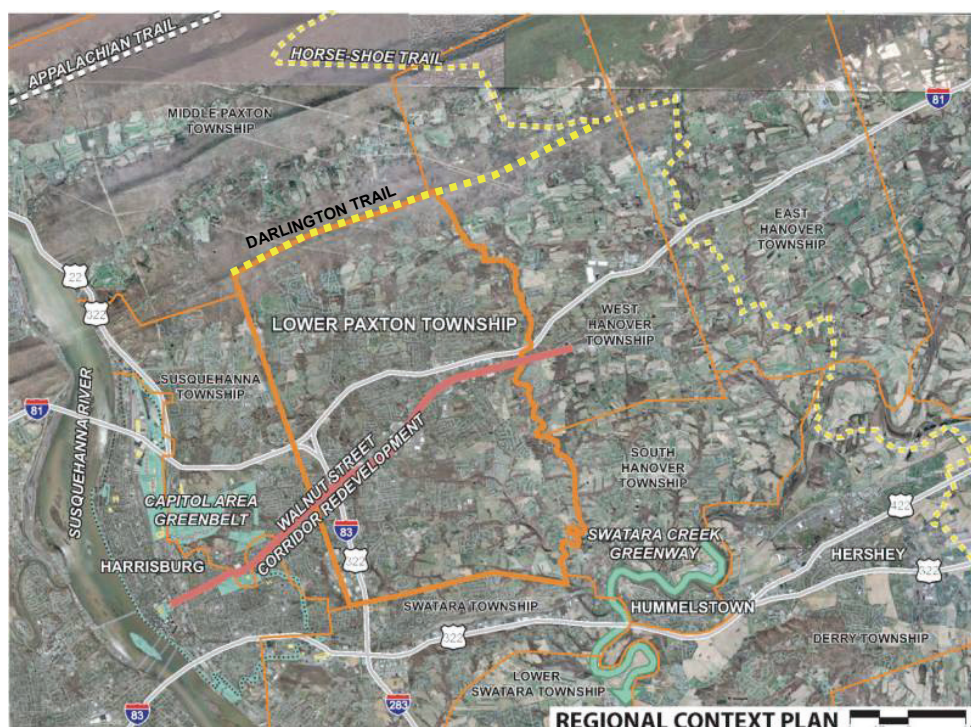
Intersection Improvements

Intersections requiring improvements for the safe passage of bicyclists and/or pedestrians were identified through site reconnaissance, by the study committee, and through the public participation process. There may be additional intersections not identified in this plan that will require improvements and be identified during the design development process. Each of those intersections are identified in the mapping found at the end of this chapter and in the Implementation Area exhibits found in Chapter 4: Implementation.

Construction requirements for these intersection improvements may include crosswalk striping, pedestrian signalization, and/or additional signage. Because the existing conditions vary widely among these intersections, costs associated with these improvements are generally estimated at \$10,000 per intersection. Additional information relative to safe pedestrian and bicycle improvements at intersections can be found at the 'Safe Routes to School Guide' website: <http://www.saferoutesinfo.org/guide/index.cfm>

Regional Connections

There are many existing and planned bicycle and pedestrian facilities located within relatively short distances outside of the Township boundaries. These connections include the Swatara Creek Greenway via the Nyes Road corridor, the Capital Area Greenbelt via the proposed Walnut Street Corridor improvements, and the Darlington and Horseshoe Trails via the proposed routes to the top of Blue Mountain.



Legal Feasibility

Impacted Properties

This plan recommends the use of public and utility-owned land and/or rights-of-way and avoids trail alignments that would impact privately owned land wherever possible. However, where friendly agreements can be reached, some alignments will require the acquisition of right-of-way through either fee simple purchase, easement if possible, or by donation from a private landowner. While there are some potential short term off-road trail connection alignments identified in the mapping that affect privately-owned land, the majority of the possible private property impacts can be found within the potential long term off-road connection alignments. Some proposed alignments follow along existing sewer rights-of-way that do not currently have legal provisions to allow trail use. The Township will need to renegotiate such existing easement agreements with each of the landowners along these sewer rights-of-way before trail use can be permitted for public use.

Easements that will be used for public trails are eligible for both state and federal funding – provided that there is a minimum 25 year term of use in the legal agreement. The acquisition of the easements would require an eligible entity – either a unit of government such as a municipality or county, or a competent non-profit organization partner.

Properties potentially impacted by proposed trail alignments can be identified utilizing the Township's GIS system and the existing parcel boundaries and property ownership information found within the GIS database.

The cost to acquire easements is difficult to estimate. The best method for determining what these costs may be would be to ascertain the average per acre real estate value of the land within which the proposed trail segment lies, multiply it by the amount of acreage to be purchased, and adjust it for the projected time of purchase. Easement values will likely differ from fee simple acquisition costs. The Township will only negotiate Greenway trail improvements with private property owners who wish to engage in specific agreements.

A model trail easement agreement has been developed by the Pennsylvania Land Trust Association that can be used by the Township as a starting point document for creating easement agreements where necessary. A copy of this model easement agreement can be found in the report appendix. Other trail and land conservation related tools can be found on the Land Trust's website: <http://conserveland.org/>.

General Liability Issues

Questions are often asked about the potential liability a landowner may have when located adjacent to a publicly used trail. The Pennsylvania Recreational Use Statute protects landowners who ease their property for trail use from

3: Greenway Plan

general liability if their property is infringed upon as a result of the public use of the trail. This act does not prevent a landowner from being sued, however it does provide protection that has been upheld numerous times by Pennsylvania courts. A copy of this statute can be found in the report appendix.

Boundary Surveys

Boundary surveys will be required for all proposed easements and/or purchases. The extent of each survey will be a matter of negotiation between the land owner and the Township.

For purposes of preparing construction documents, a centerline survey with cross sections of the trail alignment every fifty to one-hundred feet, (depending on topography and existing site features), will be the minimum necessary. All proposed bridge structure locations will also need to be completely surveyed.

Art on Trails

The following was submitted to the Township's Greenway Committee by the Lower Paxton Township Arts Council on May 2, 2007:

The Lower Paxton Township Arts Council respectfully requests the inclusion of Art in the plans, designs and budgets for the township's trails and greenways.

Art and artists enhance trails and greenways. Art related to the design and building of trails makes them more interesting, enjoyable, and exciting. Art can be added to existing components of the trails such as benches, drinking fountains, signs, bridges, walls etc. in the form of murals, sculptures, etc. Art can also be added to stand on its own on the trails.

Artful Ways, a trails collaboration between the National Park Service and the National Endowment for the Arts recently conducted a survey of individuals on the art benefits for trails. It discovered that about 86% of those surveyed confirmed that art enhanced public appreciation of the trail environment as well as attracted positive public attention and increased trail use.

The Lower Paxton Township Arts Council will assist the Greenway Committee on ideas for incorporating art, on securing the services of artists and looking for possible sources of funding for art on trails.

Some examples of how art can be added to our trails:

- Adding murals to any barrier fences, walls or any flat surface including the trail itself;*
- Adding artwork to benches;*
- Utilizing the resources of the township such as native birds for an "identify the birds" on the trail "exhibit." This could be an interactive, educational stop and go activities for all. Other themes could work, too;*

- *Using recycled materials such as old street signs or bicycle parts, artists can make murals and sculptures;*
- *Memorial benches;*
- *Artistic fencing;*
- *Bicycle Racks;*
- *Trash Cans;*
- *Keeping some large stumps of trees that may need to be cut down during the construction of these trails, artists can make them into pieces of art; and,*
- *Any of the above ideas could be part of a community project led by professional artists. This could be residents young and old for an intergenerational project;*
- *Add a representative of the Arts Council to the Greenway Committee to ensure that art is incorporated onto the trails.*

Riparian Corridor Protection

Riparian corridors within the Township are exposed to ever increasing stress as new developments provide increased stormwater runoff. In addition to providing protection to the existing watercourses, riparian corridors or buffers also serve as wildlife corridors for the migration of birds and animals. Within the report appendix is an article entitled “*Introduction to Riparian Buffers*” which provides further explanation relative to the importance of riparian buffers, and how they can be repaired, created, and maintained.

The existing ‘Conservation’ overlay district provides performance zoning measures that allow for flexibility in the site design to provide protection for many environmental features, but it does not provide a specific geographic location for where those measures need to be applied within a site. To provide direct protection to the Township’s existing riparian corridors, an overlay district will need to be geographically tied to these corridors.

The establishment of a Riparian Corridor Conservation overlay district will provide added protection to all known tributaries found within the Township’s watersheds. This overlay district can be spatially defined as a 160’ wide (75’ to either side of the 10’ wide tributary) minimum buffer to any and all mapped tributaries as defined by the Township GIS system. There are two (2) separate zones found within the corridor, each with its own set of permitted and conditional uses. Zone #1 consists of the first 25 feet from the stream bank and provides the most restrictions on use. Zone #2 is the outermost 50 feet of the overlay and allows for recreational trail use.

Refer to the Riparian Corridor Conservation exhibit at the end of this chapter for a complete list of permitted and conditional uses and other information defining this corridor.

3: Greenway Plan

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MIDDLE PAXTON
TOWNSHIP

WEST
HANOVER
TOWNSHIP

SUSQUEHANNA
TOWNSHIP

SOUTH
HANOVER
TOWNSHIP

SWATARA TOWNSHIP

Legend

- Parks/Open Space
- Township Owned Land
- Educational Facilities
- Utility Owned Land
- High Tension Overhead Utility
- New Developments
- Underpass / Overpass
- Floodplains
- Preliminary Greenway Alternative
- Preliminary Bikeway Alternative



LOWER PAXTON TOWNSHIP GREENWAY PLAN

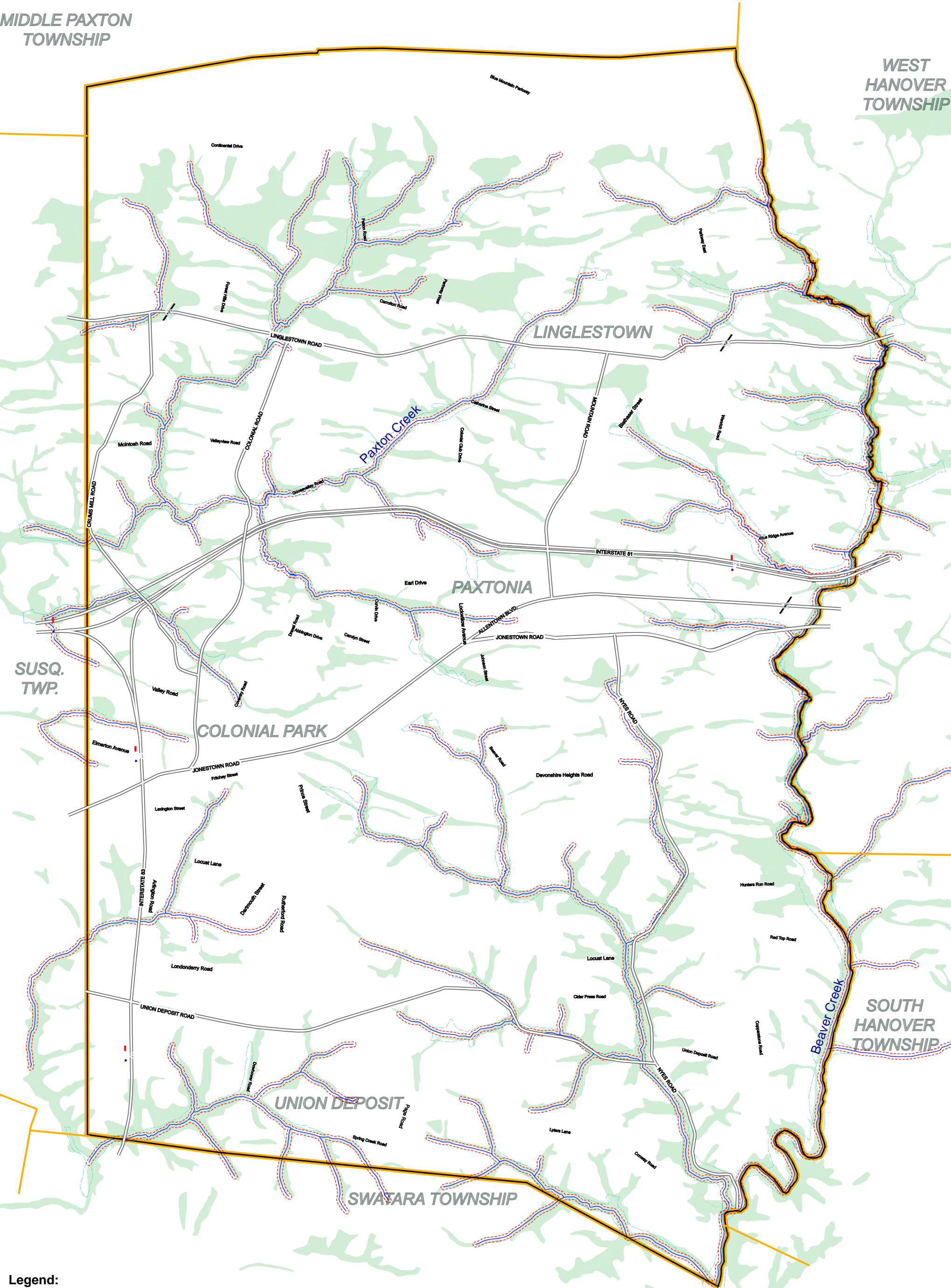
SIMONE COLLINS - LANDSCAPE ARCHITECTURE - SC# 06016.1

PRELIMINARY TRAIL ALTERNATIVES
(As Provided By Lower Paxton Township)

APRIL, 2008

1000' 500' 0' 1000'





Legend:

Township Boundary	Hydric Soils
Streams	Riparian Buffer (160' Wide)
Floodplain	Parcels

Riparian Buffers

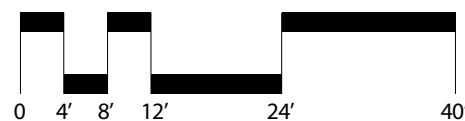
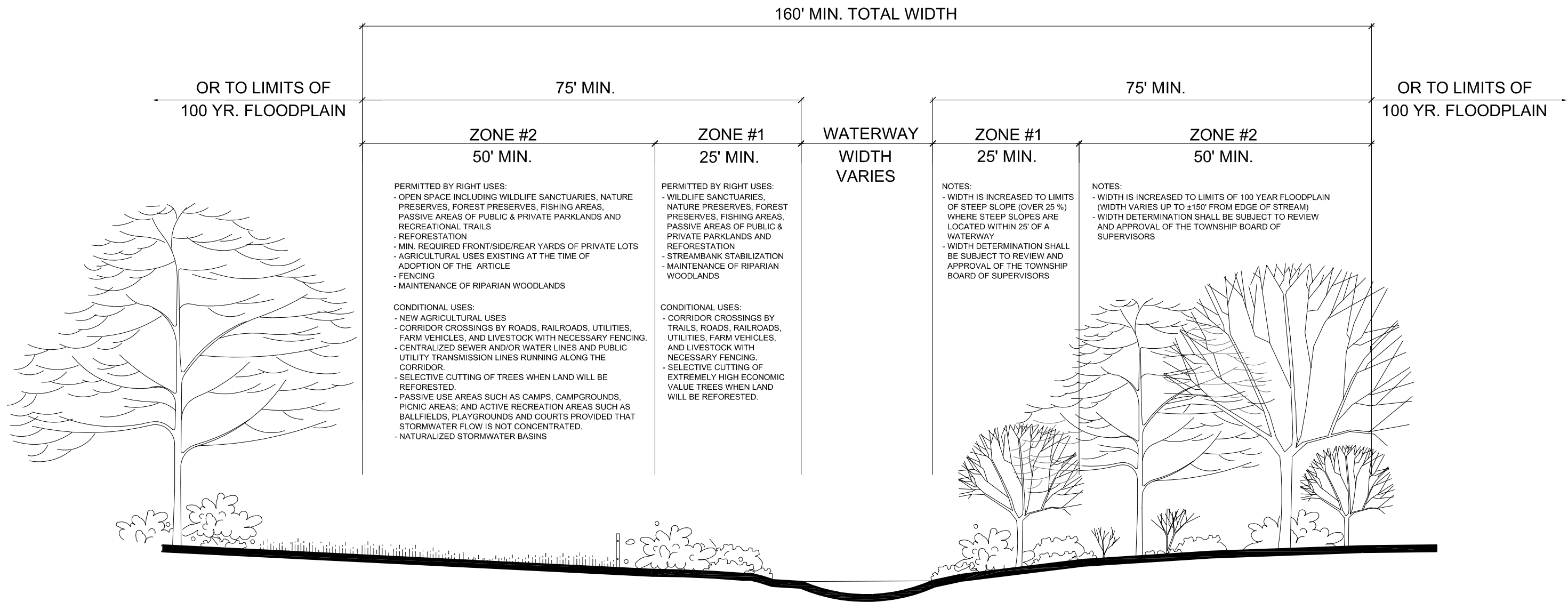
SIMONE
COLLINS
LANDSCAPE
ARCHITECTURE

SC# 06016:1

Lower Paxton Township Greenway Plan

Dauphin County, Pennsylvania

April, 2008



Riparian Corridor Conservation District



SC# 06016.1

Lower Paxton Township
Greenway Plan
Dauphin County, Pennsylvania

APRIL, 2008

Chapter Four: Implementation

Project Partners

The following is a listing of project partners identified by the study committee and the public participation process.

- Lower Paxton Township
- Dauphin County
- Schools
- Developers
- State Agencies (DCNR, PennDOT, DCED)
- Recreation Groups
- Local Businesses
- Harrisburg Bike Club
- Keystone Trails Association
- Susquehanna Appalachian Trail Conference

Each of these entities will likely be involved with the promotion, funding, and/or implementation of the Township Greenway system. The Township will need to continue to lead the implementation process by applying for and securing grant funds for an initial demonstration project.

The Schools may also contribute to the early implementation projects associated with any Transportation Enhancements ‘Safe Routes to School’ program applications by offering their support and/or potential matching funds. Schools may also be used to promote the greenway through a ‘walkabout’ or a signage art program. A walkabout is where students and residents can gather to demonstrate not only the greenway’s contribution to providing safer routes to school, but also the greenway’s recreational and interpretive educational opportunities.

Developers will be instrumental in the construction of the proposed trails where alignments are to be located within land tracts currently under land development review. Trails should be included within the development plans as required by the Township.

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

4: Implementation

Greenway Plan Recommendations

Adopt this Greenway Plan as an addendum to the Township Comprehensive Plan. By doing so, the Township will be able to establish a more authoritative position relative to the proposed improvements, recommendations, and implementation priorities described herein.

The Township must ensure that the proposed improvements within this plan are included in all new land development and roadway improvement projects. The Township must be vigilant to ensure that trail alignments proposed within this plan are included in the construction plans proposed by the developers as part of the land development process, and in the design plans for roadway improvements. Requiring developers to construct trails and/or pedestrian facilities to meet ordinances will allow these new residential (or commercial) developments to “plug into” the greenway trail system and eliminate the need to raise public dollars for pedestrian/trail improvements. The Township will also need to be involved with the roadway design process to make sure space is made for the proposed bicycle and pedestrian facilities, including bike lanes or routes, shoulder improvements, bicycle safe grates, signage, and crossing improvements. This effort must be continuous and therefore the Township should mandate that this Greenway Plan is to be referenced in the review of all land development applications and roadway design projects.

The Township must use its municipal funds to leverage additional grant funding from state and federal sources. The Township will need to apply for and receive grant funding from both State and Federal sources in order to develop the proposed improvements that will not be constructed as the result of land development and roadway projects. Many State grant programs can be used as a designated match for other federal grant programs and vice versa.



Tree lined street in the Colonial Park North area..



A dangerous intersection at Devonshire Heights and Nyes Roads.



Beaver Creek.

By leveraging funds, the Township will be able to maximize the amount of constructed improvements per municipal dollar.

Using the 'Safe Routes to School' demonstration project as an example, the Township has applied to DCNR's development grant program for approximately \$500,000 for the professional services to design and engineer the proposed connections. As part of this 50/50 grant program, the Township will contribute \$250,000 to match the \$250,000 provided by DCNR for the \$500,000 total. This \$500,000 total for professional services could then be leveraged as the 20% match towards the 80/20 federal 'Safe Routes to School' Transportation Enhancements reimbursement program whereby the Township would receive the other 80% (or \$2,000,000) for construction funding. In summary, the Township can realize \$2,500,000 worth of proposed improvements by investing \$250,000 (or 10% of the project total) by properly leveraging their funds.

Adopt a Riparian Corridor Conservation Overlay Zoning District. The model ordinance and corresponding riparian buffers mapping as described in this report will provide additional protection to the Township's natural resources in its most sensitive locations. The newly adopted subdivision and land development ordinance provides performance related criteria and protection for natural resources, however it does not provide protection for the specific geographical locations associated with the Township waterways that the riparian corridor overlay district would provide.

Implementation Priorities

1. Construct a 'Safe Routes to School' demonstration project. The Township is actively pursuing funding for a project by preparing applications to both the PA DCNR Community Conservation Partnerships Program (C2P2) Development grants program and the federally-funded Transportation Enhancements Safe Routes to School program administered by PennDOT. This demonstration project is located in the Colonial Park South / Union Deposit Implementation area (as described later in this chapter) and proposes approximately \$2.5M in improvements. The Township began this process by submitting the DCNR Development grant application in April of 2007. The Township will follow with an application to the PennDOT Safe Routes to School program in the autumn of 2007 for the remaining construction funds.
2. Complete the Neighborhood bikeway and sidewalk connections along existing roadway corridors between neighborhoods and destinations. These are the connections located within a ½ mile walking radius of the destinations identified on the trail mapping at the end of this chapter. These are the most important connections for providing a continual bicycle and pedestrian network within the Townships many communities for the majority

4: Implementation

of Township residents. These proposed routes are located within public rights-of-way, will not require the acquisition of additional land, and will only require construction funding to make them happen.

3. Complete the Neighborhood off-road connections. These connections may require property or easement acquisition. The Township should begin to investigate which of these connections beyond the initial demonstration project will be necessary to implement first so that negotiation processes can begin.
4. Prepare Feasibility Studies / Master Plans for the Off-Road trail connections along stream corridors. The Township off-road trail connections proposed with this plan will require further study to determine their feasibility, level of service, and construction requirements. Many proposed alignments follow along existing sewer line easements or through privately-owned land. The Township needs to assess the demand and impacts by reviewing more detailed information.
5. Keep an eye on the opportunities to provide connections to regional trails and/or bikeway systems beyond Township borders. Extending the Township-wide system beyond its municipal boundaries will provide greater transportation and recreation alternatives for all residents. These opportunities may be explored jointly by forming multi-municipal agreements with the adjacent municipalities involved with the potential connections.

GIS Mapping

Trail mapping for the project implementation area exhibits was created using a Geographic Information System (GIS) program. This GIS program is used as a data management and



Rutherford Road in the Colonial Park South / Union Deposit implementation area.



New residential developments in the southwest.



The PPL corridor leading to the top of Blue mountain and the Darlington Trail.



Conway Road in the southwest.



Route 39 through Linglestown.



Nyes Road looking south.

graphic tool to create the trail mapping exhibits; to calculate accurate lengths for trail segments; and, to identify impacted land parcels. Base data used in the formulation of this report was provided by Lower Paxton Township, the Tri-County Regional Planning Commission (TCRPC), and by the Pennsylvania Spatial Data Access (PASDA) website, including the aerial photography developed as part of the PAMAP project. Each of the proposed improvement alignments shown in these exhibits have been delivered to the Township in GIS format to be included as part of their on-going inventory and for future use and reference.

Implementation Areas

Colonial Park South / Union Deposit

This implementation area is located in the southwest portion and is one of the more densely populated areas in the Township. Locust Lane and Union Deposit Road are the major east-west thoroughfares with Interstate 83, Rutherford Road, and Arlington Road forming the major north-south roads in the area. The majority of the uses located in this vicinity include residential, institutional, neighborhood commercial, and highway commercial along Route 83. Five schools, two parks, and the Lower Paxton Township Municipal Building are located in this vicinity. There are many established developments with sidewalks that are disconnected from other nearby neighborhoods. This area is where the initial 'Safe Routes to School' demonstration project is to be located.

Colonial Park North / Paxtonia

Jonestown Road is the dominant physical feature in this planning area which also comprises a vibrant commercial core for the Township. The west portion of this thoroughfare contains the Colonial Park Mall and other big box retail shopping centers. The Interstate 81 corridor also crosses the planning area to the north. Other major roadways are the north-south

4: Implementation

corridors of Colonial Road and Nyes Road, and the east-west conduits of Devonshire Road and Old Jonestown Road. Outside the commercial corridor the area is comprised of mostly residential and institutional uses. There are three elementary schools, three parks, and the Friendship Community Center all located within this implementation area.

Linglestown

This implementation area is oriented around the small village of Linglestown, located in the northeast portion of the Township. Commercial uses can be found intermittently along Mountain Road and Linglestown Road with the rest of the uses being comprised of primarily residential and institutional. The major east-west roadway corridors are Linglestown Road and Interstate 81. The north-south connectors are Mountain Road, Piketown Road, Lockwillow Avenue, and Blue Mountain Parkway. There are two major schools located within this area; the Linglestown Junior/Senior High, and Central Dauphin High School. Parks located within this area include Koons Park and Wolfersberger Park. The Beaver Creek forms the east boundary for the Township and is a significant natural feature in this locale. The north portion of this planning area contains a PP&L overhead power line that travels to Blue Mountain to the northwest and West Hanover Township to the east.

Northwest

Linglestown Road is the main east-west traffic conduit and serves as the commercial core for the area. Other uses in the planning area include residential, institutional, and several large tracts of undeveloped land that remain under constant pressure to fill future development needs for the Township. Significant north-south roadways include Crums Mill Road, Colonial Road, and Forest Hills Drive. The Darlington Trail and the PP&L overhead power line easement runs along the northern boundary of the planning area. The emergence of the Paxton Creek is a valued natural resource found in this area.

Southeast

The primary use of the Southeast planning area is residential. Many large undeveloped tracts also exist, placing this area of the Township under the greatest pressure for future development. The Nyes Road corridor forms the primary north-south traffic corridor and contains various important natural features. Major east-west road connections include Devonshire Heights Road, Locust Lane, and Union Deposit Road. The Beaver Creek is an important natural feature found in this area. Kings Crossing Park and Hodges Height Park are located in this planning area.

Estimate of Probable Development Costs

Below is a summary of the conceptual-level cost estimates to develop the proposed Township-wide bicycle and pedestrian facilities. These costs were developed by taking measurements from the GIS mapping/database and applying them to the unit costs as described in 'Chapter Three: Greenway Plan' under the section entitled 'Proposed Greenway Connections'.

<u>Neighborhood Off-Road</u> - (50,600 LF @ \$40/LF)	\$2,024,000
<u>Neighborhood On-Road</u>	
Bike Lanes / Routes (86,500 LF @ \$15/LF)	\$1,297,500
Sidewalks (86,500 LF @ \$35/LF)	\$3,027,500
<u>Walkways</u> – (14,150 LF @ \$35/LF)	\$495,250
<u>Township Off-Road</u> – (79,500 LF @ \$40/LF)	\$3,180,000
<u>Township On-Road</u> – (165,000 LF @ \$3/LF)	\$495,000
<u>Intersection Improvements</u> – (18 @ \$10,000 Each)	<u>\$180,000</u>
Subtotal Improvements:	\$10,699,250
Contingency (10%)	<u>\$1,069,925</u>
Improvements Total:	\$11,769,175
Design & Engineering (20%)	<u>\$2,353,835</u>
GRAND TOTAL:	\$14,123,010*

**These costs do not include acquisition of properties and are based on estimated construction costs for 2007 including standard prevailing wage rates associated with the public sector. Costs will need to be adjusted at a rate of 3-4% for each year following to account for the general rate of inflation.*

It is not expected that the burden for funding these improvements will be the sole responsibility of the Township. In fact, many if not most of the proposed improvements should be developed as part of the land and/or roadway development processes where the funding is borne by the specific project budget and/or private land developer. The remainder of improvements can be funded through grant programs whereby the Township can leverage their municipal funds to achieve the maximum amount of improvements per Township dollar.

4: Implementation

Based on the report mapping, it is estimated that approximately 40% of the proposed off-road connections - and potentially more as land development applications are filed - could be constructed by private developers. The total for all proposed off-road improvements is \$5,204,000. Private developers could absorb approximately \$2,081,600 (40%) of that total reducing the Township total to \$3,122,400. The total for both the Neighborhood and Township on-road improvements, including walkways and intersection improvements - all of which are proposed to be completed within the existing roadway rights-of-way - is \$5,495,250. It is reasonable to assume that the majority of these proposed improvements (75%) could be implemented as part of roadway improvement projects, thus reducing the Township contribution to approximately \$1,375,000.

The combined total of remaining off-road and on-road improvements estimated to be borne by the Township is approximately \$4,500,000 which can be significantly reduced through the proper leveraging of municipal funds through grant programs as described earlier in this chapter. It is conceivable that the Township could realize the estimated total of \$14,125,000+/- for the improvements described in this report for as little as \$2,000,000+/-.

Potential Funding Sources

For a quick reference guide relative to matching the potential funding source to the proposed improvements, please refer to the funding matrix found at the end of this chapter.

Surface Transportation Program (STP):

Eligible projects include the construction of bicycle transportation facilities; construction of pedestrian walkways; bicycle safety brochures, maps and public service announcements. Any bicycle project must be primarily a transportation project and STP projects should encourage desirable traffic patterns. Additionally, STP projects should sensitize people to environmental and social concerns. The Federal Highway Administration (FHWA) administers this program.

Ten percent of STP funds are set aside for Transportation Enhancements (TE). STP projects are not required to demonstrate impacts on traffic or transit.

Transportation Enhancements (SAFETEA-LU):

On August 10, 2005, the President signed into law the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU). The bill allocates approximately \$244 billion nationwide over six years and includes funding for recreational trails and parks. In Pennsylvania, the Department of Transportation (PennDOT) administers several SAFETEA-LU bicycle and pedestrian related programs. Grant awards in excess of \$1 million are not unreasonable for trail projects.

Typically, a non-federal match is required to be 20% of the grant award. A strategy preferred by PennDOT is to require the local partner to prepare construction documents and obtain necessary environmental clearances, property control documents and utility relocations plans as the local match for these “pre-construction” tasks - so that the project is ready for construction using the TE funding. The costs to prepare these documents can be the non-federal match to the TEA-21 funds, and does not necessarily need to be exactly 20% if all needed documentation can be completed for less. More information about this program can be found at the following link: <http://www.fhwa.dot.gov/safetealu/summary.htm>

PA Department of Transportation (PennDOT) Transportation Enhancements, Home Town Streets and Safe Routes to School Programs:

The PA Department of Transportation (PennDOT) “Hometown Streets & Safe Routes to School” program is to fund pedestrian and bicycle-related improvements in communities to improve safety, connectivity, and aesthetics for children to walk to school.

The program is an eligible project category of the “Transportation Enhancements” (TE) program with the funds originating from the Federal Highway Administration and administered through PennDOT in cooperation with the regional planning organizations across the state.

This program, like all FHWA programs requires that all federal and state environmental compliance regulations be met.

This funding program is not a grant program, but is a “reimbursement” program that does not necessarily require the local client to advance payments before being reimbursed. Projects as large as \$1M in federal dollars may be reasonable (equivalent to up to 80% of the total project cost). The 20% matching share can be from non-FHWA federal sources, state, county, local or private sources. The Regional Planning Organization (RPO or MPO) should be consulted.

The application materials and guidance are available online at: <http://www.dot.state.pa.us/pennDOT/Bureaus/CPDM/Prod/Saferoute.nsf>

Legislative Funding:

State and federal elected officials can often include items into legislation for worthy projects in their districts. A conversation between county and municipal officials and legislators is the way to begin this process. This type of funding should be targeted toward capital improvement projects.

4: Implementation

PA Department of Recreation and Natural Resources (DCNR) Community Conservation Partnership Program (C2P2):

A bond issue approved in a statewide referendum initially funded this program. Perennial funding is through a dedicated percentage of the statewide real estate transfer tax.

Funding from the program is dedicated toward recreation, environmental and cultural heritage resources throughout the state. Trails are eligible. Roadway projects are generally not eligible. Several agencies distribute funds through competitive grants, including: the PA Fish and Boat Commission, PA Historic and Museum Commission, and the PA Department of Conservation and Natural Resources (DCNR). DCNR funding application rounds were revised in 2007, so that most development grant applications are due in April. Consult with the DCNR Regional Advisor. State funds can be used for discrete projects or as a match to federal funds. DCNR requires a 50-50 match (cash or in kind) to its grant awards for trails. More information on this program can be found at: <http://www.dcnr.state.pa.us/brc/grants/>

Recreational Trails Program:

This program provides funding to states to make grants for trail and trail-related projects. Funding to this program is provided to the Commonwealth through the Federal Highway Administration (FHWA) and the Intermodal Surface Transportation Act (ISTEA) of 1991 which included the Symms National Recreational Trails Act (NRTA), and the National Highway System Designation Act of 1995 (NHS Act).

The monies may be used for the development of urban trail linkages near homes and workplaces; maintenance of existing recreational trails; development of trail-side and trail-head facilities; provision of features which facilitate the access and use of trails by persons with disabilities; acquisition of easements for trails, or for trail corridors identified in a State trail plan; acquisition of fee simple title to property from a willing seller; and construction of new trails on state, county, municipal, or private lands. Note: This program is one of the only to fund trail maintenance. This fund can be used for motorized (snowmobile) trails. More information on this program can be found at: <http://www.fhwa.dot.gov/environment/rectrails/>

DEP PA Growing Greener:

The Growing Greener Program signed into law by Governor Tom Ridge in 1999 invested millions to preserve farmland and protect open space; eliminate the maintenance backlog in State Parks; clean up abandoned mines; restore watersheds; and provide new and upgraded water and sewer systems.

In 2002, the state legislature added additional monies to the program due to its great popularity. Four different agencies are involved in helping communities "grow greener" under the Environmental Stewardship & Watershed Protection

Act: Departments of Environmental Protection, Agriculture, Conservation and Natural Resources and PENNVEST. Of these four agencies, projects that may be applicable to trail development will most likely be funded by the Department of Conservation and Natural Resources. In 2007, the PA Department of Environmental Protection (DEP) administered a large portion of the Growing Greener funds – with target programs for stormwater treatment and clean water demonstration projects.

The Act authorizes grants through DEP for acid mine drainage abatement, mine cleanup efforts, abandoned oil and gas well plugging and local watershed-based conservation projects. These projects can include: watershed assessments and development of watershed restoration or protection plans, implementation of watershed restoration or protection projects, storm water management wetlands, riparian buffer fencing and planting, stream bank restoration and agricultural best management practices (BMPs). Grants are available to a variety of eligible applicants, including: counties, authorities and other municipalities; county conservation districts; watershed organizations; and other organizations involved in the restoration and protection of Pennsylvania's environment. These grants support local projects to clean up “non-point” sources of pollution throughout Pennsylvania. Since many of the proposed trails and greenways include areas along waterways, there will be many opportunities for re-establishment of riparian buffers. It may be possible to blend Growing Greener grants with other grants for trail construction. This funding source would be most applicable to greenway corridors along Township creeks.

DCED Community Revitalization Funds:

The Department of Community and Economic Development (DCED) Community Revitalization Fund is a state program that supports local initiatives to improve the stability of communities and enhance local economies. This agency has four application periods throughout the year. Applications are submitted online. The grant program covers a wide range of eligible uses including: acquisition of land, buildings, and right-of-ways; recreation projects; programs and developments that build capacity of the local community and relevant local organizations to better serve the needs of the community, and other reasonable and necessary expenses related to community-based activities. Active support of the district's state senator and / or state representative is critical in a successful grant application. More information on this program can be found at: <http://www.newpa.com/programDetail.aspx?id=72>

PennDOT:

The Pennsylvania Department of Transportation may provide assistance with any on-road cycling route that is proposed on state highways or through TE funding. PennDOT may provide signs and installation of “share the road” markings and, if any shoulder widening is necessary, the local district may provide these improvements through its “Betterment Program” maintenance

4: Implementation

funding. This funding source would be applicable towards the Township greenway and trail system on-road routes.

Lower Paxton Township:

Some grant programs allow “in-kind” services in place of cash to count as a local match. It is strongly suggested that the Township immediately begin to keep a detailed inventory of municipal staff and/or official time spent on the greenway project. Occasionally, grantors may allow time spent to date to count as part of the in-kind match for funds. This record will also demonstrate a continuing commitment on the part of the Township to the successful implementation of the master plan. The Township may in some cases choose to invest municipal funds in specific aspects of the Greenway development as “leverage” to secure funding from other partners.

Private Foundations:

There are corporations and foundations that support public works such as trail development. The competition for these funds is brisk, but the opportunities should be researched. Funding is often to non-profit organizations.

Schools:

Local schools may also be of assistance in several ways. The student body might get involved with clubs, fundraising events, and trail cleanup days. The faculty could incorporate the trail into various curricula with students helping to develop and possibly maintain the trail as part of a classroom assignment or after school club. While the amounts of funds raised may be relatively small, this process builds constituents and support that is critical to the long-term success of the greenway and trail system.

Maintenance

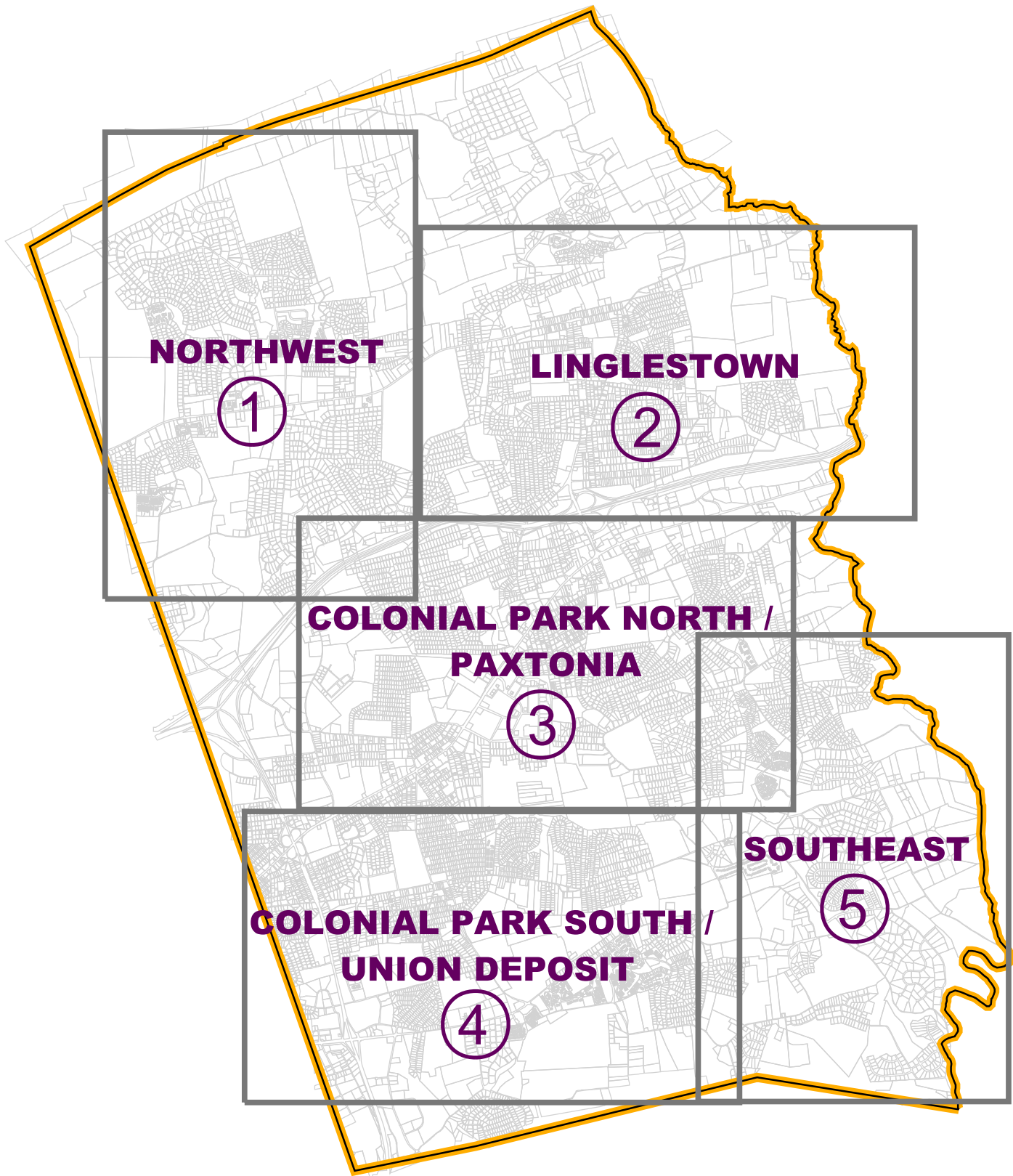
Maintenance responsibilities for off-road trail sections could be assumed by volunteer ‘Friends of the Trail’ or similar groups, homeowners associations, or possibly by Township staff. Each of the trail operation and maintenance agreements will need to be developed on an individual basis by location and will determine the most appropriate entity to perform these tasks. Annual operations, maintenance and security guidelines for a typical trail can be found in the report appendix.

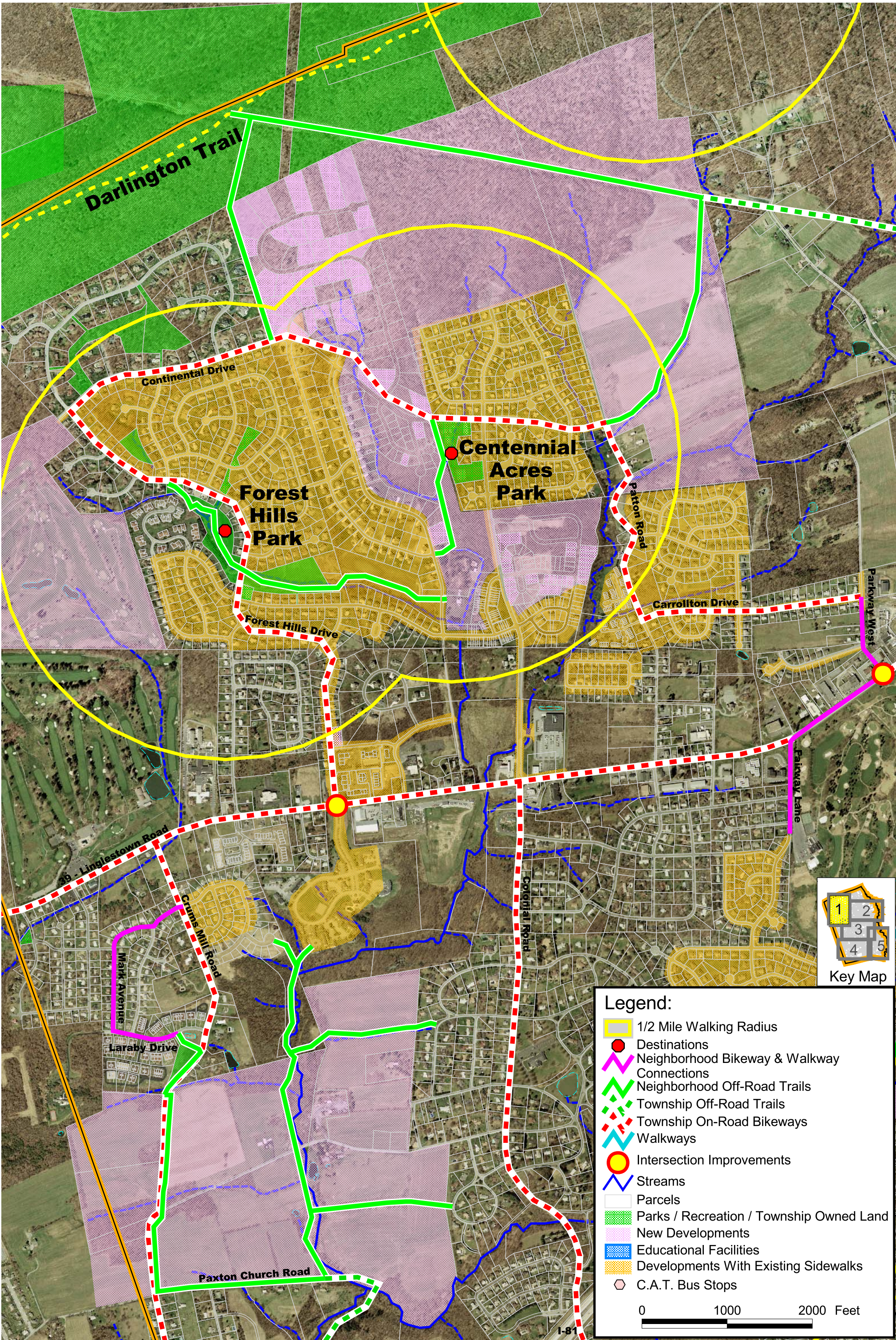
4: Implementation

Potential Funding Sources			Applicability			
Program	Agency	Federal / State / Local	Neighborhood Off-road	Neighborhood On-road	Township Off-Road	Township On-Road
Surface Transportation Program (STP)	FHWA	Federal	X	X	X	X
TEA-21 Enhancements (SAFETEA-LU)	FHWA / PennDOT	Federal	X	X	X	X
PennDOT Transportation Enhancements - Home Town Streets / Safe Routes to School	FHWA / PennDOT	Federal	X	X	X	X
Legislative Funding	Elected Officials	Federal / State	X	X	X	X
PA DCNR Community Conservation Partnership Program (C2P2)	PA DCNR	State	X		X	
Recreational Trails Program	FHWA	Federal	X	X	X	X
PA DEP Growing Greener	PA DEP	State	X		X	
PA DCED Community Revitalization Program	PA DCED	State	X	X	X	X
PennDOT Betterments Program	PennDOT	State		X		X
Lower Paxton Township	Municipality	Local	X	X	X	X
Private Foundations	varies	varies	X	X	X	X
School District	School District	Local	X	X	X	X

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Chapter 4 - Exhibits


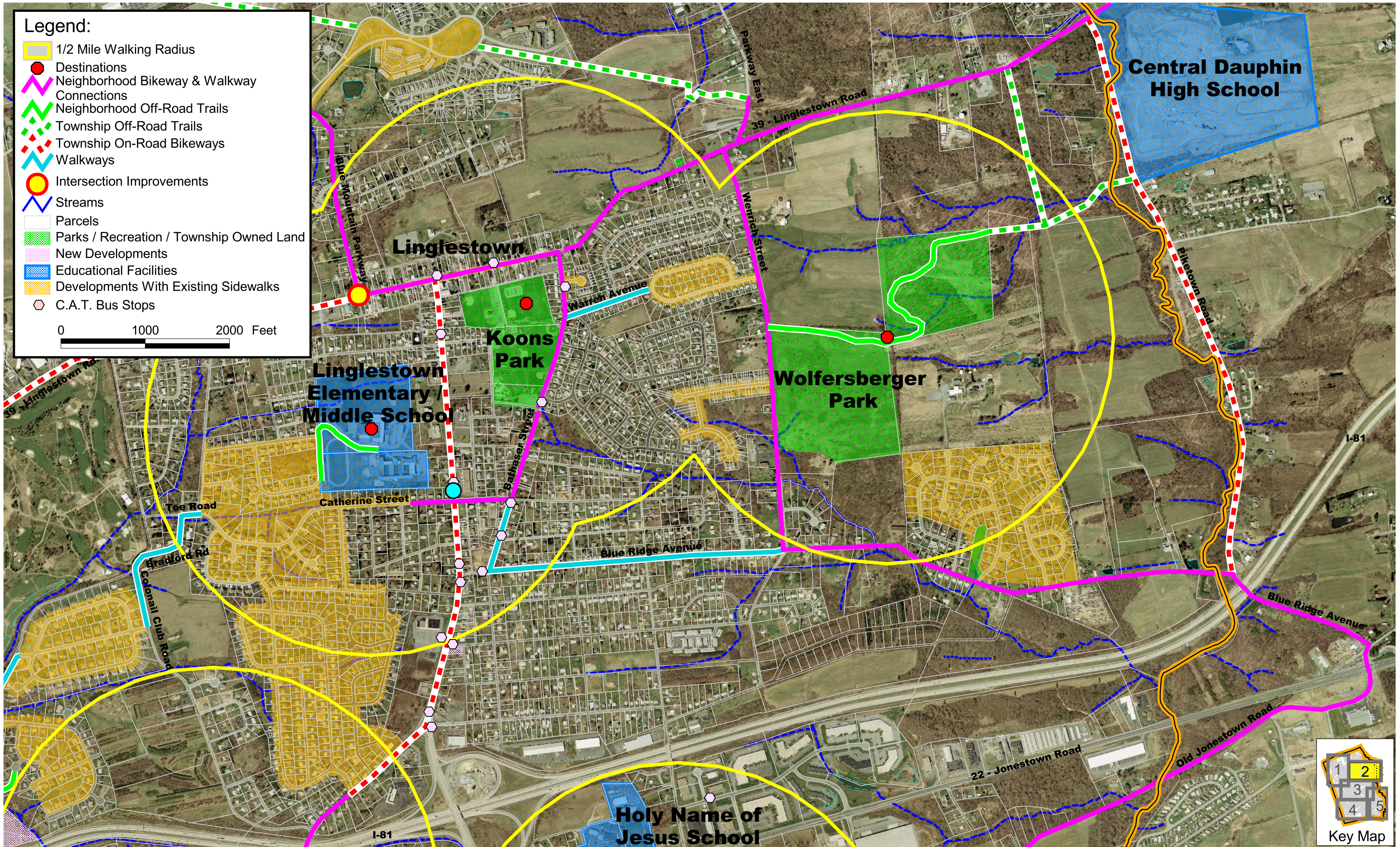




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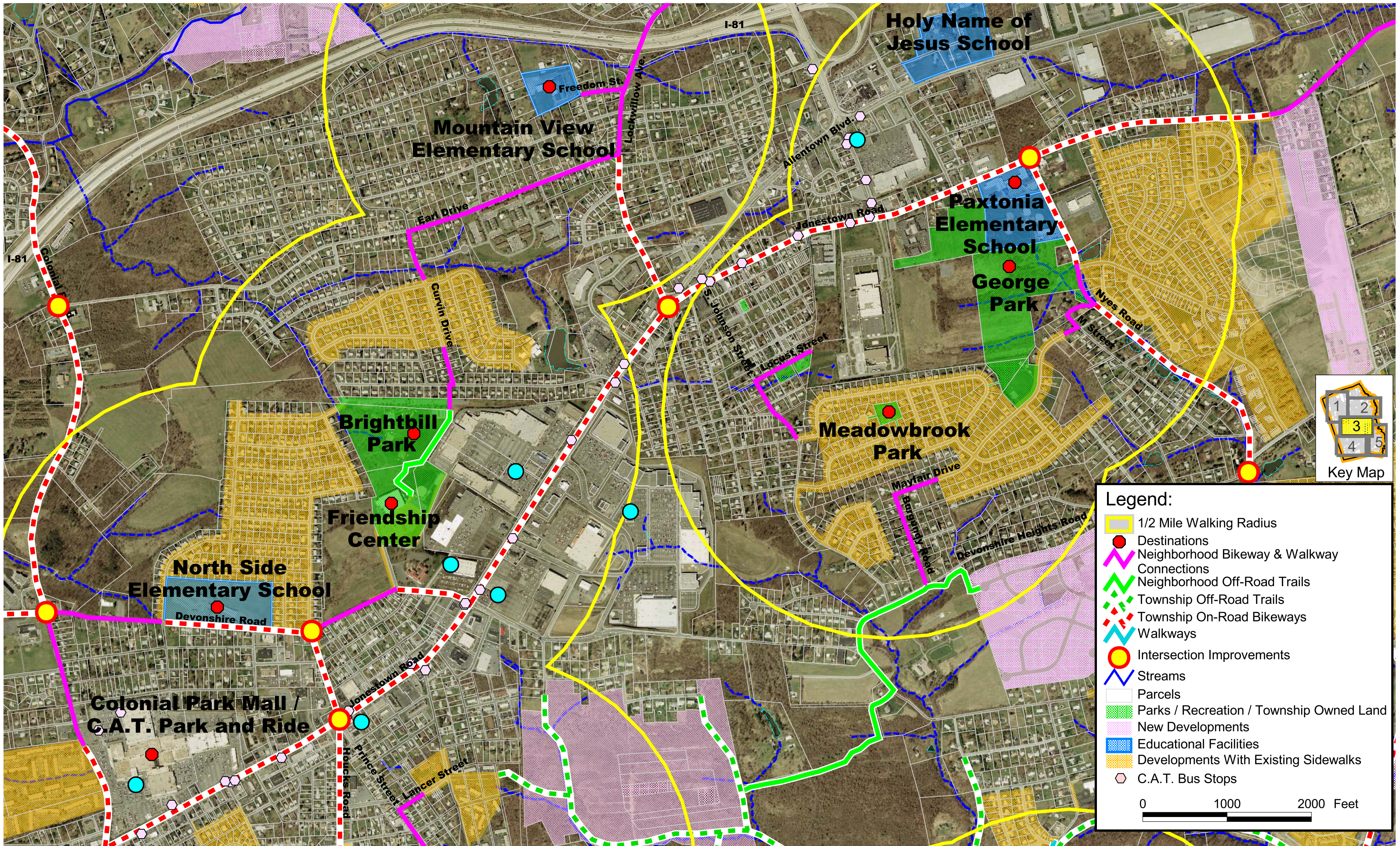
-  1/2 Mile Walking Radius
-  Destinations
-  Neighborhood Bikeway & Walkway Connections
-  Neighborhood Off-Road Trails
-  Township Off-Road Trails
-  Township On-Road Bikeways
-  Walkways
-  Intersection Improvements
-  Streams
-  Parcels
-  Parks / Recreation / Township Owned Land
-  New Developments
-  Educational Facilities
-  Developments With Existing Sidewalks
-  C.A.T. Bus Stops

0 1000 2000 Feet

Key Map

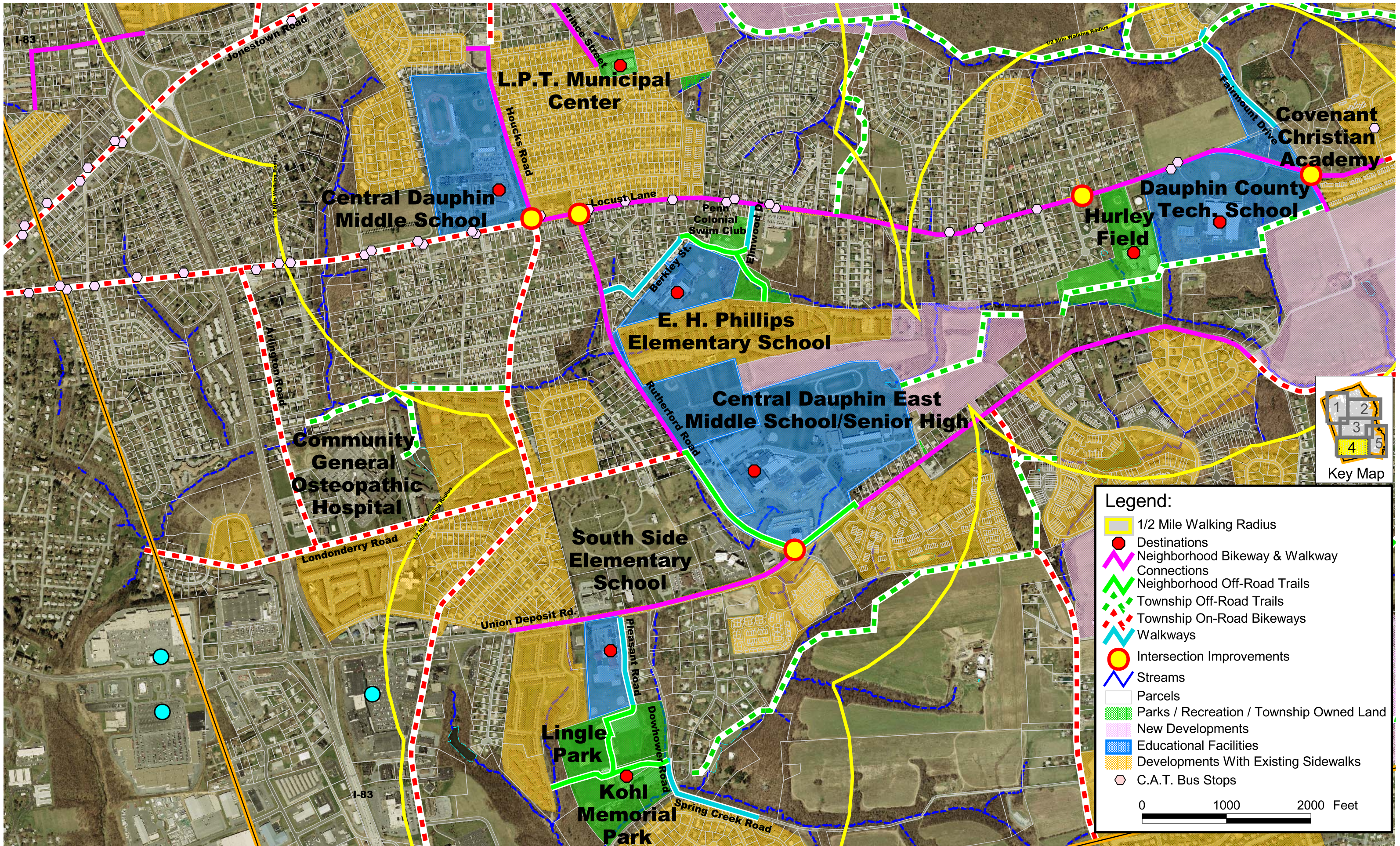


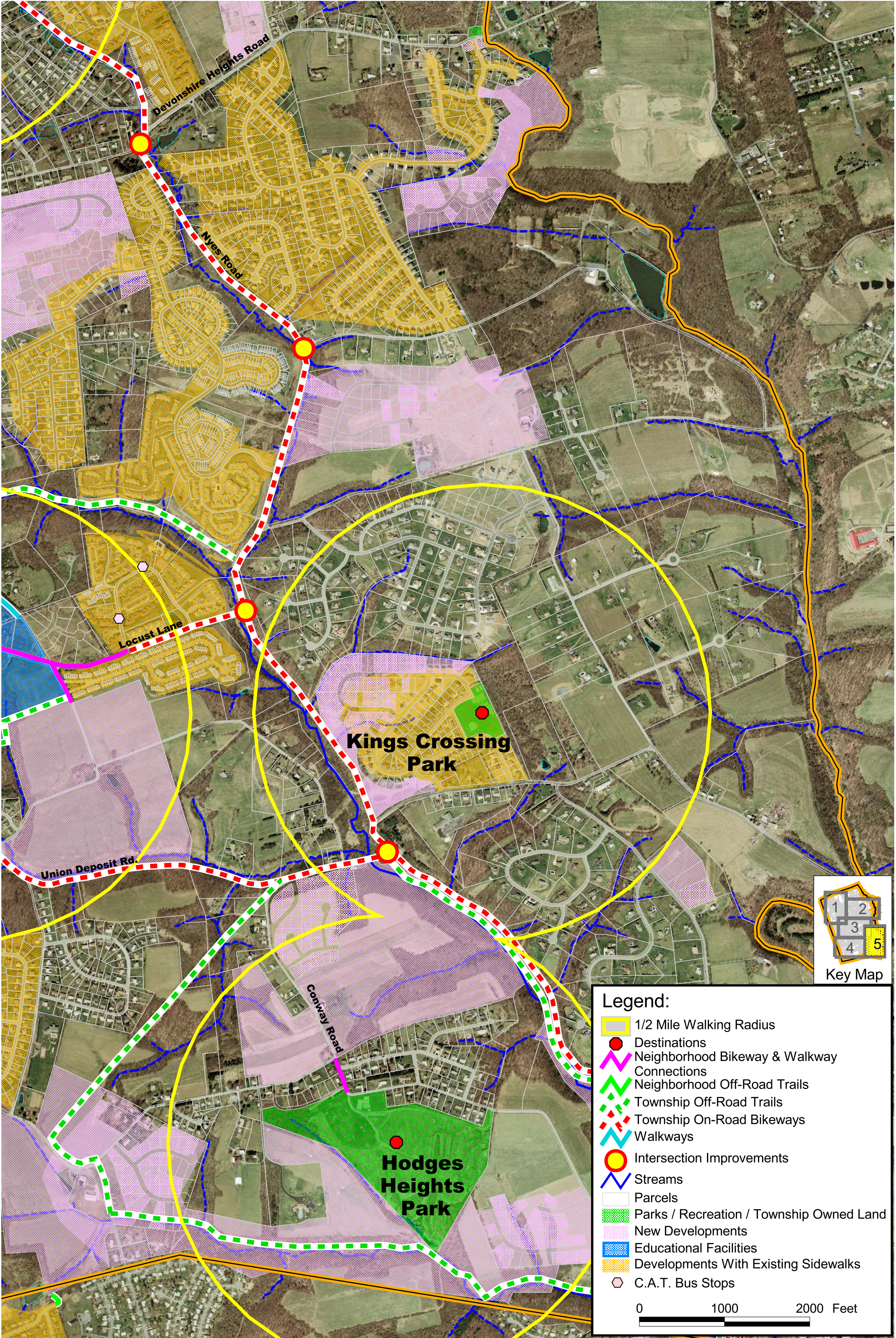


Legend:

- 1/2 Mile Walking Radius
- Destinations
- Neighborhood Bikeway & Walkway Connections
- Neighborhood Off-Road Trails
- Township Off-Road Trails
- Township On-Road Bikeways
- Walkways
- Intersection Improvements
- Streams
- Parcels
- Parks / Recreation / Township Owned Land
- New Developments
- Educational Facilities
- Developments With Existing Sidewalks
- C.A.T. Bus Stops

0 1000 2000 Feet





APPENDIX

- **Impervious Cover Exhibits**
- **Meeting Notes / Attendance Lists**
- **Key Person Interviews Summary**
- **Community Letters, Comments, News Articles**
- **Subdivision and Land Development Ordinance Review Comments**
- **Sample Trail Easement Agreement**
- **Operation, Maintenance, and Security Guidelines**
- **Introduction to Riparian Corridors**
- **Pennsylvania Recreational Use Statute**

Lower Paxton Township

1985 Impervious Surface Coverage

Legend



Lower Paxton Township



Municipal Boundary



Interstate and Limited Access



Primary US and State Highways



Secondary State and County



Freeway Ramp

Impervious Surface

VALUE

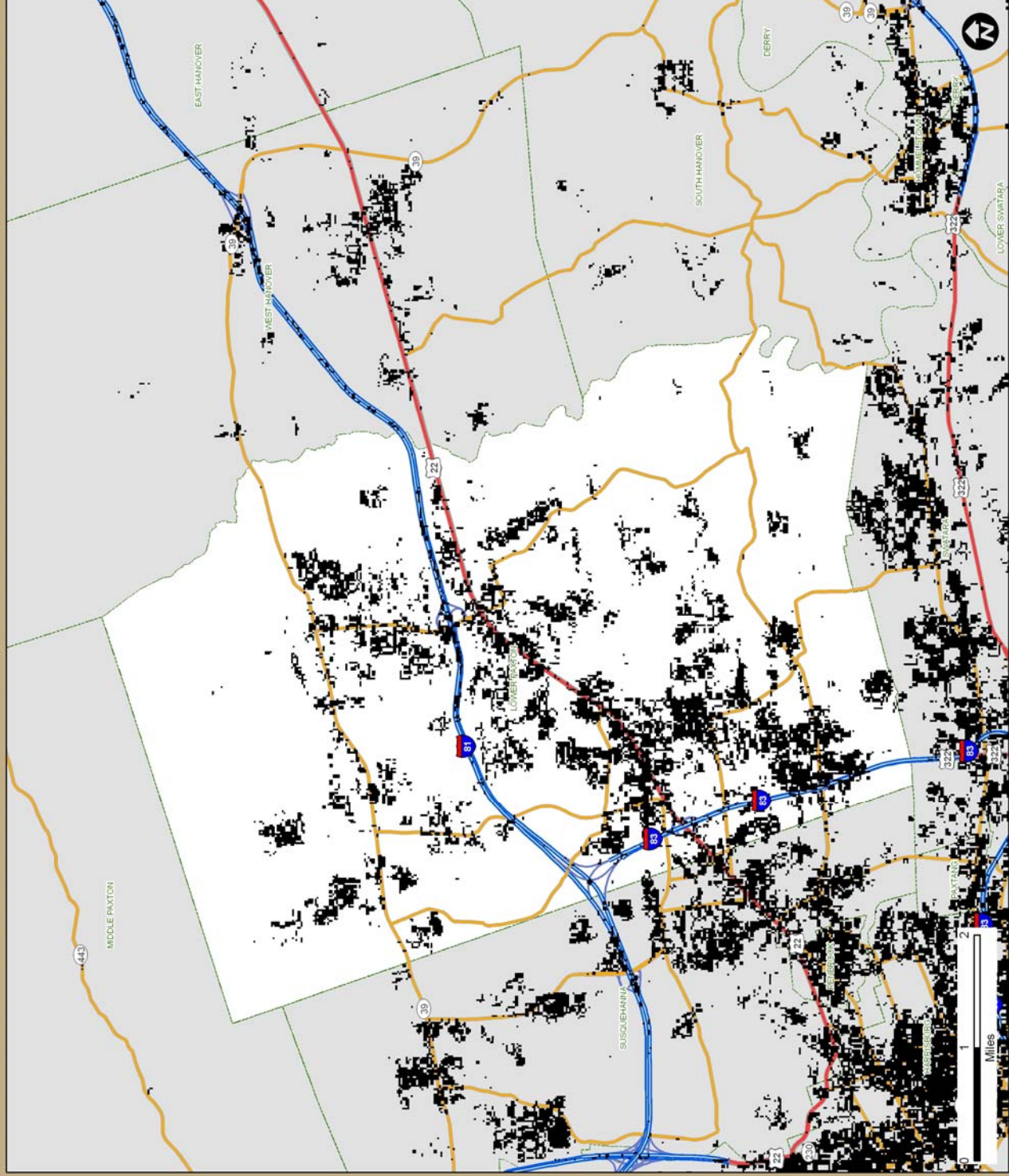


Other

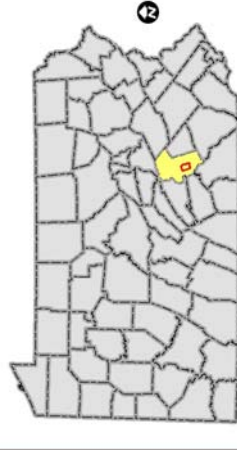


Impervious Surface

County Boundary courtesy of PennDOT
Roads courtesy of ESRI State Street data
Impervious surface data courtesy of Penn State University



Lower Paxton Township, Dauphin County, Pennsylvania



Lower Paxton Township

2000 Impervious Surface Coverage

Legend



Lower Paxton Township



Municipal Boundary



Interstate and Limited Access



Primary US and State Highways



Secondary State and County



Freeway Ramp

Impervious Surface

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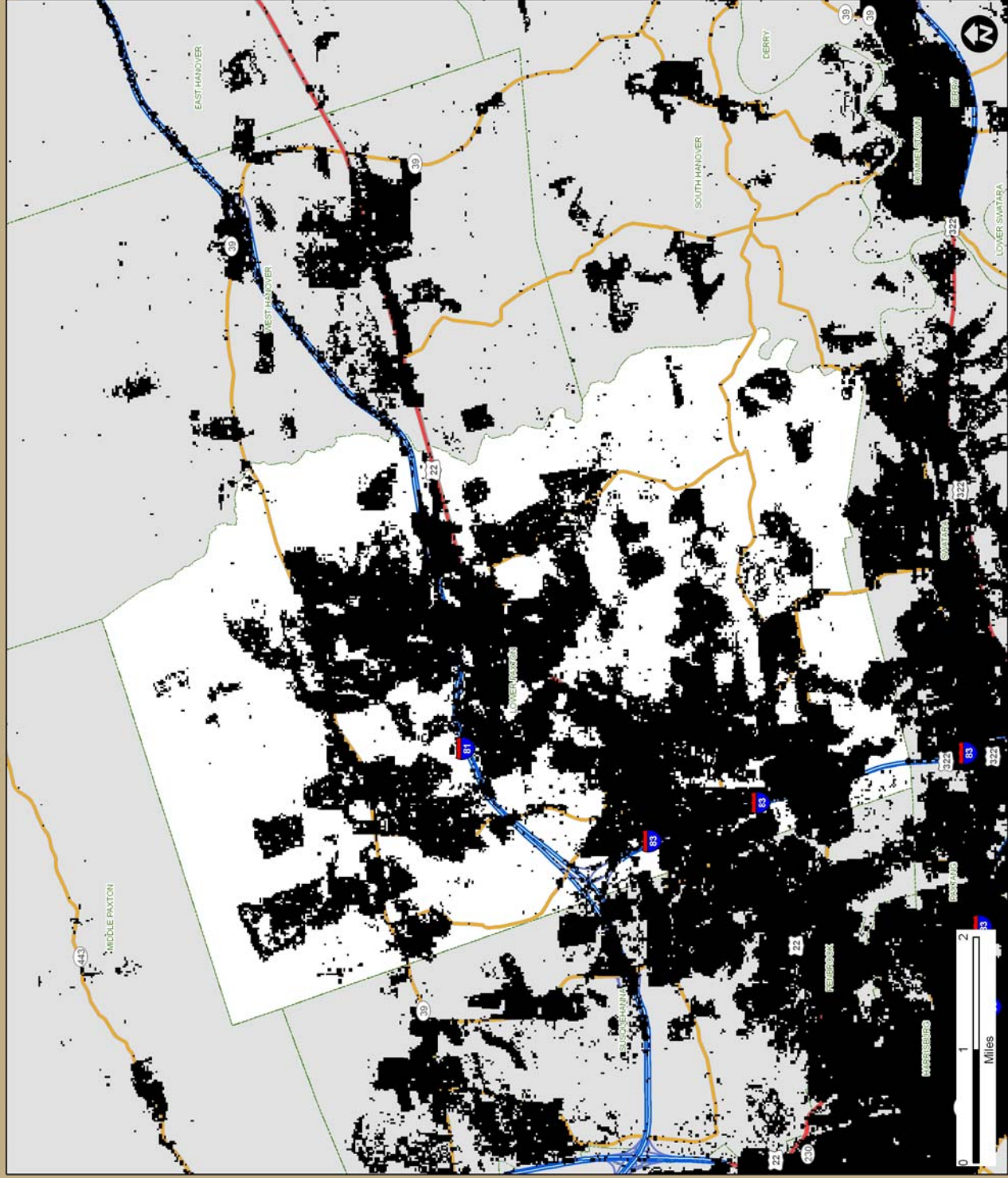


Other

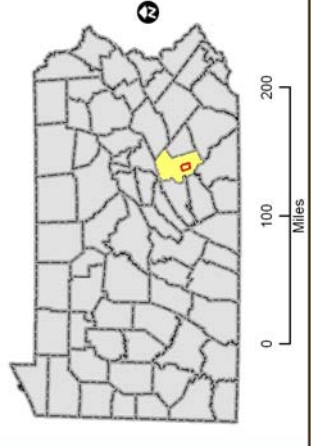


Impervious Surface

Courtesy: Boundary courtesy of PennDOT
Roads courtesy of ESRI
Impervious surface data courtesy of Penn State University



Lower Paxton Township, Dauphin County, Pennsylvania





Lower Paxton Township Greenway Plan

SC# 06016.10

CARDS RECORD – 12/05/06

Goals

- Inventory “Green” Infrastructure
- Inventory “Gray” Infrastructure
- Provide linkages
- Incorporate “Green” Infrastructure
- Develop a planning process
- Provide transportation alternatives
- Funding sources / budget

Concepts

- Trail easements
- On-road bike routes
- Water quality protection
- Overlay districts
- Riparian buffer zones
- ‘Protective’ greenways
- Trails as infrastructure
- EMS / police access
- Redevelop existing landfill
- Inter-municipal cooperation
- “Multi use” trail
- Nyes Road trail corridor
- Piketown Road corridor
- Trails in “TND’s”
- Link neighborhoods
- Habitat corridors
- Restroom facilities
- Links to adjacent Municipalities
- Safety in numbers
- Liability

Facts

- Highway corridors
- Agricultural lands
- Township parks

- Watersheds
- ADA accessibility
- West Hanover Trail System (50+ miles)
- Sewer line

Partners

- Lower Paxton Township
- Dauphin County
- Recreation groups
- Public and developers
- Other Municipalities
- Schools
- DCNR
- Local businesses

Implementation – What’s happening next?

- Nyes Road to be improved
- Utility rights of way
- Liability
- Safety in numbers
- Trail priorities
- Link facilities
- Maintenance

Lower Paxton Township Greenway Plan

Public Meeting #1

Tuesday, December 5th, 2006, 7:30PM @ Lower Paxton Twp. Municipal Center

NAME	ADDRESS	PHONE	EMAIL
George Potliger	1300 J Hampton Hill Ct	717-652-5867	—
—	Harisburg Pa 17111-6808	—	—
Richard Murrell	4701 Roped Ave ¹⁷¹⁰⁹ Harrisburg PA	—	—
Robert Banks	6551 Lykens Lane, Hg.	561-2445	familybanks@earthlink.net
ROD MURRAY	4020 EASY ST, HBG 17109	657-5499	—
John Shero	1423 Ford Ave HBG 17109	649-5095	sherojohn@hotmail.com
Edwin Shetters	P.O. Box 6036, Hg. Pa.	540-9531	hutch@paonline.com
Norman Lacasse	2415 Patton Rd. Hg PA 17112	652-4079	normlacs@paonline.com
Betsy Seibel	117 Curran Dr Hg PA 17112	545-2198	tsbs@comcast.net
WATSON FISHER	2023 SCOTT MEADOW CT 17110	652-9367	WDFISH@COMCAST.NET
JEFF BUEHLET	120 Koch Ln.	657-8281	ATHIKERJB@AOL
ERIC MILLIRON	6080 CHERRYHILL RD HBG 17111	652 0882	—
Bob McCartney	2710 WINDSOR AVE HBG 17112	315-2538	—
Henry C Adams	1027 Seaview Drive	671-6981	HCAdams@aol.com
Chi Johnston	6230 Warren Ave HBG 17112	651-6673	—
Tim Murphy	1524 Pine Hollow Rd, Hg 17109	657-9824	vindemurph@verizon.net
Diana Fishlock	Patriot - News	255-8251	dfishlock@pnco.com
REYNOLD GREEN	6012 ALMANI LANE	671-8744	—

SIMONE COLLINS • LANDSCAPE ARCHITECTURE

511 OLD LANCASTER ROAD • BERWYN, PENNSYLVANIA 19312 (610) 889 0348

Wednesday, November 1st, 2006, 6:00 PM @ Friendship Community Center

SIMONE COLLINS • LANDSCAPE ARCHITECTURE
511 OLD LANCASTER ROAD • BERWYN, PENNSYLVANIA 19312 (610) 889 0348



2/12/07

Lower Paxton Township Greenway Plan

Lower Paxton Township, Dauphin County

SC#06016.10

Public Meeting #2 - Notes

Date/Time: 2/6/07, 7:30 PM

Location: Lower Paxton Township Municipal Building

In Attendance:

Natalie Hoffman – Lower Paxton Township Steering Committee (LPT)

Chris Johnston – LPT

Norm Lacasse – LPT

Brian Luetchford – LPT

Betsy Sibert – LPT

Bill Weaver – LPT

Justin Keller - Simone Collins, Inc. (SC)

Brian Styche - SC

Public Attendees – (See Attached Sign-in Sheet)

Notes:

1. Prior to the public meeting, SC representatives met with members of the steering committee to preview the public meeting presentation and to discuss the following issues:
 - Potential key person interviewees; and,
 - Current project status – SC is on track and will present a DRAFT plan in April as per the project schedule; and,
 - Chris Johnston requested that SC place emphasis on the use of public rights-of-way in the presentation. SC modified the presentation as requested.
2. Chris Johnston began the public meeting by introducing the Steering Committee and the greenway consultant team of SC. He explained to the public that the purpose of the meeting was to generate awareness, gather recommendations, and report on the status of the project to date.
3. Brian Styche delivered a PowerPoint presentation outlining the following project elements and progress: project schedule; inventory and analysis - regional context, "green infrastructure", "gray infrastructure", site reconnaissance, summary of existing conditions, preliminary bikeway/trail alternatives and

selection criteria, bikeway classifications, and bikeway user groups. The meeting was then opened for questions and comments.

4. An attendee asked what the minimum required shoulder width should be for on-road bike routes. Brian S. stated that a 3' minimum shoulder width is recommended to accommodate such use, however advanced cyclists (group A) are generally comfortable with even less width.
5. Concerns were raised in regard to intersections that can be very dangerous during the peak traffic volume times (rush hour). It was suggested that SC analyze peak traffic volumes when considering proposed routes at potentially dangerous intersections. It was stated that commuter cyclists and not recreational cyclists would be using these bikeways during times of peak traffic.
6. A concern was raised regarding the emphasis of the presentation of trail types being based solely on bike trails, and does not include hiking trails. Brian S. stated that all trail types are being considered and that the hiking trail descriptions were included in the previous public presentation, but omitted from this presentation in the interest of time.
7. SC was commended by a member of the public for proposing bike routes on roads where there are existing wide shoulder conditions. It was suggested that SC utilize and expand upon routes currently being used by cyclists and that priorities for on and off-road routes be set so that areas of higher need are constructed first.
8. The idea was suggested to incorporate bike racks onto public buses to accommodate commuter cyclists in the event of inclement weather or other unforeseen circumstances. Brian S. suggested that Lower Paxton Township may want to approach the local transportation authority regarding this concept.
9. Concerns were raised about not designating paths as only to be used by pedestrians or cyclists. Brian S. stated that the use of each trail will need to be determined on a site specific basis, however where adequate trail width is permitted, combined pedestrian and bicycle trails would be possible.
10. An attendee expressed the desire for a hiking trail that would run from the Forest Hills Development through the newly proposed McNautin Tract connecting to the top of Blue Mountain. SC will add this suggested alignment alternative to those being studied.
11. The idea was expressed to incorporate elements of "growing greener" into the development of the township. This was interpreted as meaning that the Township should implement strategies to promote open space and contiguous green areas that could be connected by a network of bikeways and trails, and not the growing greener funding strategy established by the state government. Justin K. explained that the Township has recently written ordinances that promote this concept by requiring developers to allocate certain percentages of contiguous public open space based upon the square footage of proposed dwellings in new developments.
12. Concerns were raised regarding the utilization of sewer easements for bicycle or pedestrian trail use. Brian Luetchford stated that it would depend on the language of the specific easement agreement, although typically the easement may need to be renegotiated and approved by any affected property owners to provide for public trail use.

13. SC was made aware of an inactive logging road in the northwest portion of the Township that could be utilized as a possible trail connection to the Boyd Big Tree Preserve and Darlington Trail atop Blue Mountain. Brian L. explained that this road is currently situated on private property and that the Township is under negotiation with the landowners to make this road accessible to the public. SC will show a proposed trail in this location.
14. A member of the public commended the work of SC and called the preliminary trail alignments "a great plan".
15. Michael Floyd, a member of the Harrisburg Cycle Club stated that he is very interested in the development of trails and that his organization is interested in being a partner for the project.
16. Various comments were offered in regard to how the draft plan would be made accessible to the public. It was suggested that the draft plan could be linked to the LPT website, or it could be sent to members of the community via e-mail. SC typically submits print copies and/or PDF versions of the plan to the client for distribution at their own discretion.
17. It was suggested that a fourth category be added to the trail user groups which would contain provisions for "commuter" bicyclists. Brian S. stated that SC has not authored these group designations and the "commuters" would most likely fall under group "A" and a small percentage of group "B" cyclists. SC will consider potential commuter cyclists with the trail recommendations.
18. SC was made aware of an existing example of local trails that form a loop around Hershey area attractions. SC will investigate this example and determine if certain elements of this trail system could be incorporated in the LPT Greenway Plan.
19. Questions were posed about how the Township would promote the implementation of the trails once the plan is complete. Brian L. stated that the Township could promote this with the distribution of maps and the incorporation of signage for trails throughout the Township.
20. It was suggested that SC consult with the Capital Area Greenbelt Association to gather insight on how they acquired lands to facilitate the development of the Capitol Area Greenbelt.

Next Meeting: Committee Meeting #3, 6 PM & Public Meeting #3, 7:30 PM 4/3/07 for presentation of the DRAFT Greenway Plan.

Respectfully Submitted,
SIMONE COLLINS, INC.
LANDSCAPE ARCHITECTURE

A handwritten signature in black ink that reads "Justin M. Keller". The signature is written in a cursive, flowing style.

Justin M. Keller

Tuesday, February 6, 2007, 6:30 PM @ Lower Paxton Township Building

SIMONE COLLINS • LANDSCAPE ARCHITECTURE
511 OLD LANCASTER ROAD • BERWYN, PENNSYLVANIA 19312 (610) 889 0348

Lower Paxton Township Greenway Plan

Public Meeting #2

Tuesday, February 6, 2007, 7:30 PM @ Lower Paxton Township Building

NAME	ADDRESS	PHONE	EMAIL
Al + Alicia Mercik	4312 Continental Dr. 17112	657-8548	redwing01@hotmail.com
Tom Leaver	114 Littlefield Rd	652-7005	leaver_tom@jnet.net
Rebecca Corbett	6012 N. Main Lane	671-8744	greenepaonline.com
Tom + Peggy Hazzard	755 Harvest Drive	561-6030	hazz38@yahoo.com
Darwin Aured	2730 Woodman Ave	652-8120	AuredMuseum@Comcast.net
Dan Jerome	4603 Tanbury Rd	652 3035	
Edna Huttons	P.O. Box 6036, Htg. Pa.		hutch@paonline.com
Tim Pennington	118 Heat hen Ln HINGO	671-8582	Tim R@ezonline.com
Elizabeth Maudlin	1500 Vesta Dr H3C	652-8094	Sis m 55@comcast.net
Sydney Culbertson	1005 Seemore Drive	561-1678	
Edw C. FLEDDER	55 S. Main St	671-0487	EDFLEDD@VERIZON.COM
Keith H. Marks	210 Division St	566-2507	
Tim Murphy	1524 Pine Hollow Rd	657-9824	vinidelmurph@verizon.net
Cindy Hoegeman	4922 Bretney Dr	545-8945	chogeman@psu.edu
Brian Kaipe	6002 Conkstek Drive	671 237-4820	brian.kaipe@bipc.com
Lois Lippert	6481 Lytton Lane	558-8986	Lois@comyx.com
DALE KINGST	1745 Parkway West	671-1008	DALEKINGST@HOTMAIL.COM
Harold Rudy	3119 Eagle St.	545-9573	

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Lower Paxton Township Greenway Plan

Public Meeting #2

Tuesday, February 6, 2007, 7:30 PM @ Lower Paxton Township Building

NAME	ADDRESS	PHONE	EMAIL
PAUL MAKURATH	4581 SEQUOIA DR. B306	652-8633	pmakurath@state.pa.us
Deel Mahoney	1580 Vista Dr	652-0990	HHSMAHONEY@aol.com
Harold & Linda Hartman	6450 Whisper Willow Lane	652-7672	lhartman@verizon.net
MARILYN NEY	4925 JANELLE DR	545-5811	mneydatt.net
WATSON FISH	2023 SCOTT MEMORIAL	652-9367	WDFISH@COMCAST.NET
MICHAEL FLOYD (Phila's Blue Cross)	3658 RIVINGTON RD ELIZABETHTOWN 17022	533-4145	MICHAEL.FLOYD@CAPBLUESCROSS.COM
Chris Hess	420 Raduch Drive	671-1157	chris.hess@usa.com
LARRY WASSER	5822 BOENSLEY DRIVE	652-7147	LWASSER@BGCAPOL.COM
WAYNE SMITHENS	322 Kent Drive	651-0698	W-SMOKENT@VERIZON.NET
Gloria Grabenstien	4618 Albington Dr	652-1609	gloria.grabenstien@verizon.net
ERIC MILL IRON	6080 CHERYHILL RD, HRG 17111	652-0882	
Deb Hayes	5544 Edsel St. Hbg 17109	652-6226	ddphayes@juno.com
TOM GEORGE	709 ANAHEIM COURT HBG 17112	652-8280	
William Snyder	SIMONE COLLINS		
Justin Keller	"		

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4/17/07

Lower Paxton Township Greenway Plan

Lower Paxton Township, Dauphin County

SC#06016.10

Public Meeting #3 - Notes

Date/Time: 4/3/07, 7:30 PM

Location: Lower Paxton Township Municipal Building

In Attendance:

Natalie Hoffman - Lower Paxton Township Steering Committee (LPT)

Chris Johnston – LPT

Norm Lacasse – LPT

Brian Luetchford – LPT

Bob McCartney - LPT

Betsy Sibert – LPT

Priscilla StGlusko - LPT

Bill Weaver – LPT

William Collins - Simone Collins, Inc. (SC)

Justin Keller - SC

Brian Styche - SC

Public Attendees – (See Attached Sign-in Sheet)

Notes:

1. Prior to the public meeting, SC representatives met with members of the steering committee to preview the public meeting presentation and to discuss the following issues:
 - Greenway Plan Development – SC is on track and will present a Final plan in June as per the project schedule; and,
 - Implementation priorities - SC recommended that the Township utilize the area around the 5 schools in the southwest portion of the Township as a demonstration project that could serve as the model for greenway development throughout the township.
 - Conceptual costs / potential funding sources – SC suggested that LPT apply for a DCNR development grant due April 13. It was recognized that this application may have a reduced chance of being awarded this round. However, it will begin the process for the project and reference to this application will be helpful in the Transportation Enhancements application due in the fall of 2007.

2. Brian S. delivered a PowerPoint presentation outlining the following project elements and progress: project schedule; inventory and analysis - regional context, "green infrastructure", "gray infrastructure", site reconnaissance, summary of existing conditions, preliminary greenway plan, alignment alternatives, bikeway classifications, bikeway user groups, demonstration project area and implementation priorities, DRAFT greenway plan, roadway improvement projects, DRAFT plan recommendations, conceptual costs, potential funding sources, project partners, and implementation priorities. The meeting was then opened for questions and comments.
3. Victor Banks inquired as to whether maintenance costs were included in this study. Brian S. stated that generalized maintenance costs would be included in the master plan and a more detailed maintenance cost estimate will be developed during the design and engineering phase of the greenway plan and could vary with assistance from the public or non-profit organizations.
4. Victor B. asked if existing township land or existing sewer easements have been assessed for the implementation of the greenway trails. Brian S. explained that there are few contiguous pieces of township land that could provide a trail of considerable length. However, proposed trails are shown to connect to most Township park lands using existing rights of way to some Township open space parcels. He added that sewer easements would have to be renegotiated with individual property owners to allow for the accommodation of trails, and that a portion of sewer easement along Nyes Road from Union Deposit Road south to the Township boundary has been renegotiated to allow for this accommodation.
5. Victor B. noted that the Paxton Creek Watershed Plan has not been included in the review of relevant planning documents and wondered if this plan had been made available to SC. Brian S. stated that SC was not aware of this plan but would look into it and include it in the study if applicable.
6. Victor B. asked how this plan would generate money once it is implemented. Brian S. stated that recommendations for this plan are more focused on providing connections to local destinations for local residents. It is not anticipated that the proposed trail connections would draw people from outside the Township and thus generate tourism funds.
7. Edna Hutchins recommended that rolled curbing be required in new developments which would make it safer for cyclists riding on the shoulder of the road to access sidewalks. Also, suggested was the incorporation of directional signage into the greenway plan.
8. A concern was raised regarding changing speed limits on roads where on-road bikeways would be located. William C. stated that it would be up to the owner of the road to recommend a proposed speed change. He added that speed limits are determined by actual Penn DOT speed counts, which could ultimately determine that a higher speed limit might be warranted on some roads.
9. Several members of the public expressed concern with the proposed greenway alignments shown on the draft plan due to conflicts with their properties. William C. stated that the Township will not propose trails where private land owners do not want them. If a property is affected by a trail located on an adjacent property, the township should provide various methods including fencing, screens, and signage to mitigate potential problems. Furthermore, the Township should actively inform all property owners of their intention to develop proposed trails adjacent to their property. During the design and engineering phase of the

greenway plan concerns of the potentially affected property owners should be addressed and mitigated.

10. A concerned citizen asked that the township be more persistent about forcing developers of new subdivisions to implement off-road trails.
11. A member of the audience notified SC that the Harrisburg Bicycle Club might be able to post the draft plan on their website if the township is not able to post it on theirs.
12. Edna H. expressed a desire to see a greenway located along the entire length of Beaver Creek and a trail that would connect Central Dauphin High School to Wolfersberger Park and Koons Park.
13. Victor B. asked if SC had completed surveys to determine the needs and wants of the community. Chris J. stated that this information was gathered from the 2000 LPT Comprehensive Plan and was included in this study.
14. Attendees were encouraged to mark the provided plans with marker to illustrate any suggestions they would like to see incorporated into the plan for consideration. The LPT study committee will add their suggestions and revisions to the plan and mail the acetate overlay back to SC for consideration.

Next Meeting: Committee Meeting #4, 6/6/07, 6 PM for presentation of the Final Greenway Plan.

Respectfully Submitted,
SIMONE COLLINS, INC.
LANDSCAPE ARCHITECTURE

A handwritten signature in black ink that reads "Justin M. Keller". The signature is written in a cursive, flowing style.

Justin M. Keller

Lower Paxton Township Greenway Plan

Public Meeting #3

Tuesday, April 3, 2007, 7:30 PM @ Lower Paxton Township Building

NAME	ADDRESS	PHONE	EMAIL
ROD MURRAY	4020 EASY ST, HBG 6, 17109	243-9900 X240	Rmurrray@prohoffman.com
SIDOR BANKS	6551 Wytheville Hwy Po 17111	561-1592	familybanks@proffman.com
THYRA SPERRY	140 OAK HILL DRIVE BOILING SPRGS	258-5261	
Tom + Peggy Hazzard	755 Harvest Dr Hbg 17111	561-6030	
Todd Mixon	5860 Shore Place HBG 17109	671-1788	
Christine Johnson	6705 Conowing Rd.	558-9056	
Mrs. & Mr. Simone Boillon	6630 Conowing Rd. Hbg.	541-0854	
Harold Rudy	3119 Early St Hbg	545-9573	
Tina Murphy	1529 Pine Hollow Rd.	657-9824	
Sydney Johnson	1005 Seemore Dr	561-1678	nlac38@aim.com
Nick & Sandy Laren	213 Echo Glen Road	649-1628	
Jerome	4603 Danbury Rd	652-3035	
Brian Kripe	6002 Conestock Drive	671-8119	brian.kripe@bpc.com
WATSON FISHER	2023 SCOTT MEADOW CT	652-01367	WOPSTATE CONTRACT.NET
Tim Remington	116 Heathen Dr	671-8582	TimR@ezonline.com
REYNOLD GREEN	6112 ALMARI LANE	671-8744	GREEN@AOL.ME.COM
DALE KINGST	1745 Parkway West	671-1008	Dalajung@att.net
Chase Palleger	1300 Hampton Ave Hbg 17111	652-5867	
William S. Johnson	6705 Conowing Rd Hbg	558-9056	William.Johnson@proffman.com

SIMONE COLLINS • LANDSCAPE ARCHITECTURE

511 OLD LANCASTER ROAD • BERWTN, PENNSYLVANIA 19312 (610) 889 0348

Committee Meeting #3

Tuesday, April 3, 2007, 6:30 PM @ Lower Paxton Township Building

[illegible]

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7/19/07

Lower Paxton Township Greenway Plan

Lower Paxton Township, Dauphin County

SC#06016.10

Committee Meeting #4 - Notes

Date/Time: 7/10/07, 7:00 PM

Location: Lower Paxton Township Municipal Building

In Attendance: Chris Johnston – LPT
Norm Lacasse – LPT
Bob McCartney - LPT
Priscilla St. Glusko - LPT
William Collins - Simone Collins, Inc. (SC)
Brian Styche - SC

Notes:

1. William Collins gave a brief PowerPoint presentation summarizing the DRAFT Lower Paxton Township Greenway Plan and the initial early implementation project in the Colonial Park South / Union Deposit area for which the Township has submitted a DCNR Development Grant application in April '07, and will submit a Transportation Enhancements application in the autumn of '07.
2. It was asked if the Greenway Plan considered the trail alignments proposed in the Township's Comprehensive Plan. Brian Styche stated that the Comprehensive Plan trail alignments provided a good starting point, but many of the alignments were either eliminated or refined based on the criteria established by the committee and review of the more site-specific information afforded by the Township's GIS information, aerial photography, and site reconnaissance.
3. It was asked if the Greenway Plan could be adopted as part of the Township Comprehensive Plan. Bill Collins answered yes, the Greenway Plan could be adopted as an amendment to the Comprehensive Plan.
4. An attendee questioned whether or not there was any coordination with the consultants revising the township's Subdivision and Land Development Ordinance (SALDO). Brian S. stated that Simone Collins did review the proposed revised ordinance and offered comments and suggestions to the consultant, and that the consultant stated that the Greenway Plan would be referenced within the SALDO so that land developers would be notified of potential trail alignments desired by the Township.

5. After the presentation to the Board of Supervisors and Planning Commission members, SC met with the committee members to discuss potential revisions to the report.
6. Chris J. suggested that the CAT bus stop locations be added to the implementation area plans within the report.
7. SC will investigate the availability of adding a future land use plan recently developed by the Township as well as a more accurate version of the existing land use plan.
8. A recommendation will be added to the report advising the Township to use all municipal funds to leverage additional grant funding from state and federal sources.
9. SC will add text to the report regarding the health benefits that additional recreational and transportation resources can provide for a community. SC will add ideas about enlisting the school district in a public "greenway walkabout" and a greenway signage school art program. This text can also be used for grant applications associated with the project.
10. SC will add the DRAFT Subdivision and Land Development Ordinance comments that were provided to the Township into the final report appendix.

Respectfully Submitted,
SIMONE COLLINS, INC.
LANDSCAPE ARCHITECTURE

A handwritten signature in black ink, appearing to read "Brian E. Styche". The signature is fluid and cursive, with the first name "Brian" being more prominent.

Brian E. Styche, RLA
Associate



Summary - Key Person Interview Questions

State of bicycle and pedestrian mobility within the Township

- Poor to fair.

Existing hiking or biking trails / routes within the Township:

- Piketown Road
- Linglestown Road
- East portion of Jonestown Road
- Conway Road
- Pine Hill Road
- Devonshire Road (past Nyes Road)
- Pine Hill Road
- Union Deposit Road
- Darlington Trail

Residents feel most comfortable cycling on the following roads:

- Conway Road,
- Linglestown Road
- Locust Lane,
- Piketown Road
- Parkway East
- Goose Creek Road
- Roads near the golf course
- None, not many roads are safe to ride on

Roads that are the most dangerous for cycling:

- Roads closer to Harrisburg
- Jonestown Road
- Union Deposit & I83
- Nyes Road (during peak traffic times)

Intersections considered to be the most dangerous for pedestrians and bicyclists:

- Any intersections on Nyes Road, Linglestown Road, Union Deposit
Deveonshire Road, and Copperstone Road.
- Any along Jonestown Road
- Intersections closer to Harrisburg

Destinations should to be linked together by pedestrian or bicycle facilities:

- Schools
- Parks
- Friendship Center
- Capitol Area Greenbelt
- Libraries
- Pools (Koons Park)

'Protective' greenways to preserve specific sensitive environmental areas:

- Land Around the Darlington Trail
- Nyes Road Corridor
- Royers / Paxton Creek
- Beaver Creek
- Tributaries near Blue Mountain Parkway
- Contact Paxton Creek Watershed Association

Additional comments, suggestions, or ideas that you would like to discuss:

- Township should take advantage of preserving land in new developments
- Incorporate signage for pedestrians and motorists
- The Township invests too much money on active parks and ball fields
- Look into available funding through safe routes to school.
- Bus companies should provide bike racks on buses.
- Good PR will help promote trail initiative
- Trails uses aren't strictly recreational. Today cities are looking at how trails as transportation corridors
- Model for Non-Motorized Trail Guidelines

Justin Keller

From: Brian Styche
Sent: Thursday, January 11, 2007 1:54 PM
To: Justin Keller
Subject: FW: Lower Paxton greenways story

[for file](#)

From: DFishlock@patriot-news.com [mailto:DFishlock@patriot-news.com]
Sent: Tuesday, January 09, 2007 5:34 PM
To: Brian Styche
Subject: Lower Paxton greenways story

THE HARRISBURG PATRIOT

Page B03

01/09/07

Proposals sought for biking, walking trails

DIANA FISHLOCK

Of The Patriot-News

Tim Murphy wants Lower Paxton Twp. to develop bike trails.

"Then I wouldn't have to drive my wife to Hershey," he said at a meeting last month for township residents to give input on a proposed system of recreational trails.

"One of the biggest requests out of the 2004 comprehensive plan was 'We want places to ride bikes and walk not on roads,'" said Brian Luetchford, township parks and recreation department director. "So we're in the next step."

Township officials want to hear what residents would like: places to canoe, horseback ride, walk or bicycle, Luetchford said. Maybe residents want trails from one development to another, to schools, playgrounds, libraries or parks, he said.

Lower Paxton Twp. trails could potentially bridge existing and planned trails in Harrisburg, Susquehanna Twp., and 50 miles of trails in West Hanover Twp., residents said at the meeting.

Greenways can link parks, tie missing sidewalks together, promote ecotourism and nature study and enhance property values, said William Collins of landscape architecture firm Simone Collins of Berwyn, which is working with the township to develop possible greenway routes.

"We have \$25,000 from the state Department of Conservation and Natural Resources and \$25,000 from township," Luetchford said. "That \$50,000 will provide us with a complete greenway plan. The township and residents can prioritize the trails, then seek grants to help build them," he said.

Community involvement is the most important part of the process, Collins said.

"Not all ideas will make it to the final plan," Collins told 20 people who attended the December public input meeting. "Not all are feasible."

He is researching and preparing maps of open space and features in the township. The firm will prepare cost estimates for each segment of the trail, develop a plan and create a financial strategy, Collins said.

"There's still a large amount of green space out there if you know where to look for it," but time and open space for potential trails have been lost," Edna Hutchins said at the meeting.

"The township can start to change zoning so when developments come in, they're already thinking, 'How can I meet the trail demand?'" Collins said. "The new developments can be more trail friendly than the old neighborhoods."

DIANA **FISHLOCK** : 255-8251 or dfishlock@patriot-news.com

INFOBOX:

AIR YOUR VIEWS WHAT: Lower Paxton Twp. is seeking public opinion on a proposed network of trails that would provide links for people to walk and ride bikes between residential areas, regional trails, parks, open space and other destinations. WHEN: 7:30 p.m. Feb. 6 and April 3. WHERE: township building, 425 Prince St.

May 8, 2007

Mr. Brian W. Luetchford
Parks and Recreation Director
Lower Paxton Township
5000 Commons Drive
Harrisburg, PA 17112

Dear Brian:

Brian Dickson and I have both reviewed your April 10, 2007 letter that discussed Lower Paxton Township's proposed bicycle and pedestrian connections in its draft Greenway Plan. In general, we felt the proposed non-motorized connections shown on the Greenway Plan maps contained much of the kind of information that should be considered when developing a municipal bicycle/pedestrian network. However, we did have a few comments about the information shown on the maps, including one major comment about "Destinations" contained in the plan. The TCRPC staff comments include:

- 1) In addition to the schools and community parks shown on one of the plan maps as destinations, TCRPC staff believes commercial retail businesses should also be shown on the plan as destinations. Many people in close proximity to commercial retail businesses will bike or walk to these establishments, rather than using an automobile to reach them. This is true with both large-scale retail businesses, such as shopping malls and centers, and small-scale retail businesses, such as convenience stores. Not all commercial retail businesses need to be considered as destinations, because some of them either generate a very low volume of non-motorized traffic or they sell products where using an automobile to transport the product is necessary. However, there are many, existing commercial retail businesses that currently generate a significant amount of bicycle and/or pedestrian traffic, and the locations of those businesses should be shown in the Greenway Plan maps.

The HATS Bicycle/Pedestrian Task Force has identified commercial retail businesses as locations to include on its own plan maps, though it has not yet inventoried the significant retail businesses within the HATS area. Including these businesses in the township plan would both increase planning consistency between the region's efforts and the municipality's efforts and also help the HATS Task Force identify appropriate locations within Lower Paxton Township.

- 2) More bicycle and pedestrian connections should be shown to existing transit routes/stops, especially at commercial retail businesses. If adequate bicycle/pedestrian facilities are available to get to and at transit stops, bicyclists and pedestrians will be more likely to use public transit. These facilities will also encourage greater non-motorized transportation usage.
- 3) Consideration should be given for designating part or all of Houcks Road/Dartmouth Avenue/Scenery Drive/East Park Drive between Prince Street and the Swatara Township

Line as an On-Road Bikeway Connection or Cycling Route. There is a significant population that lives near this road, especially between Union Deposit Road and Prince Street, and many of these people will use the road for trips heading towards the US 22 corridor.

Also, it may be appropriate to identify part or all of Page Road and/or Lyters Lane as Bikeway Connections or Cycling Routes. Both of these roads are key connecting roads in the southern portion of Lower Paxton Township and are experiencing increased residential growth.

Thank you for the opportunity to provide comments on the maps within the Lower Paxton Township Greenway Plan.

Sincerely,

Carl L. (Chip) Millard III
Transportation Planner

04/04/07 WED 15:53 FAX 7177054830

DEP SC REGION

April 4, 2007

Brian Latchford, Director
Lower Paxton Twp. Parks & Recreation

RE: Trail system within LPT

Dear Brian,

I hoped to attend the meeting regarding the proposed set of trails connecting various portions of the Township, but I could not attend. I am fully in favor of such a trail system within the Township. I think it would greatly add to the quality of life to have a system that would connect the many neighborhoods and stores within the Township. I think such a system would encourage people to get out of their vehicles and subsequently walk, bicycle or skate to their nearby destinations. It would have many secondary benefits such as reducing traffic on our roads and also reducing vehicle air pollution. Thanks for giving me the opportunity to comment on this proposal.

Sincerely,



David M. Hrobuchak
4110 Lisa Drive
LPT resident

Justin Keller

From: Edna L. H. Hutchins [hutch@paonline.com]
Sent: Tuesday, March 13, 2007 10:02 PM
To: Justin Keller
Subject: Re: Lower Paxton Greenway

Mr. Keller:

I reviewed my notes from the last meeting and the first one that I attended at the Lower Paxton Greenway meeting.

Here are a few suggestions that I forgot to mention:

1. One of the participants at the first meeting proposed reuse of the Township land - fill as a "feeder point", or a trail head between new and existing housing developments to give local people off road walking/biking locations. Is this being consider?

2. After driving around this past weekend, I remembered the new developments that are popping up around farmland..Where feasible in the south eastern quadrant of our township, it would be nice to have trails established around surrounding green space to link to segments on Nye's Road.

When you asked what roadways would be good to start out new & average riders (I'll assume you mean existing roadways)...I drove around to search for the correct road names. I believe side roads going through quiet neighborhoods provide a nice ride for the average rider. I'm more familiar with the Northern section of the township, since I ride more within that area.

Here are a few locations:

MacIntosh Road that leads past Windmere Farms. As MacIntosh leads to Colonial Rd., a neighborhood exists on the other side of the street where a rider can wind through the curbside development (pass a small pond) and drop down onto Goosevalley Road. I wouldn't go straight across from MacIntosh due to the blind spot to traffic; however if one weaved through the side street parallel to MacIntosh Rd. ...a safe crossing on Colonial Rd. would exist near the church north of the MacIntosh entrance. Goosevalley Road runs parallel to a creek and connects to the backside of a golf course. By weaving through back roads perpendicular to the golf course, one can reach the middle school/elementary and eventually connect up with Kuhn's park.

A possible new trail connection from Blue Meadow's Farm development to Linglestown village would provide an easy access for bikers/walkers to visit the village. Another new trail from the back end of that development could connect to the church property on Parkway East /Linglestown road which would allow the bike trail to come out at the church entrance off Linglestown road. Left turn out of the church entrance, and a immediate right on the next road would lead the riders to the township's new future park (80 acres).

Sometimes just having bike trail signs marking a calm road that would connect riders/runners/walkers to park destinations, schools, libraries, and stores would be nice.

Crossing should be marked clearly...with bright diagonal strips between the cross walks. Islands protruding outward (to narrow the roadway to slow down traffic) to enable safe crossings over a busy road.

Similar to the blind person's signal of a tweeting bird to cross an intersection...perhaps this same idea could be installed to accomodate a rider wishing to cross a heavily used intersection.

Sincerely,
Edna Hutchins

----- Original Message -----

From: [Justin Keller](#)

To: hutch@paonline.com

Cc: [Brian Styche](#)

Sent: Monday, February 19, 2007 3:02 PM

Subject: Lower Paxton Greenway

Dear Edna,

The steering committee for the Lower Paxton Township Greenway Project has identified you as a potential key person to interview. The objective of the interview is to gather your point of view on how the proposed Greenway could best serve you and members of the community. We can also address any concerns, suggestions, or ideas that you might have at this time. If you are willing to participate, we ask that you provide us with your phone number and a time of day when you would be available to talk. We look forward to hearing from you soon.

Sincerely,
Justin M. Keller

jkeller@simonecollins.com

SIMONE COLLINS
Landscape Architecture

511 Old Lancaster Road
Berwyn, PA 19312
610 889 0348 x17
610 889 7521 fax
www.simonecollins.com

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For more information please visit <http://www.messagelabs.com/email>

5/29/2007

Justin Keller

From: Edna L. H. Hutchins [hutch@paonline.com]
Sent: Wednesday, February 28, 2007 7:45 PM
To: Justin Keller
Subject: Re: Lower Paxton Greenway

Justin...

Thanks for the opportunity to provide input.

My only concern is that these multi- use trails may never happen...which would be a great lost to the township residents.

Here is the website for the Model Non-Motorized Trail Guidelines:

www.ibike.org/education/trail-ordinance.htm

Try to have bus companies provide bike racks on the back of their buses....could be used to transport bikes to trails, ride home if bike breaks down, riding to work & returning home via the bus or vice versa, or if weather problems arise.

By using the township newsletter, the township can educate the residents about possible/available multi-use trails and the benefits that the trails would provide. Good PR to help promote trail access in different areas within the township...encourage businesses to participate in the project.

Trails uses aren't strictly recreational. Today cities are looking at how trails can be used as transportation corridors, located in dense residential areas where they connect people to places they want to go. The shift is an acknowledgment that trails must integrate with everyday lives. Otherwise they serve a relatively small constituency of Lycra-clad cycling enthusiasts and suburbanites out for Saturday fun or exercise rides, which begin by driving to the trail..

I'll locate the contact to the Paxton Watershed and email it to you later in the week.

Thanks for trying to make multi-purpose trails come alive in our township..."Build it and they will come".

Respectfully,
 Edna Hutchins

----- Original Message -----

From: Justin Keller
To: hutch@paonline.com
Cc: [Brian Styche](#)
Sent: Monday, February 19, 2007 3:02 PM
Subject: Lower Paxton Greenway

Dear Edna,

The steering committee for the Lower Paxton Township Greenway Project has identified you as a potential key person to interview. The objective of the interview is to gather your point of view on how the proposed Greenway could best serve you and members of the community. We can also address any concerns, suggestions, or ideas that you might have at this time. If you are willing to participate, we ask that you provide us with your phone number and a time of day when you would be available to talk. We look forward to hearing from you soon.

Sincerely,
 Justin M. Keller

5/29/2007

FEB 26 2007

Darwin Aurand

2730 Woodrow Avenue

Harrisburg, Pennsylvania 17112

February 22, 2007

**Simone Collins, Landscape Architecture
Mr. Brian E. Styche, RLA, ASLA, Associate
511 Old Lancaster Road
Berwyn, Pennsylvania 19312**

Dear Mr. Styche:

As a follow-up to the public meeting convened on February 6, regarding preliminary trails and Greenway Plan, I offer a few suggestions regarding reconsideration of some hiking trails in the Forest Hills, Centennial Acres, and soon-to-be-developed McNaughton tract (Autumn Oaks previously Asper Woods) that could intersect with the power line right of way as proposed in the northwestern quadrant of your plan. Specifically, since the McNaughton development plan has not yet been presented to the township since the late 1990s, I am suggesting that the township consider an objective to retain some tree-line/trail buffer between the current Forest Hills Phases 6-7-8 and the adjacent McNaughton tract (Reference attached plan subset). This would provide for wildlife and hiking trail corridor relief, and retain some high tree buffer for shrinking wood thrush and other native bird species losing habitat in this area. The current Centennial Acres and Forest Hills developments, including the future McNaughton development residents, would directly benefit by having access to the top of the mountain and the power line right-of-way, which presently does not exist from this immediate locale.

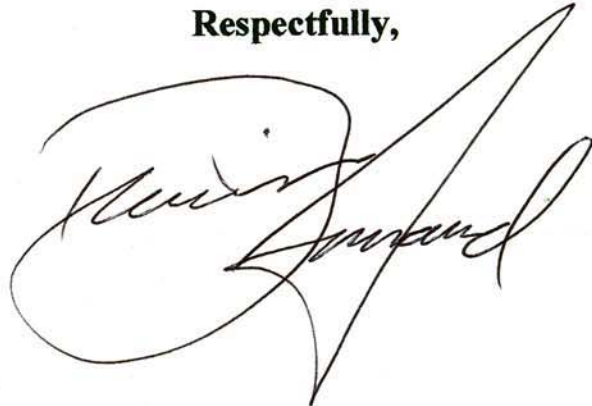
I realize that this request might not represent the key recreational objective of your study for biking and multi-use trails, but the Blue Mountain setting represents some of the last remaining mountain habitat that has not been previously cleared for housing developments in this quadrant of the township.

In a letter authored to Mr. Wm. Hawk and all township supervisors, September 3, 2003, and signed/endorsed by over twenty-five township residents, including Dr. Norman LaCasse, L.P. Township Shade Tree Director, we requested that future township development in this area consider the following objectives:

- **Would it be possible to have the developer(s) consider a large undeveloped wooded corridor between the developments up the mountain that could serve both hikers/recreational users and wildlife to provide access to the top of the mountain (reference enclosure); and**
- **Negotiate with the developer(s) to provide some natural wooded 'common areas' that would provide an aesthetic value to their development, maintain natural habitat for wildlife, and also provide for some 'breathing space' or buffers of sufficient depth between the developments.**

In closing, I support the purpose and foresight the township has entrusted your firm in recommending some immediate and future planning goals. The Blue Mountain represents one of the last areas in the township where some conservation and preservation of mountain land for recreational and wildlife habitat remains. We should make every effort to preserve some of this habitat before this entire area is land-locked to housing development. I am available at your discretion to discuss this request, or could be reached at 214-0653 daytime, or 652-8120 residence.

Respectfully,

A handwritten signature in black ink, appearing to read "E. Hurley", written in a cursive style with a large loop at the end.

Enclosure: Subset of Simone Collins Greenway Plan Map, 02-2007

**cc: B. Leutchford, L.P. Parks and Recreation
Wm. Hawk, Chairman, L. P. Township Supervisors
E. Hurley, SWAN**

DAUPHIN COUNTY PLANNING COMMISSION

DAUPHIN COUNTY COURTHOUSE - HARRISBURG, PENNSYLVANIA 17101

STAFF OFFICE
112 Market Street, 2nd Floor
Harrisburg, Pennsylvania 17101-2015
Telephone 717-234-2639
Fax 717-234-4058
e-mail: planning@tcrpc-pa.org

March 3, 2008

Mr. Brian W. Luetchford
Parks and Recreation Director
Lower Paxton Township
5000 Commons Drive
Harrisburg, PA 17112

Dear Brian:

The Dauphin County Planning Commission has reviewed the draft Lower Paxton Township Greenway Plan. It is understood the Greenway Plan is designed to both augment and replace a portion of the existing township comprehensive plan, specifically the improvements proposed on Map 13 in the comprehensive plan. The comments below are meant to address both the written content and the proposed bicycle and pedestrian improvements mapped in the Greenway Plan.

After reviewing the draft Greenway Plan, the DCPC offers the following comments:

- 1) The proposed township and neighborhood on and off-road bikeway and walkway connections in the Greenway Plan are largely consistent with the Bicycle-Pedestrian Conceptual Network map in the township comprehensive plan. Many of the changes made from the 2004 comprehensive plan to the Greenway Plan make sense in context of township needs. However, some of the routes included in the 2004 comprehensive plan that are not included in the Greenway Plan perhaps should be included on the Plan. More specifically, the Springcreek Road/Lyters Lane/Conway Road corridor, the Devonshire Road/Fairmount Drive corridor, the Earl Drive/Northside Elementary School corridor, the Goose Valley Road corridor, and the McIntosh Road corridor are all excluded from the Greenway Plan but were included in the comprehensive plan. All of these corridors have significant current or future populations, based on approved plans, and most of these corridors also connect to/from destinations identified on the Greenway Plan. It is unclear if these corridors are priority corridors but were not identified in the Greenway Plan because the need for improvements on these corridors is low. Nonetheless, the township should consider identifying some or all corridors in the Greenway Plan.
- 2) The Greenway Plan identifies essentially all major shopping centers within the township, plus a few others just outside the township but near the township border, such as the retail facilities along Union Deposit Road in Susquehanna Township. However, ½ mile walking radii are not shown for all the shopping centers. The Commission believes all significant-sized shopping centers should be classified as destinations, similar to how

schools and recreational facilities are shown on the draft Greenway Plan as destinations. Not all of the shopping centers shown on the Greenway Plan need to have ½ mile walking radii areas, but many of them should be designated as destinations.

- 3) On Page 38, the Implementation section for the Northwest section of the township indicates Jonestown Road is the main east-west roadway in this portion of the township. The plan should indicate Linglestown Road is the main east-west roadway in this section of the township.
- 4) On Page 40, in the "Potential Funding Sources" section, the second subheading discusses TEA-21 Enhancements (SAFETEA-LU). This heading and the accompanying text should be changed to say only SAFETEA-LU. The TEA-21 federal legislation expired in 2003 and was replaced by the SAFETEA-LU federal legislation.
- 5) Pages 40-41 of the Greenway Plan discuss the Transportation Enhancements (TE), Home Town Streets (HTS), and Safe Routes to School (SRTS) Programs. The DCPC would like to note many of the proposed bikeway/walkway improvements in the Greenway Plan are eligible for one or more of the programs, but there are limitations as to what areas would be eligible for the HTS or SRTS Programs. More specifically, only bicycle/pedestrian improvements in the village of Linglestown area would likely be eligible for the HTS Program, and only improvements near one or more of the township's schools, particularly the elementary and/or middle schools, would be eligible for the SRTS Program. The township will want to try to avoid applying for HTS or SRTS Program funding in areas not eligible for those types of funding.

In addition to program eligibility, the township should be aware the Harrisburg Area Transportation Study (HATS) has typically received a little more than \$2 million for the entire region for a two year period in the TE/HTS/SRTS Program. Because funding for the program is limited, HATS generally does not like to fund projects that cost over \$1 million or somewhat less than that amount. Should HATS receive a large request for funding from Lower Paxton Township to fund the proposed Greenway Plan improvements, it is likely HATS will recommend the project be considered by PennDOT for statewide, discretionary funds from the Secretary of Transportation's discretionary reserve, provided the proposed project(s) is thoroughly scoped with reasonably accurate cost and timeline estimates. Finally, if the township's project(s) would be selected to receive TE/HTS/SRTS funding, it would be up to the township to work with PennDOT District 8-0 staff to ensure the project progresses in a timely manner.

- 6) Pages 43-44 of the Greenway Plan discuss PennDOT funding through its Betterment Program. The description of the Betterment Program in the plan is reasonably accurate. It should be noted however the maintenance funds for this program have often not been used for shoulder improvements that would benefit bicycle/pedestrian users. Should the township pursue trying to fund some of the desired Greenway Plan improvements through the Betterment Program, the township will need to work closely with District 8-0 staff and clearly state its desired betterment-related needs to better ensure the desired on-

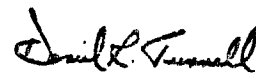
road bikeway and walkway improvements are implemented in the manner desired by the township.

In general, the DCPC supports the recommendations made in the Lower Paxton Township Greenway Plan, provided the comments made above are considered by the township.

Please be reminded that copies of the adopted comprehensive plan need to be forwarded to the County Planning Commission with 30 days of enactment, as required by Section 306(b) of the Pennsylvania Municipalities Planning Code. If there are any questions about this review, please contact Chip Millard at the DCPC office.

Thank you for the opportunity to review the draft Lower Paxton Township Greenway Plan.

Sincerely,

A handwritten signature in black ink, appearing to read "Daniel R. Tunnell". The signature is fluid and cursive, with the first name being the most prominent.

Daniel R. Tunnell
Chairman



Swatara Township

599 EISENHOWER BLVD.
HARRISBURG, PA 17111-2397
717-564-2551
FAX 717-564-5895
swataratownship@swataratwp.com

January 22, 2008

Mr. Brian Luetchford
Parks and Recreation Director
Lower Paxton Township
425 Prince Street
Harrisburg, PA 17109

Dear Brian:

I have reviewed the Lower Paxton Greenway Plan which will amend your 2008 comprehensive plan. I was very impressed with the thoroughness of your plans and the amount of detail that was included. I find your plan to be well thought out and wish you the best in implementing the various provisions.

Sincerely,

A handwritten signature in black ink, appearing to read "PKC", written over a horizontal line.

Paul K. Cornell
Administrator

PKC/ka

cc: George Wolfe, Manager
Lower Paxton Township

WEST HANOVER TOWNSHIP



7171 Allentown Boulevard, Harrisburg, PA 17112 • Telephone (717) 652-4841 • FAX (717) 652-8158

March 14, 2008

Lower Paxton Township
Park and Recreation
ATTN: Mr. Brian Luetchford, Director
5000 Commons Drive
Harrisburg, PA 17112

Re: Lower Paxton Township Greenway Plan

Dear Mr. Luetchford *Brian*

On behalf of the West Hanover Township Board of Supervisors, I thank you for the opportunity to review and comment on your recent Greenway Plan project. As you may know, West Hanover Township utilizes a combination of environmental protection overlay zoning districts with a Parks & Recreation Comprehensive Plan and a Comprehensive Pedestrian Pathway Plan to establish and define its policy directions and the logical opportunities for developers to help create the type of greenways being more specifically planned in Lower Paxton Township. Based on our staff review, the Greenway Plan Recommendations and Implementation Priorities appear to be in line with West Hanover Township priorities and goals.

The use of parks and schools as hubs or connection points for pedestrian paths or bikeways is common to both Townships. The protection of riparian corridors has long been the direction of West Hanover Township under its mandatory open space protection standards and overlay zoning requirements. Fostering connectivity between natural corridors as well as pathways a high priority is also a common goal between the Townships.

As Beaver Creek is the common border between Lower Paxton Township and West Hanover Township, it is logical for both municipalities to include logical pedestrian connections between the municipalities. We have already identified the Beaver Creek corridor as a pedestrian pathway that can lead northward to the High School, or southward towards the commercial areas of Route 22.

Lower Paxton Township is to be commended for planning its greenways and updating and reviving alternative methods of transportation for the welfare of all. We wish you all the success in the implementation of this plan.

Sincerely,

Michael D. Rimer
Michael D. Rimer
Township Manager

Cc: Board of Supervisors
File

Justin Keller

From: Brian Styche
Sent: Thursday, February 01, 2007 12:52 PM
To: Justin Keller
Subject: FW: LPT-SALDO Comments

From: Brian Luetchford [mailto:bluetchford@lowerpaxton-pa.gov]
Sent: Thursday, February 01, 2007 12:53 PM
To: Brian Styche
Subject: RE: LPT-SALDO Comments

Thanks Brian. Sorry about the hurry-up to get back to me. Too many appointments. I will pass along your recommendations. Thanks again for the input.

Brian

From: Brian Styche [mailto:bstyche@simonecollins.com]
Sent: Thursday, February 01, 2007 12:05 PM
To: Brian Luetchford
Cc: Justin Keller
Subject: LPT-SALDO Comments

Brian,

We offer the following comments in regard to the draft Subdivision and Land Development Ordinance:

180-508 (p. 5-25 -27) Sidewalks and Pedestrian Pathways

C.2 Longitudinal slopes are to be accessible to pedestrians of all types

C.3 Pathways must be designed to provide required handicapped accessibility along the pathway

- **This requirement may be too limiting considering the steep topography of the slopes and may deter developers from implementing trails in their development , especially if the Township requires 100% accessibility. In our conversations with Lori, she had suggested that the trails components of some plans were eliminated because the developer could not reasonably or cost effectively provide 100% accessibility. The NPS' McDade Trail through the Delaware Water Gap Recreation Area is not 100% accessible.**

180-514.1 (p. 5-35 -38) Design Standards In Floodplains

B. Sentence 2

- **Fifty (50) should be changed to fifty (50') feet**

E. First sentence. Building sites for structures shall not be permitted in the floodway area or district.

- **It is unclear whether or not this applies to trails. The township should make a clear exception for trails in the floodway area or district.**

180-522. (p. 5-52-55) Dedication of Recreation Land

A.2 States that the applicant is to maintain compliance with the Township's recreation plan.

- **No such plan exists. The Township should actually reference that Recreation Resource Plan found in the Comprehensive Plan.**

B.1.

- **The statement "including public trails", could be added to the end of the sentence.**

D.1. Requires a minimum area of 2,500 square feet per dwelling unit to be set aside for public recreational use.

- **This requirement could potentially promote the development of larger houses and severely restrict the development of smaller houses or mixed use developments. Considering the current percentage of developed land in the Township, we suggest that this requirement be changed so that dedication of public land be based on a percentage of dwelling unit floor area, and should actually require that larger houses set aside larger portions of land for public recreational use.**

E.3. States that recreation areas not include utility easements or rights of ways.

- **We suggest that the Township revise this requirement due to the fact that utility easements and rights of ways can provide ample opportunities to connect to a township wide trail network. It is understood that the Township should require that areas set aside for recreation be aesthetically pleasing; however, we feel that this requirement is inhibitive of an interconnected Township wide trail system. It might be suggested that no more than a certain percentage of recreational lands include utility easements or rights of ways , or that they be considered on a site specific basis .**

I hope this helps. Please let us know if you have any questions.

Sincerely,

Brian E. Styche, RLA

TRAIL EASEMENT AGREEMENT

THIS TRAIL EASEMENT AGREEMENT ("this Agreement") dated as of _____ (the "Agreement Date") is by and between _____ ("the undersigned Owner or Owners") and _____ (the "Holder").

Article I. Background

1.01 Property

The undersigned Owner or Owners are the sole owners in fee simple of the property described in Exhibit "A" (the "Property"). The Property is also described as:

Street Address:

Municipality:

Parcel Identifier:

County:

State: Pennsylvania

1.02 Easement Objectives

The purpose of this Agreement (the "Easement Objectives") is to establish an Easement Area (defined below) within the Property in which a trail may be established and used by the general public for outdoor recreation and education (the "Trail").

1.03 Easement Area; Easement Plan

The portions of the Property that are the subject of this Agreement (collectively, the "Easement Area") are shown on the plan attached as Exhibit "B" (the "Easement Plan"). The Easement Area is also described as [ADD DESCRIPTION, EG., a twenty-foot wide strip of land running from the northwest border to the southern border of the Property.]

1.04 Consideration

The undersigned Owner or Owners acknowledge receipt of the sum of \$1.00 in consideration of the grant of easement to Holder under this Agreement.

Article II. Grant of Easement

2.01 Grant of Easement and Right-of-Way

By signing this Agreement and unconditionally delivering it to Holder, the undersigned Owner or Owners, intending to be legally bound, grant and convey to Holder an exclusive easement and right-of-way over, under, and across the Easement Area in perpetuity, for the purposes described in the Easement Objectives, subject to the limitations and reserved rights of Owners set forth in this Article.

2.02 Limitation on Activities and Uses

(a) Use

Access to the Easement Area by the general public is subject to the rules, regulations and/or limitations established by Holder to regulate Trail activities (the "Access Restrictions"). Included in the Access

Restrictions is a prohibition on the use of motorized vehicles except in the case of emergency or in connection with the construction, maintenance, or patrol of the Easement Area or by persons who need to use motor-driven wheelchairs.

(b) Disturbance

Soil, rock, and vegetative resources may be removed, cut or otherwise disturbed only to the extent reasonably necessary to accommodate construction, maintenance and patrol of the Trail and maintenance of access to the Easement Area. When vegetative cover is removed, it must be restored as soon as reasonably feasible by replanting with grasses or native species of trees, shrubs, and plant materials.

(c) Construction

Prior to commencing initial construction of the Trail or relocation of more than 200 linear feet of the Trail within the Easement Area, Holder must:

- (i) Provide Owners with at least 30 days notice.
- (ii) Obtain certificates evidencing liability insurance coverage with respect to Holder and all Persons entering the Property for the purpose of construction.
- (iii) Obtain, at Holder's cost and expense, all permits and approvals required for the construction.

2.03 Limitation on Improvements

Improvements within the Easement Area are limited to the following:

(a) Trail

- (i) The Trail, including steps and railings and other trail surface structures as well as bridges and culverts for traversing wet areas within the Easement Area.
- (ii) The Trail may not exceed ____ (##) feet in width.
- (iii) The Trail may be covered, if at all, by wood chips, gravel, or other porous surface, or paved or covered with other material as may be required by applicable law.

(b) Accessory Facilities

- (i) A reasonable number of benches, picnic tables, and wastebaskets.
- (ii) Signs to mark the Trail; to provide information regarding applicable time, place, and manner restrictions; to indicate the interest of Holder and Beneficiaries in the Easement Area; and for interpretive purposes.
- (iii) Fencing, gates and barriers to control access.

2.04 Reserved Rights of Owners

The easement granted to Holder under this Agreement is exclusive. This means that Owners have no rights to enter or use the Easement Area except to exercise rights accorded to the general public and except as provided in this Article. Owners reserve the following rights:

(a) Owner Access

Owners may enter the Easement Area by foot at any time except when construction and maintenance activities could present a danger.

(b) Mitigating Risk

Owners may cut trees or otherwise disturb resources only to the extent reasonably prudent to remove or mitigate against an unreasonable risk of harm to Persons on or about the Easement Area; however, Owners do not assume any responsibility or liability to the general public for failing to do so.

(c) Hunting

Owners may close public access to the Easement Area for public safety reasons from the Monday after Thanksgiving through the month of December so as to reasonably accommodate hunting by or under control of Owners within the Easement Area.

(d) Owners' Enforcement Rights

Owners reserve the right to take any action permitted under law to remove from the Property persons entering the Easement Area for purposes other than set forth in the grant of public access under this Article.

2.05 Rights of Beneficiaries

The Persons identified below are beneficiaries of this Agreement (each, a "Beneficiary") and have the right to exercise the same rights, powers and privileges as are vested in the Holder under this Agreement:

- As of the Agreement Date, there are no Beneficiaries of this Agreement.

Article III. Other Legal Matters

3.01 Enforcement

If Holder determines that this Agreement is being or has been violated then Holder may, in addition to other remedies available at law or in equity, do any one or more of the following:

(a) Injunctive Relief

Seek injunctive relief to specifically enforce the terms of this Agreement; to restrain present or future violations of this Agreement; and/or to compel restoration of recreational resources destroyed or altered as a result of the violation.

(b) Self Help

Enter the Property to remove any barrier to the access provided under this Agreement and do such other things as are reasonably necessary to protect and preserve the rights of Holder under this Agreement.

3.02 Warranty

The undersigned Owner or Owners warrant to Holder that:

(a) Liens and Subordination

The Easement Area is, as of the Agreement Date, free and clear of all Liens or, if it is not, that Owners have obtained and attached to this Agreement as an exhibit the legally binding subordination of any mortgage, lien, or other encumbrance affecting the Easement Area as of the Agreement Date.

(b) Existing Agreements

No one has the legally enforceable right (for example, under a lease, easement or right-of-way agreement in existence as of the Agreement Date) to use the Easement Area for purposes inconsistent with Easement Objectives or to prevent Holder from exercising any one or more of its rights under this Agreement.

(c) Hazardous Materials

To the best of Owner's knowledge, the Easement Area is not contaminated with materials identified as hazardous or toxic under applicable law (collectively, "Hazardous Materials") and no Hazardous Materials have been stored or generated within the Easement Area.

3.03 No Duty or Expense by Owners

Owners are not responsible for construction or maintenance of improvements in the Easement Area except for improvements resulting from Owners exercising a reserved right. Holder must promptly pay as and when due all costs and expenses incurred in connection with construction and maintenance of improvements in the Easement Area.

3.04 No Charge for Access

No Person is permitted to charge a fee for access to or use of the Easement Area.

3.05 Immunity under Applicable Law

Nothing in this Agreement limits the ability of Owners, Holder or any Beneficiary to avail itself of the protections offered by any applicable law affording immunity to Owners, Holder or any Beneficiary including, to the extent applicable, the Recreational Use of Land and Water Act, Act of February 2, 1966, P.L. (1965) 1860, No. 586, as amended, 68 P.S. §477-1 *et seq.* (as may be amended from time to time).

3.06 Responsibility for Losses and Litigation Expenses

(a) Public Access Claims; Owner Responsibility Claims

If a claim for any Loss for personal injury or property damage occurring within the Easement Area after the Agreement Date (a "Public Access Claim") is asserted against either Owners or Holder, or both, it is anticipated that they will assert such defenses (including immunity under the Recreational Use of Land and Water Act) as are available to them under applicable law. The phrase "Public Access Claim" excludes all claims (collectively, "Owner Responsibility Claims") for Losses and Litigation Expenses arising from, relating to or associated with (i) personal injury or property damage occurring prior to the Agreement Date; (ii) activities or uses engaged in by Owners, their family members, contractors, agents, employees, tenants and invitees or anyone else entering the Property by, through or under the express or

implied invitation of any of the foregoing; or (iii) structures, facilities and improvements within the Easement Area (other than improvements installed by Holder).

(b) Indemnity

If immunity from any Public Access Claim is for any reason unavailable to Owners, Holder agrees to indemnify, defend and hold Owners harmless from any Loss or Litigation Expense if and to the extent arising from a Public Access Claim. Owner agrees to indemnify, defend and hold the Holder harmless from any Loss or Litigation Expense if and to the extent arising from an Owner Responsibility Claim.

(c) Loss; Litigation Expense

- (i) The term "Loss" means any liability, loss, claim, settlement payment, cost and expense, interest, award, judgment, damages (including punitive damages), diminution in value, fines, fees and penalties or other charge other than a Litigation Expense.
- (ii) The term "Litigation Expense" means any court filing fee, court cost, arbitration fee or cost, witness fee and each other fee and cost of investigating and defending or asserting any claim of violation or for indemnification under this Agreement including in each case, attorneys' fees, other professionals' fees and disbursements.

Article IV. Miscellaneous

4.01 Governing Law

The laws of the Commonwealth of Pennsylvania govern this Agreement.

4.02 Binding Agreement

This Agreement is a servitude running with the land binding upon the undersigned Owner or Owners and, upon recordation in the Public Records, all subsequent Owners of the Easement Area or any portion of the Easement Area are bound by its terms whether or not the Owners had actual notice of this Agreement and whether or not the deed of transfer specifically referred to the transfer being under and subject to this Agreement. Subject to such limitations (if any) on Holder's right to assign as may be set forth in this Agreement, this Agreement binds and benefits Owners and Holder and their respective personal representatives, successors and assigns.

4.03 Definition and Interpretation of Capitalized and Other Terms

The following terms, whenever used in this Agreement, are to be interpreted as follows:

- (i) "Owners" means the undersigned Owner or Owners and all Persons after them who hold any interest in the Easement Area.
- (ii) "Person" means an individual, organization, trust, or other entity.
- (iii) "Public Records" means the public records of the office for the recording of deeds in and for the county in which the Easement Area is located.
- (iv) "Including" means "including, without limitation".
- (v) "May" is permissive and implies no obligation; "must" is obligatory.

4.04 Incorporation by Reference

Each exhibit referred to in this Agreement is incorporated into this Agreement by this reference.

4.05 Amendments; Waivers

No amendment or waiver of any provision of this Agreement or consent to any departure by Owners from the terms of this Agreement is effective unless the amendment, waiver or consent is in writing and signed by an authorized signatory for Holder. A waiver or consent is effective only in the specific instance and for the specific purpose given. An amendment must be recorded in the Public Records.

4.06 Severability

If any provision of this Agreement is determined to be invalid, illegal or unenforceable, the remaining provisions of this Agreement remain valid, binding, and enforceable. To the extent permitted by applicable law, the parties waive any provision of applicable law that renders any provision of this Agreement invalid, illegal, or unenforceable in any respect.

4.07 Counterparts

This Agreement may be signed in multiple counterparts, each of which constitutes an original, and all of which, collectively, constitute only one agreement.

4.08 Entire Agreement

This is the entire agreement of Owners, Holder and Beneficiaries (if any) pertaining to the subject matter of this Agreement. The terms of this Agreement supersede in full all statements and writings between Owners, Holder, and others pertaining to the transaction set forth in this Agreement.

INTENDING TO BE LEGALLY BOUND, the undersigned Owner or Owners and Holder, by their respective duly authorized representatives, have signed and delivered this Agreement as of the Agreement Date.

Witness/Attest:

Owner's Name: _____

Owner's Name: _____

[NAME OF HOLDER]

By: _____

Name of signatory: _____

Title of signatory: _____

Acceptance by Beneficiary:

[NAME OF BENEFICIARY]

By: _____

Name: _____

Title: _____

This document is based on the model Trail Easement Agreement (9/26/2007 edition) provided by the Pennsylvania Land Trust Association.

The model on which this document is based should not be construed or relied upon as legal advice or legal opinion on any specific facts or circumstances. It should be revised to reflect specific circumstances under the guidance of legal counsel.

COMMONWEALTH OF PENNSYLVANIA:

COUNTY OF _____ :

ON THIS DAY _____, before me, the undersigned officer, personally appeared _____, known to me (or satisfactorily proven) to be the person(s) whose name(s) is/are subscribed to the within instrument, and acknowledged that he/she/they executed the same for the purposes therein contained.

IN WITNESS WHEREOF, I hereunto set my hand and official seal.

_____, Notary Public
Print Name:

COMMONWEALTH OF PENNSYLVANIA :

SS

COUNTY OF _____ :

ON THIS DAY _____ before me, the undersigned officer, personally appeared _____, who acknowledged him/herself to be the _____ of _____, a Pennsylvania non-profit corporation, and that he/she as such officer, being authorized to do so, executed the foregoing instrument for the purposes therein contained by signing the name of the corporation by her/himself as such officer.

IN WITNESS WHEREOF, I hereunto set my hand and official seal.

_____, Notary Public
Print Name:

Operation, Maintenance, and Security

Maintenance

Annual trail maintenance costs as estimated by the National Park Service can typically run from \$500 per mile for low-use trails to \$5,000 per mile for high-use trails. It is anticipated that sections of the Lower Paxton Township Greenway will experience both levels of use, equalizing in relative terms to an average “moderate” trail use.

Typical trail maintenance tasks include clearing fallen trees across trails, removing dangerous trees or limbs, bridge inspections, maintaining adequate shoulder clearances along trail, cleaning drainage structures, repairing erosion and damaged trail surfaces, removing invasive plant species, trash pick-up and removal, undertaking periodic inspections, and other associated tasks.

Experience on other trails has shown that with the aid of volunteers, these maintenance costs can be brought down significantly. The utilization of volunteer labor is an important component in managing a trail. The cleaning of drainage swales, drainage structures, and trash pick-up and removal along the trail are important volunteer tasks that can have immediate positive results.

Maintenance Task Schedule:

The following is an outline of the trail maintenance tasks that should be performed annually to maintain the trails in safe condition. Some tasks such as trash pick-up, drainage structure cleaning, plantings and other maintenance tasks can be completed by volunteers. This work should be coordinated with appropriate township staff. Professional maintenance personnel from the township’s public works departments best perform material-intensive tasks requiring larger equipment.

December, January and February

- Trails maintenance work in the winter months can continue dependent on weather conditions. Typical winter trail work may include:
 - Trash pick-up and removal.
 - Removal of dangerous trees or tree limbs.
 - Clearing free-hanging vines on trees in ROW
 - Minor repairs to trails (erosion repair, etc.)
 - Inspect and repair/replace signs, etc as needed.
 - Minor repairs to structures, fences, and bridge railings.
 - Keep drainage ways clear and clean out culverts as required
 - Keep bridge deck surfaces clear and fencing/railing free of vegetation

March

- Trash pick-up and removal.
- Trail-wide inspection for winter damage. Schedule repair work over the next two to three months.
- Obtain bare-root and other tree and shrub plant materials for spring revegetation projects.
- Install spring plantings (continue into April.)
- Distribute / post information about major trail repair and expansion projects for the spring
- Remove downed trees as required.
- Keep drainage ways clear and clean out culverts as required
- Keep bridge deck surfaces clear and fencing/railing free of vegetation

April

- Bridge / Structure inspections (every other year) - staggered schedule
- Trash pick-up and removal.
- Complete tree and shrub plantings.
- Complete herbaceous and ground cover plantings.
- Begin major trail improvement project(s).
- Prepare and seed areas to prevent erosion.
- Remove downed trees as required.
- Keep drainage ways clear and clean out culverts as required
- Keep bridge deck surfaces clear and fencing/railing free of vegetation

May

- Trash pick-up and removal.
- Complete spring plantings.
- First spraying of invasive species.
- Continue trail repair.
- Remove downed trees as required.
- Mow and trim (first time)
- Keep drainage ways clear and clean out culverts as required
- Keep bridge deck surfaces clear and fencing/railing free of vegetation

June

- Trash pick-up and removal.
- Continue trail repair.
- Plan for fall planting.
- Removed downed trees as required.
- Keep drainage ways clear and clean out culverts as required

- Keep bridge deck surfaces clear and fencing/railing free of vegetation

July

- *Trash pick-up and removal.*
- *Continue trail repair.*
- *Undertake second spraying of invasive species.*
- *Remove downed trees as required.*
- *Mow and trim (second time)*
- *Keep drainage ways clear and clean out culverts as required*
- *Keep bridge deck surfaces clear and fencing/railing free of vegetation*

August

- Trash pick-up and removal.
- Continue trail repair.
- Distribute / post information about major trail repair and expansion projects for the fall
- Remove downed trees as required.
- Keep drainage ways clear and clean out culverts as required
- Keep bridge deck surfaces clear and fencing/railing free of vegetation

September

- Trash pick-up and removal.
- Continue trail repair.
- Undertake third spraying of invasive species.
- Remove downed trees as required.
- Mow and trim (Third time)
- Keep drainage ways clear and clean out culverts as required
- Keep bridge deck surfaces clear and fencing/railing free of vegetation

October

- Trash pick-up and removal.
- Continue trail repair.
- Complete fall planting of balled and burlapped trees in “structured” areas (i.e. trail heads, picnic areas.)
- Plan for spring planting.
- Remove downed trees as required.
- Keep drainage ways clear and clean out culverts as required
- Keep bridge deck surfaces clear and fencing/railing free of vegetation

November

- Trash pick-up and removal.
- Continue trail repair.
- Remove downed trees as required.
- Keep drainage ways clear and clean out culverts as required
- Keep bridge deck surfaces clear and fencing/railing free of vegetation

Maintenance should not be deferred. Deferring maintenance for short-term savings is a faulty strategy with a poor chance of long-term success. Most funding agencies do not fund operational costs. If the trail quality deteriorates and does not provide a high quality recreation experience, it will lose popular support and thus funding. Maintenance costs will only increase and must be planned for by the Township and any management partners.

Operations and Security

As uses of each trail section increases, both operations and security of the trail will become somewhat easier. Initially, while trail use is low, there may be a greater occurrence of unwanted activity. Littering, vandalism and underage drinking are typical negative activities that occur on some trails. As runners, hikers, cyclists and other trail users populate the trail, they will become the eyes and ears of “authority”. Increasing numbers of trail users will have cell phones. People engaged in negative activities will not wish to be seen performing these activities and they usually will go elsewhere. This has been the general experience on trails across the country.

Trail users also help the Township maintain and operate the trails. When there are problems, trail users notify the township about the issue. This is a beneficial process that leads to the smooth operation of the trail. It is important that municipal office phone numbers and e-mail addresses be posted at the various trail heads and trail connection access points as a part of trail signage.

There will inevitably be injuries that occur on the trail. The multi-purpose sections of the trail will be designed to be accessible by police vehicles and ambulances to deal with these occurrences. Municipal maintenance vehicles, such as pickup trucks, will also access the trail for periodic inspections or maintenance. Bollards, gates and other vehicular controls will keep out private motor vehicles.

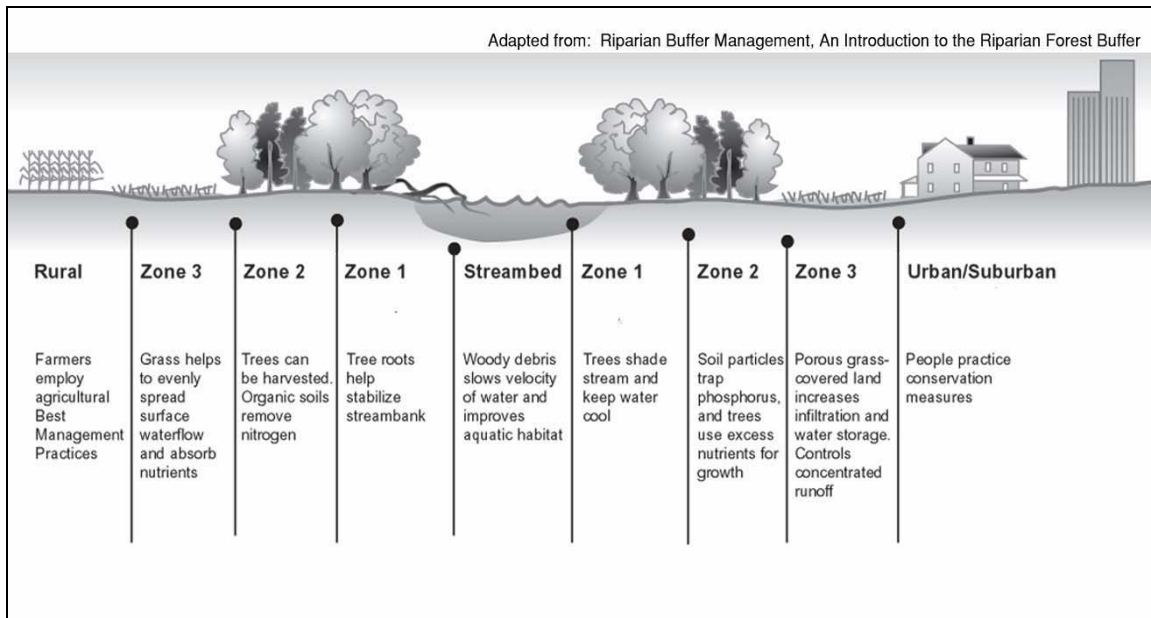
Introduction to Riparian Buffers

A riparian buffer is defined as an area of vegetation that is maintained along the banks of a river or stream. Riparian buffers act to protect water quality and provide a transition zone between aquatic resources and upland land uses. There are numerous ecological and environmental benefits associated with the establishment and maintenance of riparian buffers.

Perhaps the most important function of a riparian buffer is to filter pollution and sediment laden stormwater runoff before the water enters into a watercourse. The vegetation of a riparian buffer acts to slow the rate of runoff allowing for non-point sources of pollution such as sediment, nutrients, and pesticides to settle out prior to the stormwater entering a river or stream. Depending on the width and type of riparian buffer, it is estimated that 50 to 100% of the suspended sediments and nutrients can settle out and be absorbed by the riparian buffer plant materials. The roots of the riparian buffer vegetation also act to stabilize stream embankments and prevent erosion.

Riparian buffers also allow for stream flow regulation and groundwater recharge. By slowing the rate of stormwater runoff, established riparian buffers can reduce peak stream flows resulting in reduced downstream flooding. By slowing the velocity of stormwater, riparian buffers allow for more stormwater to infiltrate the soil and recharge the groundwater aquifer.

Riparian buffers provide important benefits to aquatic ecosystems. The tree canopy of a forested riparian buffer shades the stream, helping to keep water temperatures cool. Leaf litter and woody debris that enter a stream provides food and habitat for organisms critical to the aquatic food chain and woody debris provides in-stream cover for fish species. Riparian buffers also act to provide important habitat and migratory corridors for many species of terrestrial wildlife.



Riparian Buffer Zones

Riparian buffers are often defined as having three distinct zones.

The first zone is known as the streamside zone. The purpose of this buffer zone is primarily to stabilize the stream embankment and provide habitat for aquatic organisms. The streamside zone is best managed as an undisturbed forest with mature canopy to shade the watercourse. The width of the first zone is generally a minimum of 15' wide.

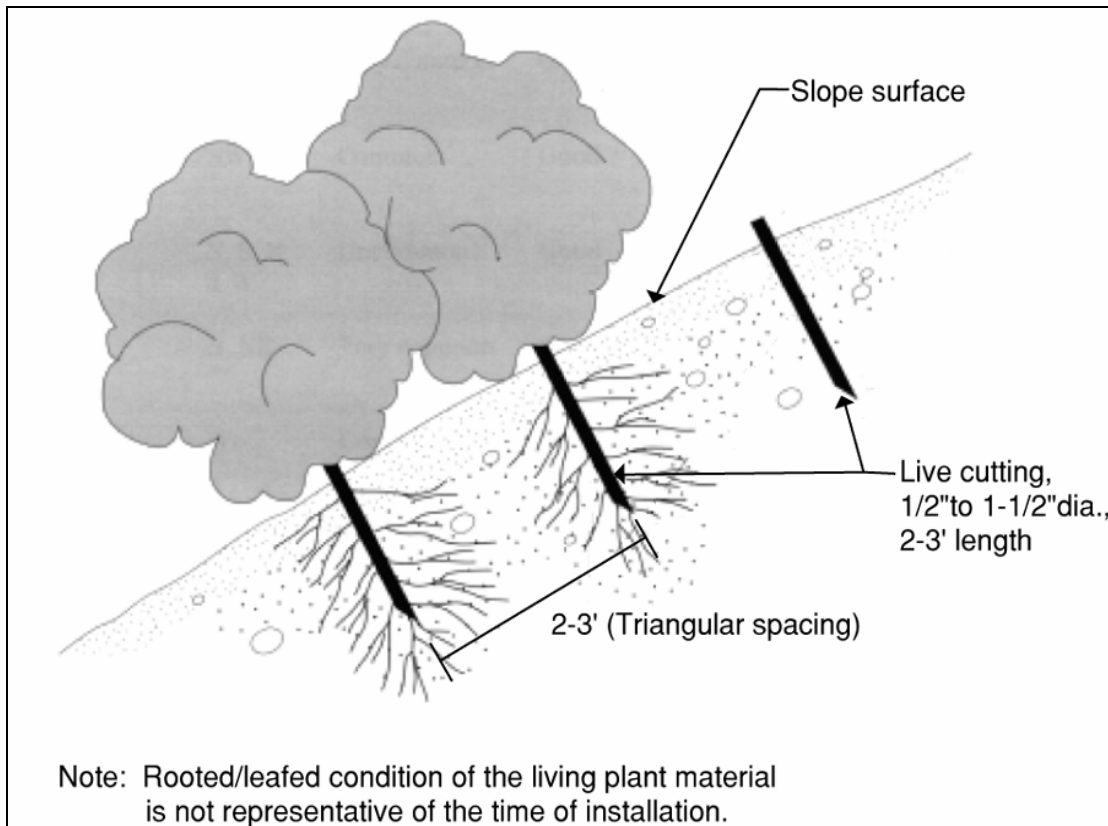
The second zone, also known as the middle zone, is located immediately upslope from the streamside zone. The primary riparian buffer function of the middle zone is to remove, transform, or store nutrients, sediments or other pollutants. This zone is typically wider than the streamside zone and it is estimated that between 50 to 80% of sediment runoff from upland fields can be removed through the middle zone. The middle zone can be maintained as a managed forest with periodic tree harvesting to ensure nutrient uptake by vigorous tree growth. The middle zone can also contain clearings that allow for recreational use. The width of the second zone may vary, however it generally a minimum of 60' in width.

The third zone or outer zone is farthest from the watercourse and located directly upslope of the middle zone. This zone is the farthest removed from the watercourse and is therefore an area that can be used for other low impact land uses. The outer zone is considered a runoff control zone that acts to disperse concentrated stormwater flow prior to water flowing into the middle zone. The outer zone can be maintained with a native grassland or meadow that acts to filter sediment suspended in stormwater flow. It is important to note that grassland and meadow areas require periodic maintenance to remove sediment,

reestablish vegetation, and to remove channels that may form which allow concentrated stormwater flow to enter middle zone. The third zone is typically a minimum of 20' in width.

The level of effectiveness of a riparian buffer is dependent upon many factors including the type of vegetation that comprises the buffer, the width of each buffer zone, and the overall distance between the watercourse and varying upland land uses. It is generally agreed that a forested area of native plant materials with an established tree canopy, understory, shrubs, and herbaceous plant layer provides the highest level of effectiveness in protecting stream ecology.

There are many varying opinions on the minimum buffer width needed to effectively protect the aquatic resources for various riparian buffer objectives such as sediment removal or stream bank stabilization. The minimum width of a buffer relates directly to specific buffering objectives. For example, to successfully remove sediment from upland stormwater, the minimum riparian buffer width may need to be 100' to 150' in width while a minimum buffer width of 50' may be sufficient if the objective is solely to stabilize stream embankments. A minimum riparian buffer width necessary for "watercourse dependent" wildlife may extend from 300' to 600' from the waters edge. Considering the relationship of the riparian buffer to upland land uses, it is generally agreed that providing the widest buffer possible will result in the realization of the full range of benefits that can be provided by riparian buffers.

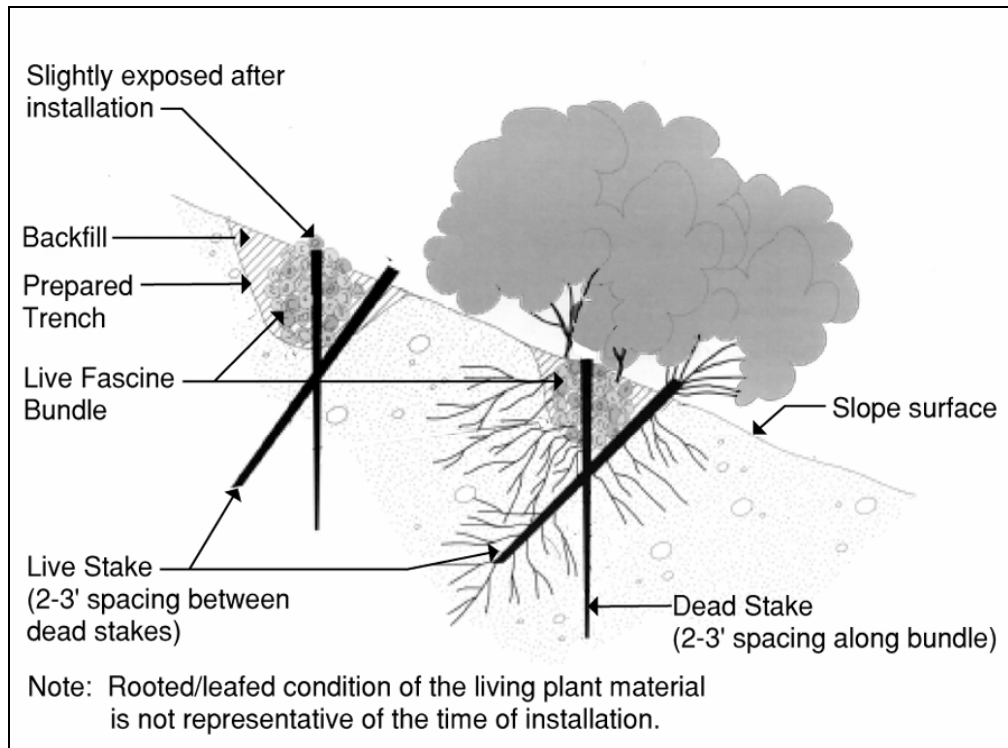


Live Staking

Live staking is simply the installation of dormant, woody, plant cuttings at a right angle into a moderately sloped stream embankment. Live stakes can be collected from existing stands of vegetation or can typically be purchased in lengths from 12" to 3'. The diameter of the stake is typically greater than one inch to allow the stake to be driven into the soil with a deadblow hammer. A piece of steel rebar is often used to create a pilot hole prior to driving the live stake into the streambank. When installing live stakes, it is important that at least 70% of the stem is buried and only 30% is exposed so that the stake is forced to produce roots. The stakes should be installed 2 to 3 feet apart, using triangular spacing to provide a density that ranges from two to four stakes per square yard. Planting must be done during the months of December through March when the stakes are dormant. It is estimated that a volunteer can install up to 50 live stakes or 12 to 25 square yards per hour.

Live stakes provide minimal initial structural slope protection however, as the live stakes develop roots, the streambank is reinforced against erosive forces. Erosion control matting or organic mulch is often used in coordination with live stake installation to provide immediate surface erosion control. Live staking is considered a very effective means of bank stabilization that can be accomplished with minimal amounts of labor. As a biotechnical erosion control method, live staking is often installed in coordination with other control methods such as brush layering and fascines. Excluding labor, a cost estimate for live stake installation

is approximately \$12 a square yard based on the purchase of 3' length stakes and installation at a density of 4 stakes per square square yard with erosion control matting.

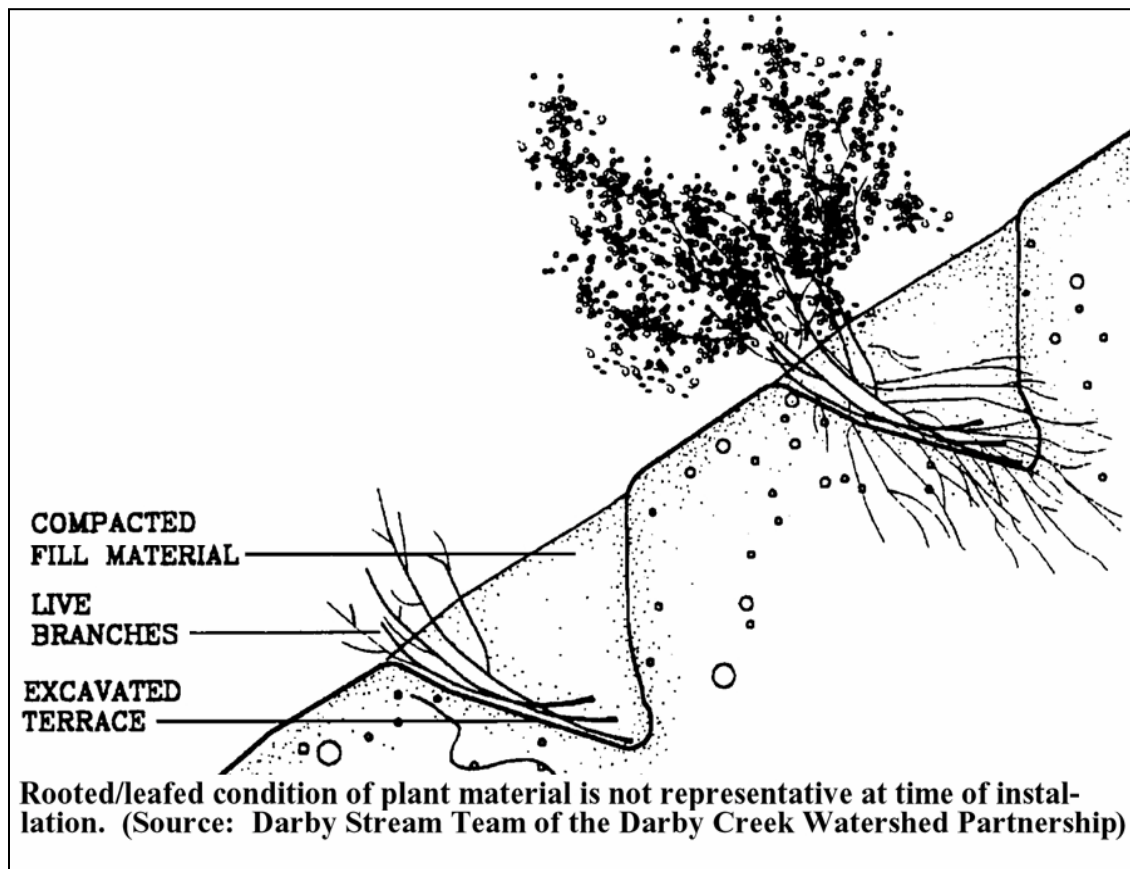


Fascines

Fascines are tied, linear bundles of branches or whips that are buried lengthwise in trenches that are excavated along the contour of the stream embankment. Fascines are generally 4" to 12" in diameter, consist of individual branches that are approximately 1" in diameter and approximately 8' in length. The trench for a fascine is excavated to a width of one or two inches greater than the diameter of the fascine and backfilled after the fascine is placed and covered with soil. Installation typically includes anchoring the fascine in the trench by driving live stakes or dead stakes through the fascines into the soil. Fascines can be installed from 3' to 5' apart parallel to the stream depending on the slope of the existing embankment.

Organic mulch or erosion control fabric is often installed in coordination with fascines to help reduce soil erosion while the fascine becomes established and to retain soil moisture. Similar to live staking and branch layering, plant material for fascines can be collected from established stands of vegetation or fascines or fascines can be purchased from nurseries that supply streambank stabilization plant materials. Excluding labor for installation and hand trenching, a cost estimate for materials for fascine installation is approximately \$21 a square yard based upon purchase of 8" to 12" diameter length bundles of vegetation. This

cost estimate includes the installation of erosion control matting and is based upon a fascine spacing of 3' parallel to the stream.



Brush Layering

Brush layering, also known as branch layering, consists of live woody plant material placed into the stream embankment face along small trenches that are excavated along the contour of the stream embankment slope. Brush layering is completed with live woody material that will easily develop roots. Installation is typically completed between the months of December and March when the live woody material is dormant. Branch cuttings, typically $\frac{1}{2}$ " to 2" in diameter, are layered 2-3' deep within the excavated trench with two-thirds of basal material then covered with soil. It is important that the branches are long enough to reach the back of a 2' to 3' deep trenches that is dug into the stream embankment and to allow six to twelve inches of upper growth to be exposed. Trench spacing can vary from 4' to 10' apart parallel to the edge of the stream. Brush layering is typically conducted on slopes up to 1.5H:1V, or in highly eroded gully areas. Similar to live staking and fascines, plant material for brush layering can be collected from established stands of vegetation or brush bundles can be purchased from nurseries that supply streambank stabilization plant materials. It is estimated that one laborer can install approximately 6-17' of brush layering in one hour. Excluding labor for installation and hand trenching, a cost estimate for

materials for branch layering is approximately \$45 a square yard based on purchase of 3' length bundles of vegetation. This cost estimate includes installation of erosion control matting.

Biotechnical Erosion Control Installation

Before installation, individual sections of eroded streambank must be analyzed to determine the slope of the streambank, solar orientation, and the availability of soil moisture. It is important that an individual with experience in biotechnical erosion control is consulted to assist in identifying the problems affecting the streambank to be stabilized and to determine goals for individual slope stabilization projects. Record keeping, installation data and post-installation monitoring are important to establish a record of implementation that can be used to determine the most successful interventions for particular riparian conditions. Additionally, pre-installation planning is important to ensure that plant material can be gathered or acquired from nursery sources. Live stakes, brush layering, and fascines installations can all be completed with native plant materials that establish quickly from cuttings and are adapted to riparian conditions.

Riparian Buffer Implementation and Management

The suggested method of instituting riparian buffer improvements and management is through the use of civic, community, and conservation organizations, many subsidized by government and private funding. Involving these organizations is important to educate the community to the benefits and importance of establishing riparian buffers within the Township's watershed. The use of community groups and volunteer labor also helps to limit the burden of riparian buffer establishment and maintenance on Township personnel. It is important to consider that many riparian buffer activities will require technical assistance of Township Park or Public Works personnel for implementation and management activities that require the operation of equipment or application of herbicide.

Growing Greener

The Growing Greener Program was signed into law by Governor Tom Ridge in 1999. Growing Greener provided investment of millions of dollars over five years to preserve farmland and protect open space; clean up abandoned mines; restore watersheds; and provide new and upgraded water and sewer systems. In 2002, the state legislature added additional monies to the program due to its great popularity. Four different agencies are involved in helping communities "grow greener" under the Environmental Stewardship & Watershed Protection Act: Departments of Environmental Protection, Agriculture, Conservation and Natural Resources and PENNVEST. Of these four agencies, the Department of Conservation and Natural Resources or the Department of Environmental Protection could fund riparian buffer improvement projects within the Township. The Act authorizes grants for acid mine drainage abatement, mine cleanup

efforts, abandoned oil and gas well plugging and local watershed-based conservation projects. These projects can include: watershed assessments and development of watershed restoration or protection plans, implementation of watershed restoration or protection projects, stormwater management wetlands, riparian buffer fencing and planting, streambank restoration and agricultural "best management practices" (BMP's).

Clean Water Act Section 319

Clean Water Act Section 319(h) funds are provided to designated state and tribal agencies to implement their approved non-point source management programs including a variety of components such as technical assistance, financial assistance, education, training, technology transfer, demonstration projects, and regulatory programs. Each year, EPA awards Section 319(h) funds to states in accordance with a state-by-state allocation formula that EPA has developed in consultation with the states.

Local schools may also be of assistance in several ways. The student body can get involved with clubs or fundraising events. Faculty can incorporate riparian buffers and stream ecology into various curricula. Amounts of funds raised by civic groups or schools may be relatively small, but this process builds constituents and support that is critical to the long-term success and protection of the Township waterways.

References:

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- Hoag, J. Chris. 2000. Costs And Considerations Of Streambank Bioengineering Treatments. USDA - Natural Resources Conservation Service
- PA Department of Environmental Protection. Pennsylvania Stream Relief, Planting Pennsylvania's Streamsides: A Plan for Restoring and Conserving Buffers Along Pennsylvania Streams.
- Palone, R.S. and A.H. Todd (editors.) 1997. Chesapeake Bay riparian handbook: a guide for establishing and maintaining riparian forest buffers. USDA Forest Service, Radnor, PA.
- Sorvig, K and Thompson J.W. 2000. Sustainable Landscape Construction: A Guide to Green Building Outdoors.

Pennsylvania Recreational Use Statute

PENNSYLVANIA STATUTES TITLE 68. REAL AND PERSONAL PROPERTY CHAPTER 11. USES OF PROPERTY RECREATION USE OF LAND AND WATER

477-1. Purpose; liability

The purpose of this act is to encourage owners of land to make land and water areas available to the public for recreational purposes by limiting their liability toward persons entering thereon for such purposes.

477-2. Definitions

As used in this act:

- (1) "LAND" means land, roads, water, watercourses, private ways and buildings, structures and machinery or equipment when attached to the realty.
- (2) "OWNER" means the possessor of a fee interest, a tenant, lessee, occupant or person in control of the premises.
- (3) "Recreational purpose" includes, but is not limited to, any of the following, or any combination thereof: hunting, fishing, swimming, boating, camping, picnicking, hiking, pleasure driving, nature study, water skiing, water sports, cave exploration and viewing or enjoying historical, archaeological, scenic, or scientific sites.
- (4) "CHARGE" means the admission price or fee asked in return for invitation or permission to enter or go upon the land.

477-3. Duty to keep premises safe; warning

Except as specifically recognized or provided in section 6 of this act, an owner of land owes no duty of care to keep the premises safe for entry or use by others for recreational purposes, or to give any warning of a dangerous condition, use, structure, or activity on such premises to persons entering for such purposes.

477-4. Assurance of safe premises; duty of care; responsibility, liability

Except as specifically recognized by or provided in section 6 of this act, an owner of land who either directly or indirectly invites or permits without charge any person to use such property for recreational purposes does not thereby:

- (1) Extend any assurance that the premises are safe for any purpose.
- (2) Confer upon such person the legal status of an invitee or licensee to whom a duty of care is owed.
- (3) Assume responsibility for or incur liability for any injury to persons or property caused by an act of omission of such persons.

477-5. Land leased to State or subdivision

Unless otherwise agreed in writing, the provisions of sections 3 and 4 of this act shall be deemed applicable to the duties and liability of an owner of land leased to the State or any subdivision thereof for recreational purposes.

477-6. Liability not limited

Nothing in this act limits in any way any liability which otherwise exists:

- (1) For wilful or malicious failure to guard or warn against a dangerous condition, use, structure, or activity.
- (2) For injury suffered in any case where the owner of land charges the person or persons who enter or go on the land for the recreational use thereof, except that in the case of land leased to the State or a subdivision thereof, any consideration received by the owner for such lease shall not be deemed a charge within the meaning of this section.

477-7. Construction of act

Nothing in this act shall be construed to:

- (1) Create a duty of care or ground of liability for injury to persons or property.
- (2) Relieve any person using the land of another for recreational purposes from any obligation which he may have in the absence of this act to exercise care in his use of such land and in his activities thereon, or from the legal consequences of failure to employ such care.

Pennsylvania's Recreational Use of Land and Water Act



INTRODUCTION

Pennsylvania has a law that limits the legal liability of landowners who make their land available to the public for free recreation. The purpose of the law is to supplement the availability of publicly owned parks and forests by encouraging landowners to allow hikers, fishermen and other recreational users onto their properties. The Recreational Use of Land and Water Act (“RULWA”), found in Purdon’s Pennsylvania Statutes, title 68, sections 477-1 et seq., creates that incentive by limiting the traditional duty of care that landowners owe to entrants upon their land. **So long as no entrance or use fee is charged, the Act provides that landowners owe no duty of care to keep their land safe for recreational users and have no duty to warn of dangerous conditions.** Excepted out of this liability limitation are instances where landowners willfully or maliciously fail to guard or warn of dangerous conditions. That is, the law immunizes landowners only from claims of negligence. Every other state in the nation has similar legislation.

PEOPLE COVERED BY THE ACT

The “owners” of land protected by the Act include public and private fee title holders as well as lessees (hunt clubs, e.g.) and other persons or organizations “in control of the premises.” Holders of conservation easements and trail easements are protected under RULWA if they exercise sufficient control over the land to be subject to liability as a “possessor.” (See *Stanton v. Lackawanna Energy Ltd.* (Pa. Supreme Ct. 2005)(RULWA immunizes power company from negligence claim where bike rider collided with gate that company had erected within the 70-foot wide easement over mostly undeveloped land it held for power transmission)).

LAND COVERED BY THE ACT

Although on its face RULWA applies to all recreational “land”—improved and unimproved, large and small, rural and urban—in the last 15 years or so, Pennsylvania courts have tended to read the Act narrowly, claiming that the legislature intended it to apply only to large land holdings for outdoor recreational use.

Courts weigh several factors to decide whether the land where the injury occurred has been so altered from its natural state that it is no longer “land” within the meaning of the Act. In order of importance:

(1) Extent of Improvements – The more developed the property the less likely it is to receive protection under RULWA, because

recreational users may more reasonably expect it to be adequately monitored and maintained;

(2) Size of the Land – Larger properties are harder to maintain and so are more likely to receive recreational immunity;

(3) Location of the Land – The more rural the property the more likely it will receive protection under the Act, because it is more difficult and expensive for the owner to monitor and maintain;

(4) Openness – Open property is more likely to receive protection than enclosed property; and

(5) Use of the Land – Property is more likely to receive protection if the owner uses it exclusively for recreational, rather than business, purposes.

SITE IMPROVEMENTS

The following cases focus on the nature and extent of site improvements that might negate RULWA immunity:

- The state Supreme Court ruled that the Act was not intended to apply to swimming pools, whether indoor (*Rivera v. Philadelphia Theological Seminary* (Pa. Supreme Ct. 1986)) or outdoor (*City of Philadelphia v. Duda* (Pa. Supreme Ct. 1991)).

- RULWA immunity does not cover injuries sustained on basketball courts, which are “completely improved” recreational facilities (*Walsh v. City of Philadelphia* (Pa. Supreme Ct. 1991)).

- Playgrounds are too “developed” to qualify for immunity (*DiMino v. Borough of Pottstown* (Pa. Commonwealth Ct. 1991)).

- Playing fields generally are held not to be “land” within the protection of the Act (*Brown v. Tunkhannock Twp.* (Pa. Commonwealth Ct. 1995) (baseball field); *Seifert v. Downingtown Area School District* (Pa. Commonwealth Ct. 1992)(lacrosse field); *Lewis v. Drexel University* (Pa. Superior Ct. 2001, unreported)(football field); but see *Wilkinson v. Conoy Twp.* (Pa. Commonwealth Ct. 1996)(softball field is “land” under RULWA)).

- An unimproved grassy area at Penns Landing in Philadelphia was deemed outside the Act's scope, given that the site as a whole was highly developed (*Mills v. Commonwealth* (Pa. Supreme Ct. 1993); compare *Lory v. City of Philadelphia* (Pa. Supreme Ct. 1996) (swimming hole in "remote" wooded area of Philadelphia is covered by RULWA)).

RULWA immunity has been found in several cases where people were injured at outdoor sites containing limited improvements:

- An earthen hiking trail in a state park is not an improvement vitiating the Act's immunity (*Pomeren v. Commonwealth* (Pa. Commonwealth Ct. 1988)).

- The owner of property containing a footpath created by continuous usage, which led down to the Swatara Creek, has no duty to erect a warning sign or fence between his property and the adjacent municipal park (*Rightnour v. Borough of Middletown* (Lancaster Cty. Ct. of Common Pleas 2001)).

- A landscaped park containing a picnic shelter is still "unimproved" land for RULWA purposes (*Brezinski v. County of Allegheny* (Pa. Commonwealth Ct. 1996)).

- An artificial lake is just as subject to RULWA protection as a natural lake, although the dam structure itself is not covered (*Stone v. York Haven Power Co.* (Pa. Supreme Ct. 2000)).

- An abandoned rail line in a wooded area is covered by RULWA, even where the plaintiff fell from a braced railroad trestle (*Yanno v. Consolidated Rail Corp.* (Pa. Superior Ct. 1999))(but may no longer be good law after *Stone*)).

Uncertainty about what constitutes an improvement under the Act reportedly has had a dampening effect on efforts to improve public access to outdoor recreation sites. Public and private landowners are concerned that installation of fishing piers, boat docks, parking facilities, or paths and ramps for wheelchair use will strip much-needed RULWA immunity from otherwise protected land. A bill introduced in the state Senate in the late 1990s attempted to clarify that public access improvements would not affect immunity under the Act, but the legislation was not successful.

FAILURE TO WARN

As noted above, although negligence liability is negated by the Act, a landowner remains liable to recreational users for "willful or malicious failure to guard or warn" against a dangerous condition. To determine whether an owner's behavior was willful, courts will look at two things: whether the owner had actual knowledge of the threat (e.g., was there a prior accident in that same spot); and whether the danger would be obvious to an entrant upon the land. If the threat is obvious, recreational users are considered to be put on notice, which precludes liability on the part of the landowner. In a recent drowning case, for example, landowner Pennsylvania Power & Light Company

claimed immunity under RULWA. The judge, however, sent to the jury the question of whether PP&L was willful in not posting warning signs. A previous tubing accident had occurred in the same location, and there was testimony that the dangerous rapid where the drowning occurred was not visible to people tubing upstream (*Rivera v. Pennsylvania Power & Light Co.* (Pa. Superior Ct. 2003)).

GOVERNMENTAL IMMUNITY

Interestingly, Pennsylvania's governmental immunity statutes, the Tort Claims and Sovereign Immunity Acts, shield municipalities and Commonwealth agencies from claims of willful misconduct. Liability only may be imposed upon these entities for their negligent acts. But, as noted above, where an injury occurs on "land" within the meaning of RULWA, the law shields landowners from negligence suits. In essence, public agencies are granted complete immunity for many recreational injuries. (See *Lory v. City of Philadelphia* (Pa. Supreme Ct. 1996)(city immune for both its negligent maintenance of recreational lands and its willful failure to guard or warn of hazards on that property)).

RECREATIONAL PURPOSE; PUBLIC ACCESS

Though not all recreational land is covered by the Act, the law's definition of "recreational purpose" is broad enough to include almost any reason for entering onto undeveloped land, from hiking to water sports to motorbiking. (See *Commonwealth of Pa. v. Auresto* (Pa. Supreme Ct. 1986)(RULWA covers snowmobile injury)). This is true even if the landowner has not expressly invited or permitted the public to enter the property. However, where the land is open only to selected people rather than to the public in general, this will weigh against RULWA immunity. (See *Burke v. Brace* (Monroe Cty. Ct. of Common Pleas 2000)(lake located in a subdivision and open only to homeowner association members and guests is not covered by RULWA)).

NO USER FEE

Finally, charging recreational users a fee (which is different than accepting payment for an easement) takes the property out from under the Act's protection.

Copies of this fact sheet may be obtained from:

PA Department of Conservation and Natural Resources
Bureau of Recreation and Conservation
Rachel Carson State Office Building
P.O. Box 8475
Harrisburg, PA 17105-8475
Telephone: (717) 787-7672
Fax: (717) 772-4363
www.dcnr.state.pa.us

