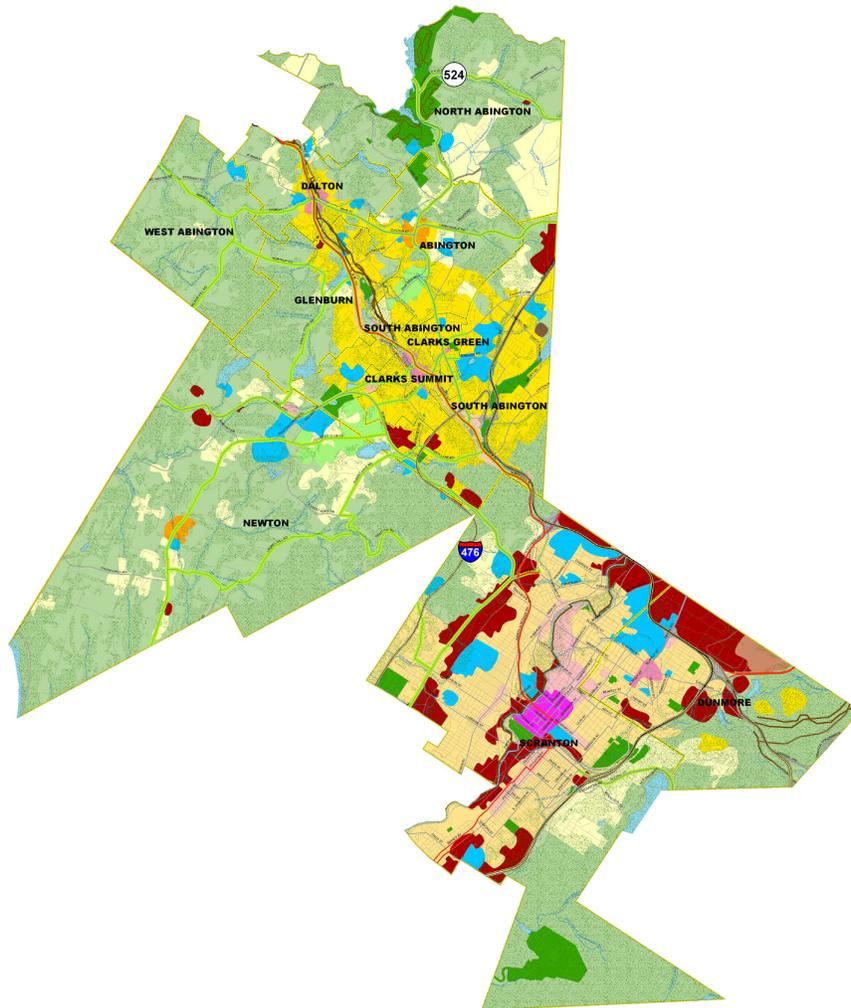




Scranton-Abingtons Planning Association (SAPA)



Comprehensive Plan



The SAPA Committee acknowledges the time, talent and funding provided by the participating municipalities, resource agencies, and the public that made this Plan possible.

Funding for the creation of this Plan was made possible by multiple public and private funding sources, including the following entities:

- 11 participating municipalities (Abington Township [now Waverly Township], Clarks Green Borough, Clarks Summit Borough, Dalton Borough, Dunmore Borough, Glenburn Township, Newton Township, North Abington Township, City of Scranton, South Abington Township, West Abington Township);
- Pennsylvania Department of Community and Economic Development (DCED);
- Pennsylvania Department of Transportation (PennDOT);
- Scranton Area Foundation; and
- Willary Foundation.

The SAPA Committee:

During the planning, each of the eleven municipalities was represented by two Committee members of that municipality's own choosing. Each municipality's Committee members and officials made the planning decisions for their own municipality, soliciting input from the public along the way. Each stage of the planning process was accomplished by consensus of all the Committee members, working together through many meetings. The municipalities thank the Committee members for their countless volunteer hours and spirit of cooperation throughout the planning process.

Plan consultants:

- McCormick Taylor, Inc.
- Borton Lawson
- Community Planning and Management Associates

The Scranton-Abingtons Planning Association Comprehensive Plan was prepared by McCormick Taylor, Borton Lawson, and Community Planning and Management, with the Scranton-Abingtons Planning Association Committee. The policies embodied in the plan reflect the views of the Scranton-Abingtons Planning Association Committee.

Name of Municipality / Date of Adoption

Abington Township (later renamed Waverly Twp.).....	November 30, 2009
Clarks Green Borough.....	December 14, 2009
Clarks Summit Borough.....	December 2, 2009
Dalton Borough.....	December 30, 2009
Dunmore Borough.....	December 28, 2009
Glenburn Township.....	December 21, 2009
Newton Township.....	December 14, 2009
City of Scranton.....	November 20, 2014
South Abington Township.....	December 14, 2009
West Abington Township.....	December 1, 2009

North Abington Township did not adopt the plan.

Our most sincere thanks also to the many local organizations and members of the public who contributed to the writing of this Plan.

FORWARD

While the benefits of multi-municipal planning are numerous, prudence dictates that all aspects of this plan need to be fully understood by all participants. Some of the more important aspects of this plan include:

- This SAPA Plan shall not infringe on any lawful rights granted to any member municipality that said member retained prior to its participation in this Association.
- All decisions relative to participating in this plan – now and in the future – are the sole dominion of the elected leadership of each member municipality.
- Each member community will continue to maintain its own Zoning Hearing Board.
- Each member community reserves the right to withdraw from this SAPA Plan at any time.
- The autonomy of each and every member community shall be permanently protected and maintained.

Scranton-Abingtons Planning Association Comprehensive Plan

Table of Contents

Chapter One: Background and Planning Issues

1.1	Introduction.....	1
1.2	Purpose of the New Comprehensive Plan	2
1.3	Recent Planning Activities	3
1.4	Comprehensive Planning Process.....	4
1.5	Comprehensive Planning Work Program.....	6
1.6	Major Planning Issues.....	7
1.7	Plan Content.....	10

Chapter Two: Existing Conditions

2.1	Introduction.....	13
2.2	Existing Land Use	15
	Residential Use.....	15
	Commercial Use	16
	Industrial Use.....	17
	Institutional Use.....	17
	Transportation and Utilities	17
	Recreational and Open Space.....	18
	Agricultural and Vacant	18
	Economic Development Zones	19
2.3	Population, Housing & Employment	23
	Population Trends	23
	Age Characteristics	26
	Housing Units	27
	Population Forecasts.....	28
	Housing Units to be Constructed	30
	Non-residential Development Forecasts	32
2.4	Pattern of Change	33
	Residential Use.....	33
	Commercial, Business Park, and Industrial Use.....	34
	Parks and Open Space Use.....	34
	Institutional Use	34
	Pending and Proposed Development	35
2.5	Transportation	39
	Functional Classification	40
	Traffic Volumes	42
	Roadway Projects	42
	Corridors of Concern	43

	Public Transportation	44
	Airports	46
	The Lackawanna Cut-Off.....	46
	Pedestrian & Bicycle Mobility.....	47
	Current Trails.....	48
2.6	Natural Resources	51
	Hydrology.....	52
	Topography.....	54
	Soils and Geology	54
	Vegetation and Wildlife.....	57
	Composite Constraints.....	58
	Stormwater Management	59
2.7	Historic Resources	67
2.8	Community Facilities	75
	Community Facilities and Services.....	75
	Libraries	76
	Public Schools.....	77
	Colleges and Universities.....	77
	State Parks.....	80
	Regionally-Oriented Recreation and Conservation Areas.....	80
	Trails.....	81
	Local Recreation Facilities	82
	Easement and Agricultural Land.....	85
	Water Service.....	86
	Sewer Service	88
	Other Utilities	94

Chapter Three: Growth Management Plan

3.1	Introduction.....	97
3.2	Land Use Plan.....	99
	Major Planning Concepts	102
	Other Land Use Designations	115
3.3	Transportation Plan	119
	Introduction	120
	Mobility and the Major Planning Concepts	121
	Corridors of Concern	126
	Transportation Master Plan.....	127
	Pedestrian and Bicycle Network.....	133
	Improved Public Transportation Connections	133
3.4	Housing Plan.....	135
	Mixed-Use Centers & Mixed-Use Corridors Housing.....	135
	Fair Share and Affordability	139
3.5	Environmental Protection Plan.....	141
	Watersheds.....	142
	Wetlands	150

	Riparian Buffers.....	150
	Resource Conservation.....	153
	Natural Gas Wells.....	154
	Ridgeline and Scenic Views.....	154
3.6	Historic Preservation Plan.....	157
	Preservation Planning Guidelines.....	158
	Local Preservation Policy.....	160
	Community Character.....	163
	Outreach and Education.....	164
3.7	Parks, Recreation and Open Space Plan.....	167
	Park and Recreation Facilities.....	168
	Trails.....	168
	Open Space.....	169
	Fee-in-lieu Provisions.....	170
	Land Acquisition.....	171
3.8	Community Facilities & Utilities Plan.....	175
	Public Schools.....	175
	Libraries.....	176
	Emergency Services.....	176
	Wastewater Disposal.....	177
	Water Supply.....	178
	Alternate Energy Production.....	181

Chapter Four: Implementation Plan

4.1	Introduction.....	183
4.2	Adoption of the Plan.....	184
4.3	Implementing the Plan.....	184
4.4	Advancing the Major Planning Concepts – Tools & Strategies.....	185
4.5	Advancing Other Planning Concepts – Tools & Strategies.....	192
4.6	Amendments to Land Development Regulations.....	194
4.7	Action Plan.....	195
4.8	List of Potential Funding Programs.....	200

Appendix I: Stormwater Ordinance Recommendations

Appendix 2: DEP Model Stormwater Management Ordinance

Appendix 3 Eligible Historic Properties

Appendix 4 Potential Funding Sources

Appendix 5 Map Section 11 x 17

List of Figures.....	iv
List of Tables.....	v

Scranton-Abingtons Planning Association Comprehensive Plan

List of Figures

Figure Name	Page
Figure 1.1 Location Map	11
Figure 2.2.1 Existing Land Use*	20
Figure 2.2.2 Land Preservation	21
Figure 2.4.1 Recent Development.....	37
Figure 2.4.2 Pending and Proposed Development	38
Figure 2.5.1 Functional Classification.....	49
Figure 2.5.2 Jurisdictional Classification.....	50
Figure 2.6.1 Hydrologic Features*	62
Figure 2.6.2 Slope.....	63
Figure 2.6.3 Agricultural Soils.....	64
Figure 2.6.4 Composite Constraints*.....	65
Figure 2.6.5 Stormwater Network*	66
Figure 2.7.1 Historic Sites	73
Figure 2.8.1 Community Facilities*	95
Figure 3.2.1 Land Use Plan*.....	118
Figure 3.7.1 Parks, Recreation and Open Space*	173

* Please see Appendix Five for an 11 x 17 version of starred maps.

Scranton-Abingtons Planning Association Comprehensive Plan

List of Tables

Table Name	Page
Table 2.3.1 Lackawanna County and SAPA Area Population Trends, 1970-2000.....	24
Table 2.3.2 Lackawanna County and SAPA Area Population Change 1970-2000.....	25
Table 2.3.3 SAPA Area Population by Age Groups, Median Age (1990-2000).....	26
Table 2.3.4 SAPA Area Housing Unit Inventory (1990-2000).....	27
Table 2.3.5 Alternative Population Forecasts for the SAPA Area to the Year 2030.....	29
Table 2.3.6 Housing Units to be Constructed in the SAPA Area, 2000-2030.....	31
Table 2.5.1 Functional Classification of Roadways.....	41
Table 2.7.1 Sites Listed on the National Register of Historic Places.....	70
Table 2.8.1 Emergency Services.....	76
Table 2.8.2 School Districts Serving the SAPA area.....	78
Table 2.8.3 Local Recreation Facilities.....	82
Table 4.1 Major Planning Concepts & Implementation Strategies Matrix	197
Table 4.2 Timetable for Implementation of the Comprehensive Plan.....	199

(This page intentionally left blank)



Scranton-Abingtons Planning Association (SAPA)

1. Background and Planning Issues



Chapter One: Background and Planning Issues

SECTION 1.1: INTRODUCTION

Chapter One describes the context for the Scranton-Abingtons Planning Association (SAPA) multi-municipal Comprehensive Plan and documents recent planning initiatives within the SAPA area. It also outlines the planning process and work program, and highlights several major planning issues that the Plan addresses.

The Scranton-Abingtons Planning Association includes the City of Scranton, the boroughs of Clarks Green, Clarks Summit, Dalton, and Dunmore, and the townships of Abington, Glenburn, Newton, North Abington, South Abington, and West Abington. All eleven municipalities are in Lackawanna County in northeastern Pennsylvania.

The Scranton-Abingtons Planning Association was established so that the member municipalities could achieve the benefits of multi-municipal cooperation. Initiating multi-municipal planning required much serious thought and a commitment to work together, but the member municipalities saw much to be gained, including the following benefits:

- Enables neighboring municipalities to develop a shared vision of the future;
- Provides additional financial resources for plans, studies, and projects from state agencies and other sources;
- Supports cost-sharing and cost-saving arrangements for planning and plan implementation activities;
- Can facilitate economic development based on a coordinated and comprehensive strategy rather than competing for tax revenues;
- Provides a stronger defense from curative amendment challenges if there is a multi-municipal (rather than individual) comprehensive plan and cooperative zoning.

Having made the commitment to prepare a comprehensive plan together, the multi-municipal plan will provide SAPA municipalities with the opportunity to develop cooperative zoning, in order to allocate land uses to the most appropriate locations in the planning area instead of providing for all types of uses in each and every municipality. This strategy holds the great

Chapter One: Background and Planning Issues

potential for effective long-term management of growth and development. Concurrently, the municipalities must plan for changing demands and costs of community facilities and services. In short, the municipalities must work together to manage growth and change in accord with well defined, yet flexible, goals and objectives aimed at achieving an overall vision.

The governing body of each SAPA municipality believes a multi-municipal comprehensive plan is vital to providing for coordinated and orderly growth and development. Local officials are committed to organizing under the terms of the Intergovernmental Cooperation Act and Article XI of the Pennsylvania Municipalities Planning Code (MPC) to develop and adopt a multi-municipal plan in accordance with MPC Article III.

SECTION 1.2: PURPOSE OF THE NEW COMPREHENSIVE PLAN

The purpose in preparing the Comprehensive Plan is fourfold. First, a common planning data base for the SAPA area has been established. Chapter Two includes surveys of natural and cultural features, the current land use pattern, the road system, the systems of public services and utilities, analyses and projections of population and housing, and an examination of the rate and types of change in the SAPA area over the last twenty years. Second, the Plan identifies the basic direction and structure recommended for the future of the SAPA area, derived from explorations of alternative scenarios for development. Third, the Plan specifies the goals, policies, and individual elements that will form the basis for development, conservation, redevelopment, and preservation in the SAPA area. Finally, the Plan lays forth a specific implementation strategy and program to help achieve the goals of the Plan.

Chapter One: Background and Planning Issues

A Comprehensive Plan for the SAPA communities can provide local officials with a highly-effective planning tool that will support day-to-day decisions about future development so that they may be thoroughly rational and consistent and at the same time move their communities together in a desirable direction in terms of revitalization, open space conservation, mobility, historic resource preservation, environmental protection, community facilities, and fiscal balance.

A Plan that is fully responsive to the needs of the residents of the SAPA area communities will contain both long-range and short-range programs, must balance local needs and perceptions with regional requirements and perspectives, and contain its own logic and strategy for implementation. A good Plan can also serve as a “road map” for the SAPA area, both in terms of informing and improving the process of reviewing and approving development plans, and in projecting a coherent and mutually agreed-upon development framework and visual image of the area.

The Comprehensive Plan should serve as an everyday working document to be referred to regularly in the review of development proposals and in the planning of long-range capital improvements. The Comprehensive Plan for the SAPA area also needs to relate to and be coordinated with the Bi-County Comprehensive Plan being developed for Lackawanna and Luzerne Counties, but at the same time must reflect the unique characteristics and setting of the SAPA municipalities and the point of view of its residents. The Comprehensive Plan must meet the requirements of the Commonwealth of Pennsylvania’s Municipalities Planning Code as to content and the procedure for the preparation and adoption of comprehensive plans.

SECTION 1.3: RECENT PLANNING ACTIVITIES

SAPA member communities have comprehensive plans that range in age from several years old to over 30 years old. Recent plans include those prepared by Abington Township and a joint plan produced for Glenburn Township and Dalton Borough.

Chapter One: Background and Planning Issues

In 2004, an Open Space, Greenways & Outdoor Recreation Master Plan was adopted by Lackawanna and Luzerne Counties, providing an overall framework and direction for recreation and preservation in these two counties. The intent was to provide guidance at the county scale and then for local municipalities and multi-municipal groups to adopt their own plans.

At the time that the SAPA Comprehensive Plan was being prepared, Lackawanna and Luzerne Counties were also preparing a joint Comprehensive Plan, Long Range Transportation Plan Update, and a Hazard Mitigation Plan. Members of the SAPA communities were also involved in this effort.

In addition to providing their own funding for the SAPA Comprehensive Plan, SAPA communities received funding from the Pennsylvania Department of Community and Economic Development (PaDCED), Pennsylvania Department of Transportation (PennDOT), and local foundations, including the Scranton Area Foundation and the Willary Foundation.

SECTION 1.4: COMPREHENSIVE PLANNING PROCESS

In recognition of the need to develop a multi-municipal Comprehensive Plan and local interest in the location, pace, and character of recent and future development in the SAPA area, the elected officials of the SAPA area municipalities formed the SAPA Committee and agreed to participation in the development and implementation of a Comprehensive Plan. These elected officials appointed the SAPA Committee to guide the preparation of the Plan and oversee the work of the consultant.

Through the Comprehensive Plan preparation process, the SAPA Committee met on a regular basis with the consultant. The Committee has had several critical roles to play, including:

- Monitoring progress on the Work Program, including scheduling and coordinating all Workshops and Public Information Meetings according to the Plan's Work Program Schedule;

Chapter One: Background and Planning Issues

- Providing information and ideas to the consultant and providing data/contacts/leads and direction to the consultant for upcoming tasks in the Work Program Schedule as the process was underway;
- Reviewing study products of the consultant, providing feedback to the consultant, and participating in the consensus-building process;
- Publicizing the Plan, encouraging community participation and promoting the comprehensive planning process generally and the growth management ideas that emerged during the planning process.

Three Public Information Meetings were held during the course of the Plan preparation. The first Public Information Meeting, held in June 2007 at the completion of Phase A in the project, was an introduction to the process being undertaken and an opportunity for the SAPA Committee and consultant to present the range of issues and choices to be examined in the overall Comprehensive Plan preparation process. The second Public Information Meeting occurred in October 2007 at the conclusion of Phase B. The focus of this meeting was a review of the alternative concepts for the future that the SAPA Committee had explored and an emerging framework for the future of SAPA area. The third Public Information Meeting took place on July 2009 in order to review the recommendations included in the Draft Comprehensive Plan and Implementation Strategy.

These Public Information Meetings served to update local residents, business operators, landowners, and other interested parties on the progress on the SAPA Comprehensive Plan, and elicited feedback on the ideas being put forward as part of the planning process.

A Public Hearing was held on the Draft Plan on September 23, 2009 for adoption action by the elected officials of the SAPA area municipalities. The formal review process of a Public Hearing rounded out the extensive community participation program, including the three aforementioned Public Information Meetings. Community participation was a hallmark of the planning process, in order to fully inform residents and to create a strong consensus as to the most desirable and achievable common future for the SAPA area.

Chapter One: Background and Planning Issues

SECTION 1.5: COMPREHENSIVE PLANNING WORK PROGRAM

The Comprehensive Plan process consisted of four distinct phases that took place between 2006 and 2009.

Phase A was primarily devoted to background data collection and the documentation of change in the SAPA area during the last twenty years. Tasks within this phase included a review of earlier planning documents and data, creating the base maps of the SAPA area for the study, an inventory of natural and cultural features and development limitations, documentation and forecasts of demographics and development activity, a study area tour, stakeholder focus groups on a range of topics, and individual municipal meetings.

As a foundation for the work in Phase B, Phase A concluded with the setting of preliminary goals and objectives for the Plan. Phase B itself incorporated a systematic exploration of a variety of planning and development issues and alternative development patterns. It culminated with the development of a framework for future development and preservation that synthesized the best planning ideas that had emerged through the work of the SAPA Committee process.

The third phase, Phase C, focused on the actual preparation of the Comprehensive Plan document. The Plan was prepared as a preliminary draft, reviewed by the SAPA Committee, and revised to a final draft form that was ready for public review.

Phase D concluded the planning process and included a public review and hearings on the final draft of the Plan. Revisions were made based on those reviews and hearings and the Final Comprehensive Plan was prepared for printing and public distribution.

Chapter One: Background and Planning Issues

SECTION 1.6: MAJOR PLANNING ISSUES

The SAPA communities have joined together to address common issues, establish area-wide goals and objectives, and work together to accomplish their joint vision for the future. The SAPA area encompasses land uses ranging from agriculture and forestry, to borough and village centers, to suburban development and a central city. While very diverse in landscape, the planning area municipalities share issues including a shifting population, diverging land values, highway and transportation needs, and demands for community facilities and services.

While Lackawanna County as a whole has experienced a decline in population over the last few decades, some communities have had population increases. Essentially, a population shift is occurring in and around the City of Scranton, with older settlements losing population and new housing construction taking place in outlying areas. Abington, North Abington, South Abington, and West Abington Townships and Clarks Green Borough all gained residents in the 1990 to 2000 period, while other municipalities lost anywhere from 2.4 percent to 9.0 percent of their residents.

The effects of this population shift can be seen on the landscape, with housing development occurring in former agricultural and wooded areas, and in the pattern of commercial development, with new shopping centers and strip retail areas replacing central business districts of older settlements for local shopping and services. In general, problems associated with these trends include the lack of public services in rural areas, increased traffic on roadways that have not been substantially improved, increased costs borne by local governments, potential threats to environmentally-sensitive resources, visual intrusions into the countryside, a near-universal dependence on private vehicles for mobility, a decline of local business centers, and loss of the strong fabric inherent in traditional communities.

The population of the eleven-municipality planning area represents about 53 percent of the total population of Lackawanna County, while the land area comprises only about 21 percent of the county. At 3,200 persons per square mile, the highest population density is found in Clarks Summit Borough, with the City of Scranton and Clarks Green at 3,000 and 2,700 persons per

Chapter One: Background and Planning Issues

square mile respectively. West Abington Township, at 57 persons per square mile, is the most sparsely populated. The U.S. Census shows that the population of the planning area decreased between 1990 and 2000, with individual changes ranging from a decrease of nine percent in Dunmore to an increase of 35 percent in South Abington Township. During the same period the population of the *Abingtons* increased by nine percent. However, it is important to remember that the decreases in Dunmore and Scranton represent almost 6,800 persons while the *Abingtons'* increase represents about 1,900.

As the population of the *Abingtons* has increased, so too has the commercial development and traffic along US Route 6/11, which bisects the most densely populated areas of the *Abingtons* and serves as the one of the principal northwest-to-southeast routes. Other transportation issues include increasing congestion on Interstate Route 81, the major north-south route in Northeast Pennsylvania, and the potential of a passenger rail link to New York City.

A key issue for the Scranton-Abingtons Planning Association is the future role to be played by the City of Scranton and adjacent Dunmore Borough. Historically, these were the robust centers of commerce for the area. Lately each has faced declining population and a pattern of disinvestment. SAPA supports strengthening of these two municipalities; a healthy urban center can only benefit the entire area, resulting in less emigration, less development and loss of open land in the rural municipalities, and an improved quality of life for everyone who lives in the area.

While the historical importance of agriculture and forestry to the area has declined, many acres of open land remain. This open land is a key ingredient of the character of the entire SAPA area, not only for the less populated townships. Resource-sensitive local planning and land use management is critical to conserving the remaining open land, given shifting development patterns and the potential for sprawl.

Chapter One: Background and Planning Issues

Costs and benefits of development

New development can cost communities more than it contributes, as demands for increased services exceed what higher tax revenue provides. Development that is commonly linked to this revenue-cost imbalance is residential, although commercial development is also suspect.

Residential development may directly affect property owners' municipal and school district tax bills and may mean additional community costs in the following ways:

- New and/or expanded schools;
- Additional road construction and maintenance;
- Additional policing; fire protection and ambulance coverage;
- Additional administrative and code enforcement;
- Waste management; and
- Other additional services and facilities (Senior transit, "meals on wheels", after-school community services, etc).

Commercial development may directly affect property owners' tax bills and may mean additional municipal costs in the following ways:

- Additional policing; fire protection;
- Additional ambulance coverage;
- Additional road maintenance;
- Additional administrative and code enforcement.

In some states, municipalities may impose impact fees on developers to help to offset increased costs due to development, although in Pennsylvania such "off-site" fees are generally limited to sewer tap-in fees and contribution of land or fees relative to park and open space facilities. Act 209 permits the proportional share of the costs of new roads or roadway improvements, community-wide or district-wide, attributable to new developments, to be passed on to the developments themselves, and such fees generally force builders to pass the cost on to new homebuyers. A comprehensive study of the current and projected roadway system and costs to implement the future system must be completed by the municipality before any impact fees may be imposed.

Chapter One: Background and Planning Issues

In existing urban areas, revitalization, restoration, and redevelopment of existing buildings/infrastructure where there was previous abandonment or vacancy provides benefits for those communities. (See *Back to Prosperity: A Competitive Agenda for Renewing Pennsylvania*, Brookings Institution, 2003.)

SECTION 1.7: PLAN CONTENT

The following Comprehensive Plan chapters were developed in order to address the issues outlined above and to provide a framework for the future of SAPA area:

Chapter 2: Existing Conditions - Provides a snapshot of the SAPA area as it is today, examines recent trends and considers forecasts for growth and development.

Chapter 3: Growth Management Plan - Identifies goals and objectives for the future and establishes a policy framework for meeting those goals.

Chapter 4: Implementation Plan - Establishes an implementation framework of actions that SAPA municipalities will take cooperatively over time to translate the Plan into reality.

Chapter One: Background and Planning Issues



Scranton-Abingtons Planning Association (SAPA)

2. Existing Conditions



Chapter Two: Existing Conditions

INTRODUCTION

SECTION 2.1: INTRODUCTION

The Scranton-Abingtons Planning Association area encompasses the central and northwestern part of Lackawanna County, Pennsylvania. Located in the northern Poconos Mountains, the most prominent physical features of the region are the Lackawanna River Valley and Bald Mountain, the mountain that frames the valley to the north. While the valley includes gently sloping hills and creeks, the uplands include steep-sided stream valleys and numerous lakes. A network of waterways drains the planning area, most notably Lackawanna River, Ackerly Creek, Gardner Creek, Roaring Brook, Stafford Meadow Brook, South Branch Tunkhannock Creek, Leggetts Creek, and their many associated tributaries.

The SAPA area contains approximately 94 square miles (60,400 acres) of land area and measures about 14 miles east to west and about 16.5 miles from north to south.

Chapter Two describes the SAPA area as it is today and begins to consider the future of the area based on trends from the recent past and forecasts for tomorrow. This exploration investigates the area's natural and built environment and analyzes changes in population, housing, and employment, including forecasts for future growth and change. Grounded in an understanding of today's conditions, and how they have occurred over time, this chapter sets the stage for recommendations for the future in subsequent chapters.

The data, mapping, and discussion included in the following sections are the result of months of data collection, analysis, and coordination with the SAPA Committee, other municipal officials, and members of the community at large. The analysis included in this chapter was developed to identify the existing conditions in the SAPA area, in order to consider how to develop policies and strategies that will maintain and improve SAPA member communities and their residents' quality of life.

Chapter Two: Existing Conditions

INTRODUCTION

Chapter Two: Existing Conditions

EXISTING LAND USE

SECTION 2.2: EXISTING LAND USE

Current land uses in the SAPA area represent a diverse mixture, ranging from the highly urbanized City of Scranton to the mainly rural townships of Newton, North Abington, and West Abington, which are primarily agricultural with scattered residential development.

The examination of how land is currently used in the SAPA area serves as the basis for discussions about the future. It is through an analysis of existing conditions that we can understand current land use. It also prepares us for a discussion of what might change in the future, and how land use may be guided to produce positive results for the area.

The existing land use inventory, as depicted in Figure 2.2.1, was developed using Lackawanna County parcel data as a starting point. This base information was then updated and revised by the consultant team through the use of 2005 aerial photography, field verification, and local knowledge of municipal staff and the members of the SAPA Committee.

The existing land use map uses color to differentiate land uses. It depicts uses that relate to the more structured, built environment such as lands used for residential, commercial, industrial, and institutional development, as well as recreational, transportation, and utility use. It also includes areas not defined by urban uses such as agricultural, vacant, and open space land.

Residential Use

Land designated as residential comprises roughly a quarter of the total land usage in the SAPA area. The majority of residential land uses are located within the City of Scranton, Borough of Dunmore, or along US Route 6/11 as it travels northwest through South Abington, Clarks Summit, Clarks Green, Glenburn, and Dalton.

Chapter Two: Existing Conditions

EXISTING LAND USE

The City of Scranton is the major urban center for the SAPA area, containing the highest mix of uses and intensities for residential development. The mix of housing types includes single-family detached, 2-family, single-family attached, and multi-family units. The Borough of Dunmore has a similar broad range of residential structure types.

The majority of the residential land uses outside of Scranton and Dunmore are of a lesser intensity with little variation from single-family detached dwelling units. Single-family detached dwellings are by the far the most common type of housing in the *Abingtons*, and this structure type accounts for over 90% of the its total acreage of residential land use (12,556 of 13,906 acres).

Commercial Use

Commercial activity is concentrated in and around the City of Scranton, Borough of Dunmore, and following along many of the major routes connecting the different municipalities. The largest concentration is within the city limits of Scranton, the commercial center of the region. Scranton contains commercial activity that includes hotels, offices, retail centers, and mixed-use buildings. Commercial activity is also focused along the US Route 6/11 corridor, with the highest concentration near the interchange of the Northeast Extension of the Pennsylvania Turnpike (I-476) in South Abington Township. Other commercial land use is located in the boroughs (the concentration in Clarks Summit is of note) and in scattered pockets among the townships.

Commercial uses account for only 3.6% of land use or 1,990 acres. Some of this acreage takes the form of business parks. Prominent business parks include the Abington Executive Park (about 184 acres of development in South Abington); the W.W. Scranton Office Park at Montage (124 acres in Scranton and Moosic Borough, located at the base of the Sno Mountain Ski Resort at Exit 182 of Interstate 81); and the 64-acre Stafford Avenue Business Park, which offers “flex space” in Scranton.

Chapter Two: Existing Conditions

EXISTING LAND USE

Industrial Use

Industrial uses are largely focused in and around Scranton and Dunmore, with the largest pocket being just north of the intersection of Interstates 81, 84, and 380 near Dunmore. Other large concentrations of industrial uses are along I-81 in the southern and northern portions of South Abington Township. While only comprising 1.9%, or 1,041 acres of the SAPA area's land use, industrial uses are important to the economic health of the area. Significant industrial parks include the 390-acre Stauffer Industrial Park, developed in 1970 and located along the Scranton-Taylor Borough border. One of the newer industrial parks is Marvine Properties, which utilized the tax advantages of a Keystone Opportunity Zone off Exit 190 of I-81 in the City of Scranton.

Institutional Use

Government and community facilities, including fire stations, schools, and religious institutions, follow similar geographic characteristics to commercial and residential uses and are concentrated near city centers, such as Scranton, and along major roadway arteries like US Route 6/11. There are also a number of institutional uses that are scattered throughout the boroughs and townships and occur along smaller, local roads.

Transportation and Utilities

A network of highways, roads, and freight rail lines is visually apparent on the SAPA area's geography. These include the Northeast Extension of the Pennsylvania Turnpike, Interstate 81, and US Route 6/11. In addition, the Canadian Pacific freight rail line travels through Scranton and through the *Abingtons* adjacent to the US Route 6/11 corridor, while the Reading, Blue Mountain and Northern Railroad operates a rail line through Scranton and through the river area in Ransom and Newton Townships.

Chapter Two: Existing Conditions

EXISTING LAND USE

Through Scranton and Dunmore, the Pennsylvania Northeast Regional Railroad Authority (PNRRA) owns a freight rail line, but the operator of this line is the Delaware & Lackawanna Railroad. Most of the excursions from Steamtown National Historic Site use the PNRRA's tracks.

This category of land use also includes locations for water supply, wastewater disposal, and power generation.

Recreational and Open Space

Open space in the SAPA area encompasses golf courses, cemeteries, and recreation facilities. Recreational areas are scattered, with some concentration within the City of Scranton around the junction of PA Route 307 and Interstate 81, and also in the southernmost part of the city. Other locations of recreational use occur near I-81 in South Abington, the Abington Area Community Park located near the Clarks Summit State Hospital, and Lackawanna State Park in North Abington around PA Route 407. Golf courses are found near Country Club Road in Newton Township and Oakford Road in Abington.

Park and recreation facilities, whether publicly or privately owned, and open space lands are shown separately on the Existing Land Use map.

Agriculture and Vacant

The land use that comprises the vast majority of space in the SAPA area is vacant or agriculture. This category includes forestry. These uses comprise nearly 60% of all land or 32,244 acres. Agriculture is found mostly in the northern portions of the area, in townships such as Newton, North Abington, and West Abington.

Vacant land is more scattered and can be found in every municipality in one form or another. Vacant land provides opportunities for new open space and recreational uses, and for infill development in urbanized boroughs and the City of Scranton.

Chapter Two: Existing Conditions

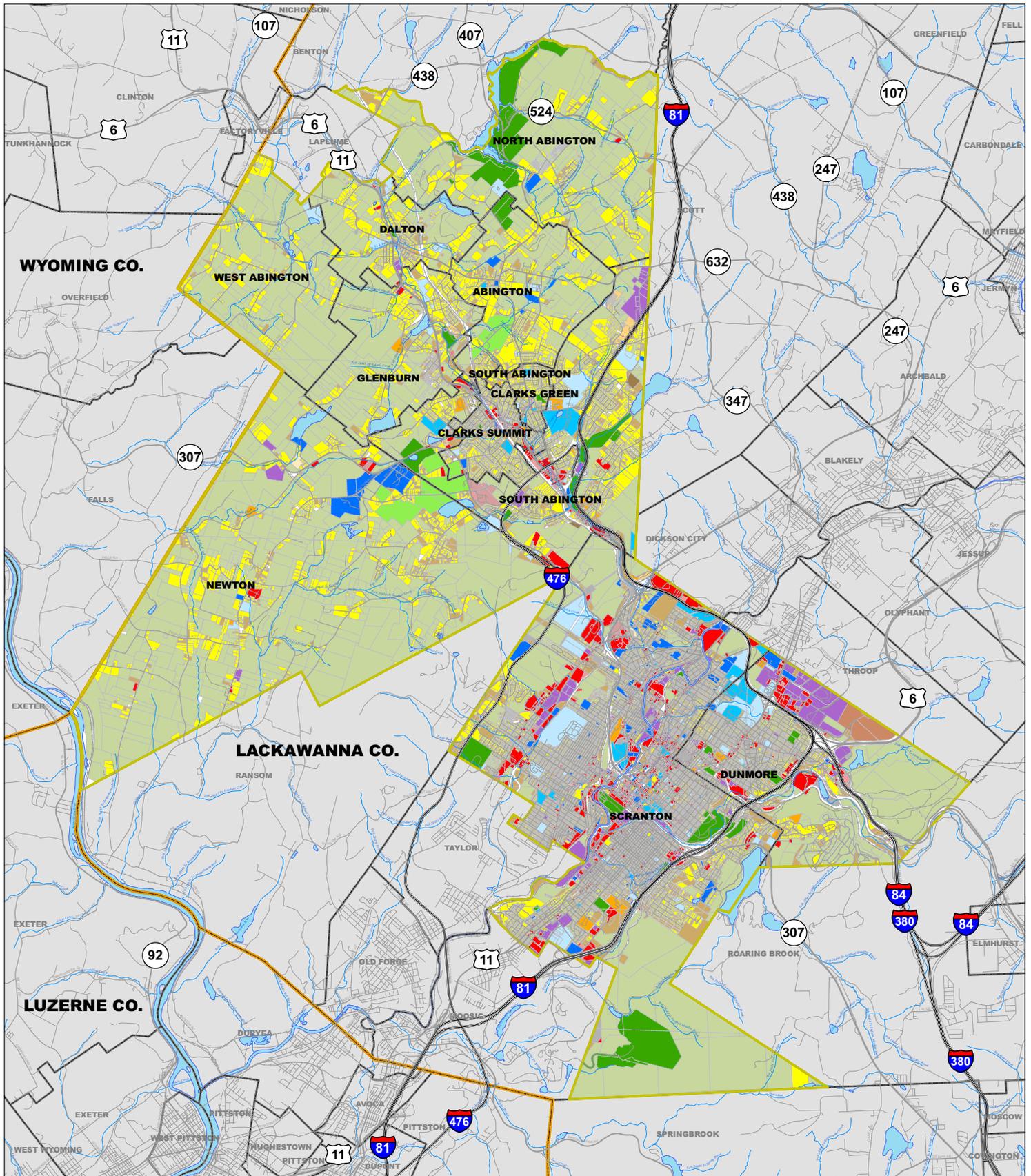
EXISTING LAND USE

Economic Development Zones

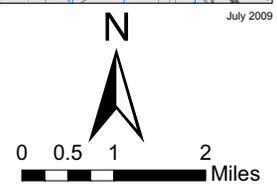
Keystone Opportunity Zones (KOZ) and Keystone Opportunity Enterprise Zones (KOEZ) were created under Pennsylvania legislation as economic development zones. These zones are defined, parcel-specific areas with tax-free or tax-abated provisions for property owners, residents, and businesses. KOZs have been designated by local communities and approved by the state. They are a partnership between each community and region among state and local taxing bodies, school districts, economic development agencies, and community-based organizations.

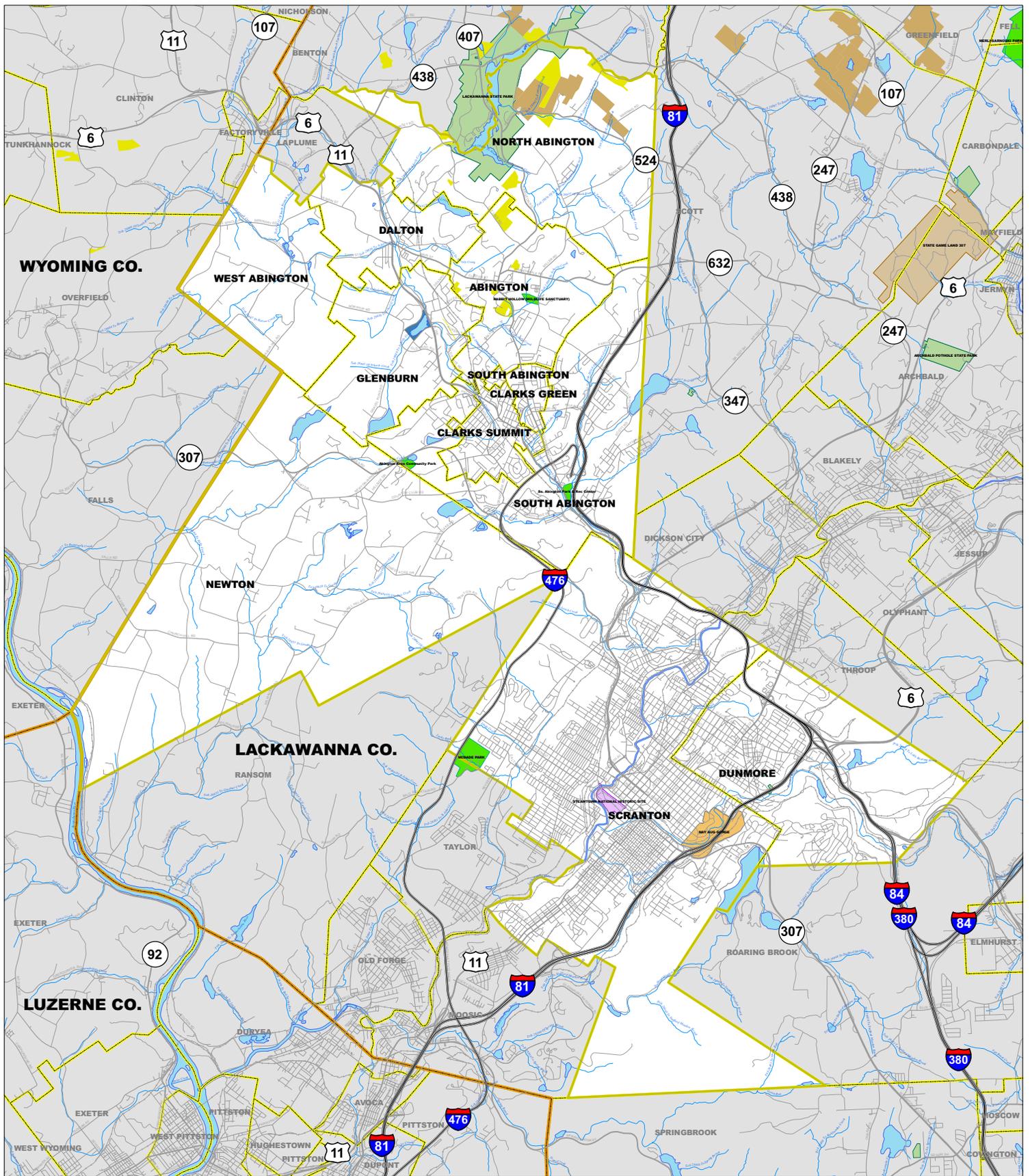
KOZs in the SAPA area are located primarily in the City of Scranton. KOZs appear around the northern portion of Scranton in between Interstate 476 and I-81 along Morgan Highway, and farther south along the Joseph M. McDade Expressway. There are a few other scattered zones just south along the same expressway farther towards downtown Scranton. Two other major KOZs are located along I-81 and Olyphant Avenue.

The KOEZs are distributed throughout Scranton, with tiny clusters near the city center along Lackawanna Avenue and Olive Street. There is a KOEZ in between two rail lines along Interstate 81 entering Scranton and another along Keyser Avenue. Finally the other two are located on the opposite edges of Scranton near Taylor Borough and Dunmore Borough.



Scranton-Abingtons Planning Association
 Comprehensive Plan
FIGURE 2.2.1
EXISTING LAND USE

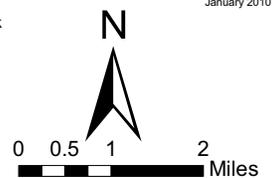




January 2010

**Scranton-Abingtons Planning Association
Comprehensive Plan
FIGURE 2.2.2
LAND PRESERVATION**

- | | |
|---|---|
|  Study Area Boundary |  National Natural Landmark |
|  Countryside Conservancy NEPA Protected |  County and Local Parks |
|  County/State Agricultural Land Preservation |  State Game Land |
|  National Heritage Site |  State Forest / Park |
|  Natural Lands Trust Conserved | |



Chapter Two: Existing Conditions

EXISTING LAND USE

Chapter Two: Existing Conditions

POPULATION, HOUSING, & EMPLOYMENT

SECTION 2.3: POPULATION, HOUSING, & EMPLOYMENT

Population forecasts are an essential part of planning for future growth, as they can be translated into approximations of the need for housing, community facilities, and other forms of development. Many factors are taken into account in making population forecasts and these factors are subject to constant change. The longer the future time period under study and the smaller the present population, the less reliable the forecasts may turn out to be. For instance, forecasts for individual municipalities are less dependable than those for a large region or the nation; five-year forecasts are usually more accurate than 15- or 20-year forecasts.

Population Trends

Recent population trends for Pennsylvania, Lackawanna County, and the eleven SAPA municipalities are presented in Tables 2.3.1 and 2.3.2. Over the 30-year period from 1970-2000, Lackawanna County experienced a steady decline in residents, representing 20,812 people or -3.1% of the total population. Similarly, the SAPA area experienced a declining population trend, with a decrease of 24,688 residents (-6.3%) during this time period. However, some individual SAPA communities saw extreme population growth, such as South Abington, which increased its population by 5,264 residents (41.4%), or significant growth on a percentage basis, like rural North Abington, which grew by 12.3 percent (229 residents). Certain portions of the SAPA area saw large decreases in population, like the City of Scranton, which lost 27,149 residents (-9.6%).

Chapter Two: Existing Conditions

POPULATION, HOUSING, & EMPLOYMENT

Table 2.3.1				
Lackawanna County and SAPA area				
Population Trends, 1970-2000				
	1970	1980	1990	2000
Abington Township	1,316	1,487	1,533	1,616
Clarks Green Borough	1,674	1,862	1,603	1,630
Clarks Summit Borough	5,376	5,272	5,433	5,126
Dalton Borough	1,282	1,383	1,369	1,294
Dunmore Borough	17,300	16,781	15,403	14,018
Glenburn Township	1,113	1,257	1,242	1,212
Newton Township	2,568	2,521	2,834	2,699
North Abington Township	553	619	691	782
Scranton City	103,564	88,117	81,805	76,415
South Abington Township	3,374	6,353	6,377	8,638
West Abington Township	309	295	294	311
SAPA Area	138,429	125,947	118,584	113,741
Lackawanna County	234,107	227,908	219,039	213,295
Pennsylvania	11,800,766	11,863,895	11,881,643	12,281,054

Chapter Two: Existing Conditions
POPULATION, HOUSING, & EMPLOYMENT

Table 2.3.2						
Lackawanna County and SAPA area						
Population Change, 1970-2000						
	1970-80		1980-90		1990-2000	
	<u>Number</u>	<u>Percent</u>	<u>Number</u>	<u>Percent</u>	<u>Number</u>	<u>Percent</u>
Abington Township	171	13.0%	46	3.1%	83	5.4%
Clarks Green Borough	188	11.2%	(259)	-13.9%	27	1.7%
Clarks Summit Borough	(104)	-1.9%	161	3.1%	(307)	-5.6%
Dalton Borough	101	7.9%	(14)	-1.0%	(75)	-5.5%
Dunmore Borough	(519)	-3.0%	(1,378)	-8.2%	(1,385)	-9.0%
Glenburn Township	144	12.9%	(15)	-1.2%	(30)	-2.4%
Newton Township	(47)	-1.3%	(15)	-0.6%	(135)	-4.8%
North Abington Township	66	11.9%	72	11.6%	91	13.2%
Scranton City	(15,447)	-14.9%	(6,312)	-7.2%	(5,390)	-6.6%
South Abington Township	2,979	88.3%	24	0.4%	2,261	35.5%
West Abington Township	(14)	-4.5%	(1)	-0.3%	17	5.8%
SAPA Area	(12,482)	-9.0%	(7,363)	-5.8%	(4,843)	-4.1%
Lackawanna County	(6,199)	-2.6%	(8,869)	-3.9%	(5,744)	-2.6%
Pennsylvania	63,129	0.5%	17,748	0.2%	399,411	3.4%

Chapter Two: Existing Conditions

POPULATION, HOUSING, & EMPLOYMENT

Age Characteristics

According to data compiled by the U.S. Bureau of the Census, the SAPA area is aging (Table 2.3.3). The median age of residents rose from 37.7 years old in 1990 to 40.3 years in 2000. The proportion of the population in the age group 25-44 decreased by nearly five percent, while the proportion of the population in the age group 45-64 rose more than fifteen percent.

Table 2.3.3

SAPA Area

Population by Age Groups, Median Age (1990-2000)

<u>Age Groups</u>	1990		2000	
	<u>Number</u>	<u>Percent</u>	<u>Number</u>	<u>Percent</u>
0-4	7,086	6.0%	6,022	5.3%
5-14	13,981	11.8%	14,203	12.5%
15-24	17,597	14.8%	16,550	14.6%
25-44	32,081	27.1%	29,291	25.8%
45-64	23,298	19.6%	25,706	22.6%
65-74	13,552	11.4%	10,174	8.9%
75+	10,989	9.3%	11,795	10.4%
TOTALS	118,584	100.0%	113,741	100.0%
Median Age	37.7 years		40.3 years	

Chapter Two: Existing Conditions

POPULATION, HOUSING, & EMPLOYMENT

Housing Units

According to the 2000 U.S. Census, there were 46,076 occupied housing units in the SAPA area, virtually the same figure as in 1990 (Table 2.3.4). There was, however, a major increase in vacant units, occurring mainly in urban areas. From 1990 to 2000, 1,382 additional vacant units were in place in the SAPA area, rising from 3,356 units to 4,738 units.

Most housing units were the single-family detached type, representing over half of the total units (52.0%). This was the only housing type that increased its numbers from 1990 to 2000, from 23,562 to 26,447 units. Two-to-four-family buildings represented 29.8% of all units, although the total number decreased from a 32.1% share of housing units in 1990.

Table 2.3.4
SAPA Area
Housing Unit Inventory (1990-2000)

Structural Type	1990		2000	
	Number	Percent	Number	Percent
Single-Family Detached (Units)	23,562	47.7%	26,447	52.0%
Single-Family Attached (Units)	2,827	5.7%	2,686	5.3%
Two to Four Family Buildings (Units)	15,848	32.1%	15,147	29.8%
Five or more Family Buildings (Units)	6,188	12.5%	6,323	12.4%
Mobile Homes (Units)	209	0.4%	195	0.4%
Other	789	1.6%	16	0.0%
TOTALS	49,423	100.0%	50,814	100.0%
Total Occupied Housing Units	46,067		46,076	
Total Vacant Housing Units	3,356		4,738	
Average Household Size	2.72		2.55	

Chapter Two: Existing Conditions

POPULATION, HOUSING, & EMPLOYMENT

Population Forecasts

The following section provides several alternative forecasts of population change for the SAPA area through the planning horizon date of 2030. Forecasts were made using available data, including forecasts and projections done by two organizations, the Pennsylvania Department of Environmental Protection (PaDEP) and the Center for Rural Pennsylvania (Table 2.3.5).

Alternative 1 includes data that was derived originally from the Act 220 State Water Plan, which was prepared by the PaDEP in order to gauge future levels of demand for water. For the SAPA area, the population is projected to be 101,878 people in 2030, a decline of 11,863 or 10% from the year 2000.

Alternative 2 shows a change in population to 2030 based on the average growth rate of six counties combined (Lackawanna, Luzerne, Monroe, Susquehanna, Wayne, and Wyoming Counties) and applies this rate to the SAPA area. This data was extrapolated from growth trends and Center for Rural Pennsylvania 2010 & 2020 forecasts that show Lackawanna and Luzerne Counties losing approximately 4,184 and 1,380 people respectively or -2% and -0.4% in a period between 2000 and 2030, while the rest of the counties are expected to experience considerable growth. The six county total averages out to be a 16% increase, translating for the SAPA area to a gain of about 18,000 people.

Alternative 3 uses a growth rate based on Lackawanna County's population trends over the last 30 years and projects this rate forward on the SAPA base population for the Year 2000. The rate comes out to be -2% and the resulting SAPA area population loss between 2000 and 2030 would be 2,204.

Alternative 4 takes the actual growth rate Pennsylvania experienced from 1970-2000 and projects it out for the SAPA area for the next 30 years. The growth rate comes out to be 4% with a population increase for the SAPA area of 4,319 residents.

Chapter Two: Existing Conditions

POPULATION, HOUSING, & EMPLOYMENT

Table 2.3.5
Alternative Population Forecasts for the SAPA Area to the Year 2030

Alternative	1980	1990	2000	2010	2020	2030	2000 - 2030	
							Number	Percent
1. DEP State Water Planning Forecast	125,947	118,584	113,741	107,460	101,994	101,878	-11,863	-10%
2. Six County Average Forecast	125,947	118,584	113,741	119,428	125,399	131,669	17,928	16%
3. Lackawanna County Trends, 1970-2000	125,947	118,584	113,741	113,002	112,267	111,537	-2,204	-2%
4. Pennsylvania Trends, 1970-2000	125,947	118,584	113,741	115,163	116,602	118,060	4,319	4%
5. Average of SAPA Municipal Trends, 1980-2000	125,947	118,584	113,741	106,917	100,502	94,471	-19,270	-17%
6. Average of SAPA Municipal Trends, 1980-2000, Adjusted	125,947	118,584	113,741	125,115	137,627	151,389	37,648	33%
7. Average SAPA Municipal Trends, 1970-2000	125,947	118,584	113,741	112,742	114,895	121,556	7,815	7%

Alternative 5 factors in the average actual growth rate of the eleven-municipality SAPA area, taking the average rate of each community for the past 20 years between 1980 and 2000 and then averaging those rates together. The result for the SAPA area is the largest decrease in expected population among the seven alternatives, namely a 17% decline and a loss of 19,270 people.

Alternative 6 uses the average actual municipal growth rate among the SAPA municipalities in the last 20 years from 1980 to 2000 in a similar manner to *Alternative 5* but omits entries for Scranton and Dunmore, which both

Chapter Two: Existing Conditions

POPULATION, HOUSING, & EMPLOYMENT

experienced significant growth decreases. The average growth rate excluding those two municipalities is 33%, meaning that the SAPA base population for the Year 2000 would see a population increase of 37,648 people by the Year 2030.

Alternative 7 factors in the average actual growth rate of the eleven-municipality SAPA area, taking the average rate of each community for the past 30 years between 1970 and 2000 and then averaging those rates together. The growth rate equals approximately 7% and for the SAPA area the Year 2030 would see an additional 7,815 residents over the Year 2000.

Housing Units to be Constructed

Based on the forecasts presented above, estimates of the number of housing units to be constructed over the period from 2000-2030 have been made (Table 2.3.6). The estimates are based on three forecast ranges of population: a “low” estimate of 114,000 residents, a “medium” estimate of 117,000 residents, and a “high” estimate of 120,000 residents. These ranges were determined by the SAPA Committee to be reasonable. While the forecast for growth in the SAPA area as a whole is not anticipated to be as robust as for parts of Monroe County or even some suburban areas within the SAPA area, the area is anticipating some growth based on continued population gains in the *Abingtons* coupled with revitalization in Scranton and Dunmore.

The estimates of the number of housing units to be constructed assumes that 96% of the population will live in households, that the average number of persons per household will be 2.40, that vacant units will comprise 8% of the total housing stock, and that there will be a modest need to replace some of the existing housing stock over the planning period. (Figures used are consistent with the U.S. Bureau of the Census for Lackawanna County for 1980, 1990, and 2000 and area population and housing trends.)

Chapter Two: Existing Conditions

POPULATION, HOUSING, & EMPLOYMENT

Applying the methods used in this table to the baseline populations yields figures for Housing Units to be Constructed from 2000 to 2030 that range from a “low” of 276 units to a “high” of 2,884 units, with a “medium” estimate of 1,580 units. The pace of housing construction from 1990 to 2000 was actually even higher than the “high” rate assumes, but was coupled with housing abandonment (see Table 2.3.4 and Section 2.4). Over the planning period, a pattern of housing rehabilitation is assumed to occur, as opposed to abandonment, putting something of a damper on aggressive new construction but contributing to revitalization of older communities.

Table 2.3.6
Housing Units to be Constructed in the SAPA Area, 2000-2030

	"Low"	"Medium"	"High"
-			
Population Projection, Year 2030	114,000	117,000	120,000
Population in Households (96%)	109,440	112,320	115,200
Persons per Household	2.40	2.40	2.40
Occupied Housing Units (Population in HH/Persons per HH)	45,600	46,800	48,000
Vacant Units (8%)	3,965	2,543	2,609
Total Housing Units Required	49,565	50,870	52,174
Existing Stock, Year Round Housing Units, 2000	50,814	50,814	50,814
Net Additions to Housing Stock	(1,249)	56	1,360
Replacement of Existing Stock (4%)	2,033	2,033	2,033
Conversions (1%)	-508	-508	-508
Total Housing Units to be Constructed, 2000-2030 (30 years)	276	1,580	2,884
Average Number of Housing Units to be Constructed per Year (2000-2030)	9	53	96

Chapter Two: Existing Conditions

POPULATION, HOUSING, & EMPLOYMENT

Non-residential Development Forecasts

SAPA municipal representatives reported that from 1995 to 2007 a total of 108 acres of non-residential development occurred in the area. This total represents an average rate of 9 acres of development per year.

Projecting the recent rate of non-residential development forward to the year 2030, about 207 acres of new development would occur. In contrast, increasing that rate by 50% would yield some 311 acres of new development and doubling that rate would produce 414 acres of development. Assuming a somewhat higher rate of growth in non-residential development over the next 22 years versus a recent dozen years, about 300 acres of future non-residential development would occur by the year 2030.

The future development of 300 acres may be divided into three broad subcategories that generally reflect the distribution of employment in Lackawanna County by business sector in the 2000 Census. Using this distribution, industrial/business park use would increase by about 125 acres, retail use by about 100 acres, and office use by about 75 acres.

These forecasts for future non-residential development were done for general planning purposes with the understanding that actual economic development activity within the SAPA area, and therefore actual non-residential development, could differ substantially from that assumed above.

Chapter Two: Existing Conditions

PATTERN OF CHANGE

SECTION 2.4: PATTERN OF CHANGE

The SAPA area has experienced mixed results when it comes to new residential, office, and retail development since 1995. Some uses saw relatively heavy activity, such as residential, which saw 2,220 acres developed, or almost 84% of the total new development acreage of that period, while other sectors were light, such as office, which saw only 1 acre of new development. Recent development has been scattered among the SAPA municipalities, with residential developments occurring mostly in the *Abingtons* and some limited retail development along the US Route 6/11 corridor. The City of Scranton saw some residential development, but mostly institutional or retail, while Dunmore developed a few large tracts of residential uses and some retail. The type, location, and year of the developments are shown on the Recent Development map (Figure 2.4.1).

Residential Use

Out of the total 2,429 acres recently developed, the vast majority has been residential development. Residential construction was largely single-family detached unit developments totaling 584 units on 2,036 acres of land. Single-family attached housing saw a much lower level of development than the detached housing, creating an additional 184 acres of development that included 219 units.

Taken together, the population and housing trends described in the previous sections showed no significant net increase in housing units but a major increase in vacant housing units. This shows a pattern of change towards abandonment of housing in older urban areas offset by construction of new housing in suburban and rural areas. This trend is further demonstrated by the demographic shift of population out of older urban areas and into newly-developing suburban and rural areas.

Chapter Two: Existing Conditions

PATTERN OF CHANGE

Commercial, Business Park, and Industrial Use

Commercial, business park, and industrial development accounted for only 108 acres, or 4.4% of all the development in the past twelve years. The majority of the development reported has occurred along Blakely Street in Dunmore and in various portions of South Abington, Clarks Summit, and Clarks Green. One of Scranton's newest industrial parks is Marvine Properties, developed on 82 acres of land off Exit 190 of Interstate 81. This property is located entirely within a Keystone Opportunity Zone and has 13 lots for development.

Parks and Open Space Use

The majority of the acreage of permanent open space, about 52 acres, has come through the Natural Lands Trust, which conserved 51 acres of land around the Glenburn Pond. In addition, since 1995 Countryside Conservancy has acquired ownership of 183 acres in Abington, North Abington, and South Abington Townships, most of which is open for public access. The Conservancy has also acquired conservation easements on 217 acres of private land in Abington and North Abington Townships and, although not all is open for public access, these lands will remain in their current state of development.

Institutional Use

There have been numerous institutional developments since 1995, totaling 49 acres. The largest and most prominent development was the new 1,800-student Scranton High School facility, located in the middle of Scranton near Providence Road, and the Joseph M. McDade expressway. There were numerous school additions and renovations by the Abington Heights District, as well as a public library and fire hall in the *Abingtons*.

Chapter Two: Existing Conditions

PATTERN OF CHANGE

Pending and Proposed Development

Pending and Proposed development includes development proposals that have been approved but not built and proposals that are at some stage within the subdivision and land development process (Figure 2.4.2). The pending and proposed development totals about 672 acres of land scattered throughout the SAPA area, following similar characteristics as the recent development, with residential development proposed for the suburban/rural municipalities and some retail/commercial development along the main strip of US Route 6/11 and in Center City Scranton.

Included are several prominent residential developments in the 40- to 60-acre range, some with single-family attached and some with single-family detached dwellings. Of the nonresidential developments, one of the most noteworthy may be Commonwealth Medical College on Pine Street in Scranton. Construction is currently underway and is to be completed in 2011.

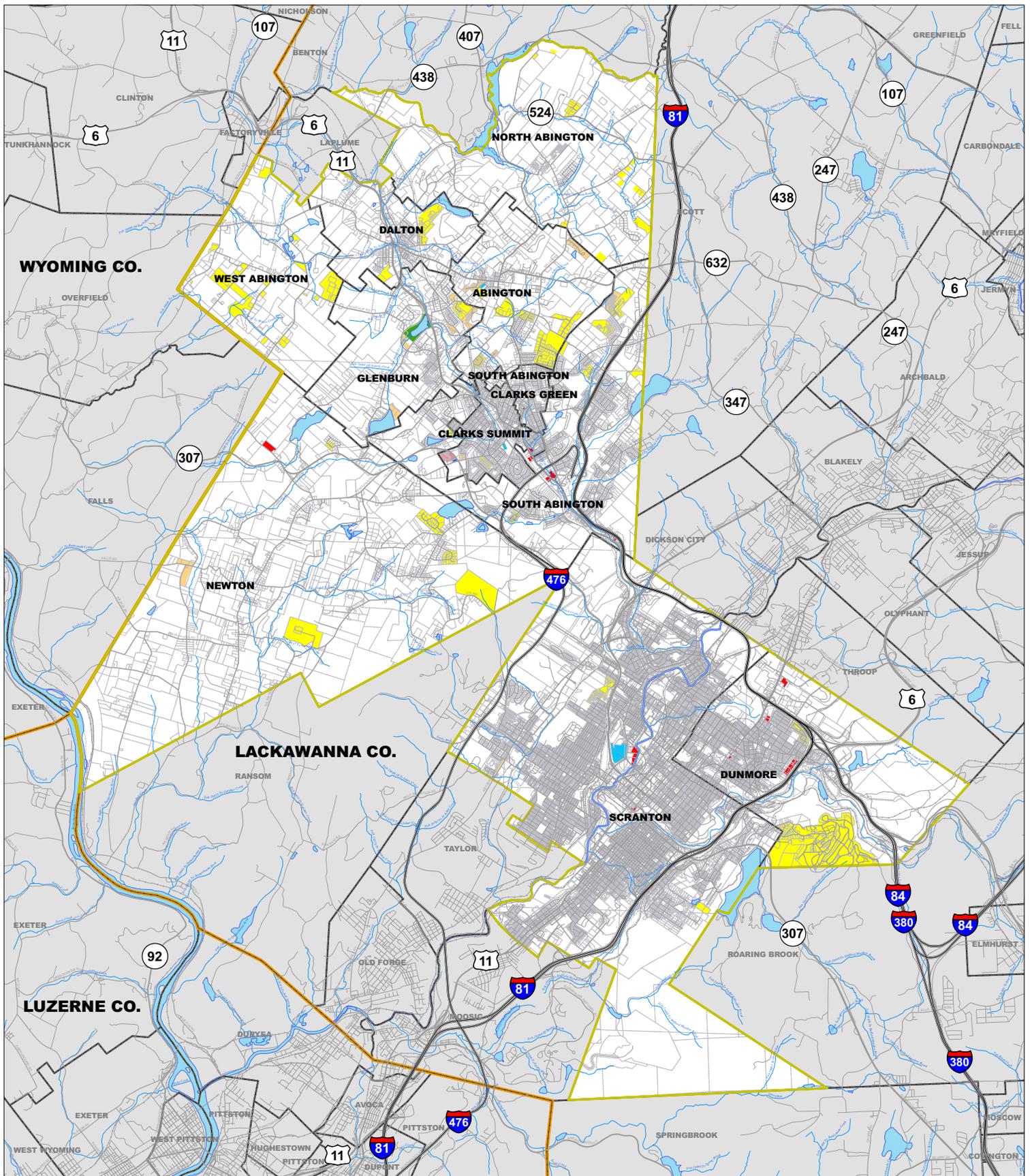
Within Scranton, other significant planning is occurring. The Lackawanna Riverfront Development Project is a partnership effort of Scranton Tomorrow, Lackawanna Heritage Valley Authority (LHVA), Lackawanna River Corridor Association (LRCA) and the Scranton Area Foundation (SAF). The project objective is to implement a comprehensive master plan for the development of a downtown riverfront district/river walk, thereby fostering economic development and improving the local quality of life. The entirety of the Lackawanna Riverfront Development project boundaries is as follows: Parker Street to the north; Bridge 60 to the south; Mifflin/Gordon Avenue to the east; and 7th Avenue to the west. Phase One development will be within the Riverfront Park Investment Zone, bounded by the Lackawanna River to the east, Olive Street to the north, 7th Avenue to the west, and Providence Road to the south. The combination of a high degree of public ownership of land in this area and its relative flatness makes it appropriate for a new park with a longer-term goal for 7.8 acres of mixed-use lands to go along with 13.5 acres of parkland, and 2,000 linear feet of new roads.

Chapter Two: Existing Conditions

PATTERN OF CHANGE

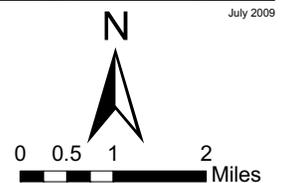
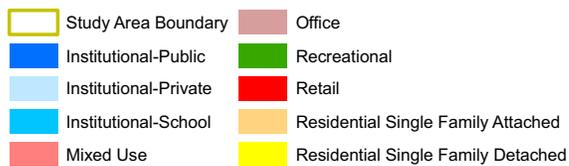
A renovation of the Scranton Lace Works complex, located in the Green Ridge area of Scranton, is to include 250 loft apartments, a 45,000-square-foot fitness facility, 40,000 square feet of commercial office space, a 10,000-square-foot restaurant, and 45,000 square feet of retail space. The renovation project will also include the Artspace Scranton project led by Scranton Tomorrow, which will transform a portion of the historic building into a 35-unit residential building designed to meet the space needs of artists and their families.

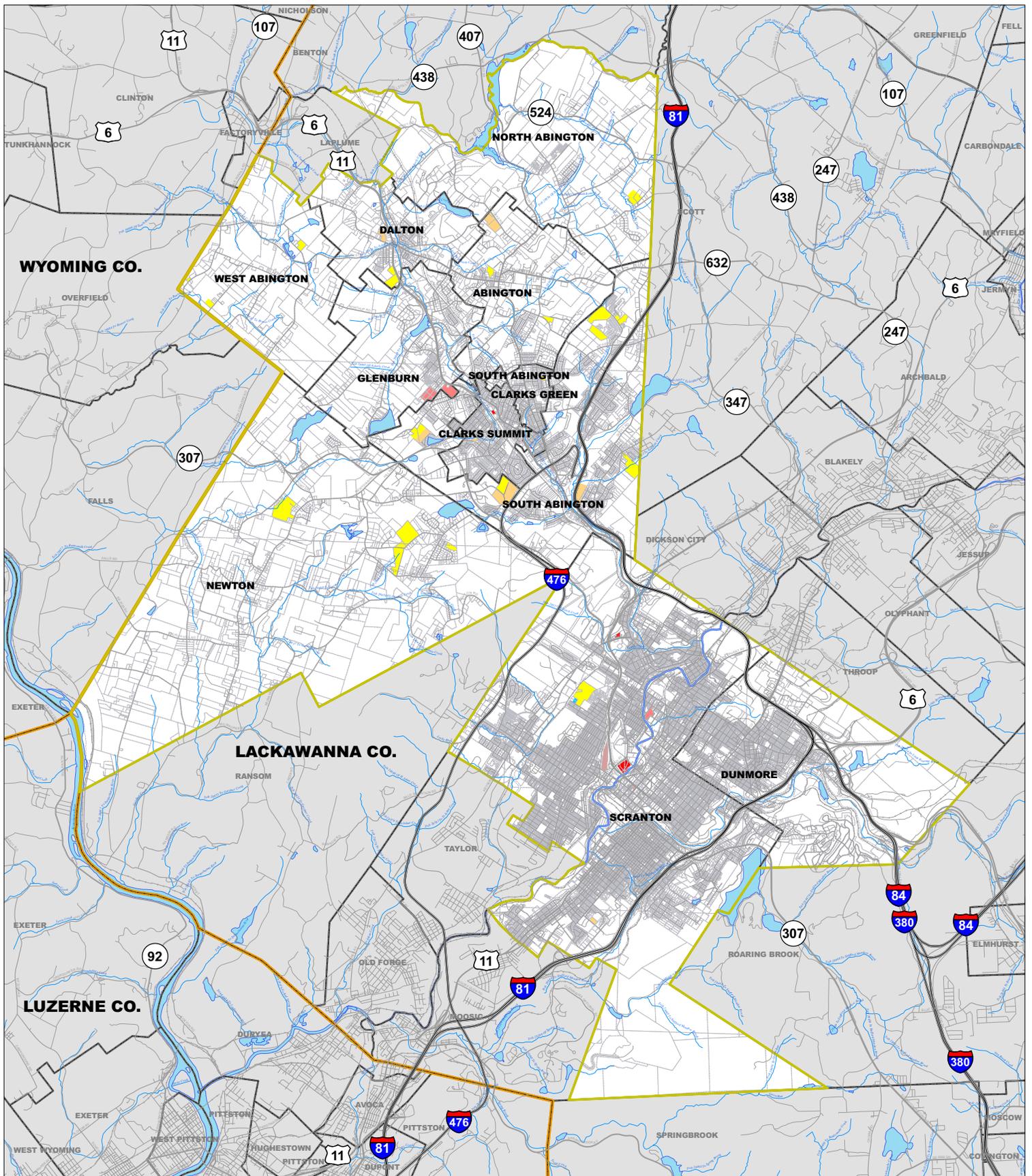
An additional potential development along the river corridor in Scranton is the Cooperative Farmers Market on Albright Avenue. Located in the Sandy Banks development zone of the Riverfront Master Plan, the Farmers Market is proposed to be upgraded into a year-round facility with an expanded offering of goods.



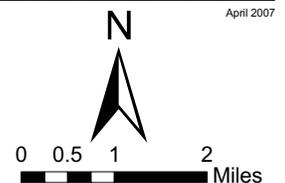
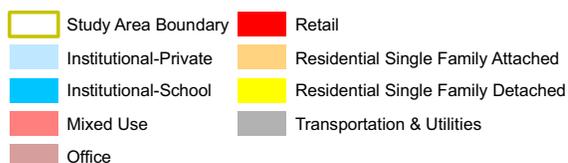
**Scranton-Abingtons Planning Association
Comprehensive Plan**

**FIGURE 2.4.1
RECENT DEVELOPMENT**





Scranton-Abingtons Planning Association
 Comprehensive Plan
FIGURE 2.4.2
PENDING AND PROPOSED
DEVELOPMENT



Chapter Two: Existing Conditions

TRANSPORTATION

SECTION 2.5: TRANSPORTATION

The information provided in this section describes the transportation network in the SAPA area. It includes a discussion of the functional and jurisdictional classification of the roadways, traffic demands, public transportation options, and the bicycle and pedestrian network. This analysis focuses on the major components of the transportation network that facilitate transportation within and outside the SAPA area. It is not intended as an examination of local streets.

The region's transportation network provides accessibility that has been a dominant factor for development over the years and continues to play a key role in the location and intensity of development. Several major highways cross the region, generally from north to south. These include the Pennsylvania Turnpike's Northeast Extension (I- 476), which ends in the central section of the SAPA area in South Abington Township; I-81, which acts as a north/south spine through the SAPA area; I-380 and I-84, which run together and then converge with I-81 near Dunmore; and US Route 6/11, connecting Scranton and Dunmore to the *Abingtons* and extending northward.

The Pennsylvania Turnpike's Northeast Extension ends at the Clarks Summit/South Abington interchange. From here, motorists may make a connection to I-81, which provides a direct link northward into New York State. The SAPA area's interchanges with the Turnpike and I-81 provide the SAPA area with superb access to important regional highways. This high degree of accessibility has directly influenced the location of commercial and industrial development along the highway corridors and has increased the desirability of residential development in its vicinity.

US Route 6 is an important regional highway that historically provided access to this area. Today, it is a major tourism and commercial corridor, and is designated as a scenic highway. The PA Route 6 Heritage Corridor Management Action Plan (2004) includes items regarding streetscapes, economic development, historic preservation, landscape preservation, trails, heritage tourism, signs/markers, and more:

http://www.paroute6.com/docs/Management_Action%20Plan.pdf

Chapter Two: Existing Conditions

TRANSPORTATION

Other important roads in the SAPA area network include US Route 11, PA Route 307, and PA Route 407, all of which provide linkages to adjacent municipalities and connect to other roadways as part of the regional system.

Functional Classification

Functional classification describes a roadway's purpose. These classifications include expressways, arterials, collectors, and local roads. As one moves downward through the hierarchy of roadway classifications from expressway to local road, the expected traffic volumes and speeds decrease and the level of access from adjacent properties to the roadway increases.

Expressways are limited access highways intended to move large volumes of traffic at relatively high rates of speed over substantial distance. Arterials have some similarities to Expressways in that they move large volumes of traffic and, although they do allow property access, mobility is more important. Arterials may be used for some local trips but are primarily used for longer trips. Some of the differences between Major and Minor Arterials include that Major Arterials may be longer roads, have higher traffic volumes, a lesser focus on property access, and may have median control or turning lanes. Collectors are smaller roads that are intended to balance property access with mobility. These roads are intended to be used to access the higher order roadways and often to reach destinations within a community. Distinctions between Major and Minor Collectors include that Major Collectors are longer and carry more traffic. Local roads are intended to provide direct access to properties and be used for short trips to destinations or to enter the higher order roadways for longer trips.

Functional Classification is a planning tool used for reasons ranging from determining setback regulations, right-of-way preservation, access management regulations, road design standards, intersection separation distance, and scenic road designations. In some cases, such as PA Route 307, the functional classification of a roadway will change based on its relationship to the surrounding land uses.

Chapter Two: Existing Conditions

TRANSPORTATION

Figure 2.5.1 shows the Functional Classification of SAPA roadways. Table 2.5.1 lists the Functional Classification of many of the major roadways. The source for the classifications shown and listed is the Pennsylvania Department of Transportation.

Table 2.5.1	
Functional Classification of Roadways	
Roadway	Classification
Interstate	I-476 (Pennsylvania Turnpike)
	I-81/US 6
	I-84/I-380
Expressway	US 6 (Dunmore)
	Central Scranton Expressway
	US 11/PA 307 (Scranton)
Principal Arterial	US 6/US 11 (South Abington and north)
	US 11 (south Scranton)
	PA 307 (mid Scranton)
	PA 347
	Main Avenue* (north Scranton)
	Keyser Avenue
	Davis Street
	Green Ridge Street
	PA 407
Minor Arterial	Grove Street
	PA 307 (Scranton north)
	Shady Lane
	Layton Road
	Main Avenue
	Providence Road
	Sanderson Avenue*
	Monsey Avenue*
	Wyoming Avenue
	Jefferson Avenue
Clay Avenue	
South Washington Avenue	

Chapter Two: Existing Conditions

TRANSPORTATION

	Pittson Avenue
	River Street*
	Luzerne Street*
	Broadway Street*
	Third Avenue*
	Lackawanna Avenue*
	Linden Street
	Mulberry Street
	West Poplar Street*
* municipally maintained roadway	

Traffic Volumes

Average Annual Daily Traffic (AADT) counts have been compiled by PennDOT for the SAPA area. Some volumes are stated as ranges, acknowledging that the actual traffic volumes will vary by roadway segment, based on travel patterns. In the SAPA area, the highest traffic volumes are carried by the Interstate routes. The most heavily traveled route is I-81, with the highest volumes south of the Clarks Summit interchange of the Pennsylvania Turnpike Northeast Extension I-476 (78,000 vehicles per day) and again south of I-84 (79,000 vpd). Interestingly, the volumes between these two segments are 8,000 to 10,000 vehicles per day lower. The Pennsylvania Turnpike Northeast Extension carries approximately 7,800 vehicles per day south of its terminus. The Principal Arterials within the SAPA region carry between 14,000 (Main Avenue and US Route 6/11 north) and 20,000 vehicles per day (US Route 11/Pittson Avenue pair and PA 347).

Roadway Projects

Several significant PennDOT roadway projects are in progress or being studied for implementation in SAPA communities and the vicinity, as follows:

- I-81 widening and Central Scranton Expressway interchange project from River Street to Davis Street will add a third lane to I-81;
- Signal project along SR 347 in Dunmore will interconnect signals to improve corridor operations;

Chapter Two: Existing Conditions

TRANSPORTATION

- SR 6 Betterment project from Old Turnpike Road to Gravel Pond Road will widen and rehabilitate SR 6 through the SAPA study area;
- Signal project in the Scranton Central Business District will upgrade and interconnect 50 signals in downtown Scranton;
- Lackawanna Avenue bridge project will replace the bridge over the Lackawanna River and adjacent railroad tracks;
- I-81 Main Avenue River Bridge rehabilitation project.

Corridors of Concern

Over the course of the planning process the Scranton-Abingtons Planning Association identified several areas of specific concern regarding transportation. The following locations were included:

Mulberry Street (Scranton)

Mulberry Street is an east-west roadway through central Scranton. To the east, Mulberry Street provides travel lanes with on-street parking, serving a dense residential neighborhood. As Mulberry Street approaches central Scranton it passes through the University of Scranton and the character of the street changes, with the on-street parking removed in favor of auxiliary turning lanes and then an additional travel lane. Between Jefferson Avenue and Wyoming Avenue two travel lanes are provided in each direction, with no on-street parking and no turning lanes. West of Wyoming Avenue, the cartway widens, consistent with a more suburban arterial-type roadway, and provides direct access to the limited access portion of US 6/11. Sidewalks are provided on both sides of Mulberry Street for its entire length, however there are sections where the pedestrian facilities are in disrepair. Additionally, pedestrian crossings are generally non-compliant with current standards. This last aspect is of note considering the appreciable elderly population in the immediate vicinity of Mulberry Street. The ADT on Mulberry Street is approximately 16,000 vehicles per day, which is at the limits of the capacity for the two-lane sections of the road. Vehicular flow is also constrained by the lack of turn lanes in the four-lane section.

Chapter Two: Existing Conditions

TRANSPORTATION

Blakely Street (Dunmore)

Blakely Street is a north-south roadway through central Dunmore, providing access from Scranton to the south and various municipalities to the north. Immediately north of central Dunmore, Blakely Street provides access to US 81. Blakely Street is a two-lane road with left turning lanes provided at key intersections, including Drinker Street and Green Ridge Street. On-street parking is provided along the east side of Blakely Street, immediately south of Drinker Street. Sidewalks are provided along both sides of Blakely Street. The ADT on Blakely Street is approximately 16,000 vehicles per day, which exceeds the capacity of the two-lane sections of the roadway. The resulting congestion is most pronounced at the Drinker Street intersection, where extensive peak period queuing occurs on both the northbound and southbound approaches.

US Route 6/11 (Clarks Summit)

US Route 6/11 provides regional access from Scranton to points north and west but within Clarks Summit this roadway serves as the local Main Street. Through Clarks Summit, the ADT of the roadway is approximately 14,000 vehicles per day, which is at the upper limits of the roadway's capacity. While the congestion resulting from the high traffic volumes is a concern, of equal concern is the impact of trucks and other large vehicles, which have a negative effect on the roadside environment through the center of Clarks Summit. US Route 6/11 was studied extensively as part of the Abington Area Transportation Planning Study (Orth-Rodgers, 2004). This study included a series of short and long-term recommendations ranging from intersection capacity improvements to the investigation of tolling regional routes and developing bypasses. To date none of the short-term vehicular recommendations have been implemented, other than rerouting PA 407 from Grove Street to South Abington Road.

Public Transportation

The County of Lackawanna Transit System (COLTS) serves the City of Scranton and surrounding areas of Lackawanna County Monday through Saturday. The current transit system operates a 32-bus fleet plus contract

Chapter Two: Existing Conditions

TRANSPORTATION

service for para-transit and “welfare-to-work” service. Over half of the riders are senior citizens who ride for free; COLTS is reimbursed through the state lottery proceeds. COLTS subcontracts to NE Transit for the “welfare-to-work” service and Lackawanna County Coordinated Transportation buses handle para-transit for the elderly or physically disabled.

COLTS offers specialized evening services through a private operator from 8:00 pm to midnight in the Scranton-Dunmore area.

COLTS operations include the following routes:

- 12 Jessup
- 14 Drinker
- 15 Chestnut/Ash
- 18 Petersburg
- 21 East Mountain
- 22 Wintermantle
- 23 Oakmont
- 25 Valley View
- 26 Hilltop
- 27 Minooka
- 31 Old Forge
- 32 Sibley
- 33 Taylor/McDade
- 35 Keyser Valley
- 36 Lafayette
- 38 Oram
- 41 High Works
- 43 Bangor
- 44 Viewmont Mall
- 48/49 Dalton Waverly
- 53 Marywood
- 54 Green Ridge

Chapter Two: Existing Conditions

TRANSPORTATION

A trolley line for short tourism excursions travels on the Laurel Line from downtown Scranton (Steamtown yards) to the baseball stadium southeast of the city.

Airports

The Wilkes-Barre/Scranton International Airport (AVP) sits nestled between I-476 and I-81, just nine miles south of center city Scranton in Luzerne County. Operating both a 7,501-foot runway and a 4,300-foot runway, the airport provides service via major airlines. The airport is in operation 24-hours a day, year round.

Just outside of the northern border of North Abington Township are two smaller airports. Seamans Field is a small craft airport with a 2,500-foot asphalt runway. Grayce Farms airport is situated just off of PA Route 107 and has a 2,200-foot turf strip.

The Lackawanna Cut-Off

In the early part of the twentieth century, the Delaware, Lackawanna, and Western Railroad constructed a level-graded route from Roxbury, New Jersey to just over the Delaware River to serve as a faster, more direct route between existing rail lines in Pennsylvania and New Jersey. The Lackawanna Cut-off, as this route came to be known, includes a series of unique structural features, viaducts, and massive fill embankments through the deep valleys of this region. In the 1970s, Conrail, the eventual receiver of this property, abandoned the right of way and parts of the track were removed. The objective of the Lackawanna Cutoff project is to reinstitute passenger rail service on the abandoned rail right-of-way of the Lackawanna Cutoff and over existing freight right-of-way in Pennsylvania. The reinstated rail line would provide service from Scranton to Hoboken, or to New York Penn Station via transfer to MidTown Direct service, by connecting to the existing NJ Transit Montclair-Boonton and Morris & Essex Lines.

Chapter Two: Existing Conditions

TRANSPORTATION

The project includes track and signal improvements to approximately 88 miles of right-of-way (incorporating reconstruction of the line to about 32 miles of right-of-way in New Jersey, from Port Morris to the Delaware River), new stations, parking facilities, a train storage yard, and additional rail rolling stock. It is assumed that NJ Transit would operate the new service. Proposed stations would serve Blirstown and Andover in New Jersey and Scranton, Tobyhanna, Pocono Mountain, Analomink, East Stroudsburg, and Delaware Water Gap in Pennsylvania.

NJ Transit's Board of Directors authorized consultant work for conceptual design, completion of the environmental assessment, and preparation of the documentation required by the Federal Transit Administration for new transit lines. The State of New Jersey completed the purchase of the Lackawanna Cutoff property in May 2001.

Pedestrian & Bicycle Mobility

The 2004 *Open Space, Greenways & Outdoor Recreation Master Plan* defined Recreational Corridors within the Scranton-Abingtons Planning Association area as including regional trails, local pathways, and sidewalks. These features are described below and may be found on Figure 2.7.5.

Regional Trails

Regional trails include the completed portion of the Lackawanna River Heritage Trail, which runs through southwest and northeast portions of Scranton (a section to run through the city center is proposed, but not yet built), and the Roaring Brook Corridor in the SAPA area's southeast corner. Proposed nearby trails include an extension of the Westside Bike Trail near the area's southwest corner, the Countryside Conservancy Trail near Clarks Summit, and the Pennsylvania Coal Company Gravity Railroad, near Dunmore.

Chapter Two: Existing Conditions

TRANSPORTATION

The Countryside Conservancy Trolley Trail is located along an abandoned electric trolley line. It is envisioned as a 7-mile hiking and biking trail extending from Clarks Summit to Factoryville, with future connections to Lake Winola. Trail development is in preliminary stages with easements and fee simple purchases procured for several segments.

Local Pathways and Sidewalks

Sidewalks exist within the existing city and borough centers and are most likely to occur within the older sections of the SAPA area. Newer subdivisions are less likely to include sidewalks as local municipalities have often chosen to waive their subdivision requirements to construct them.

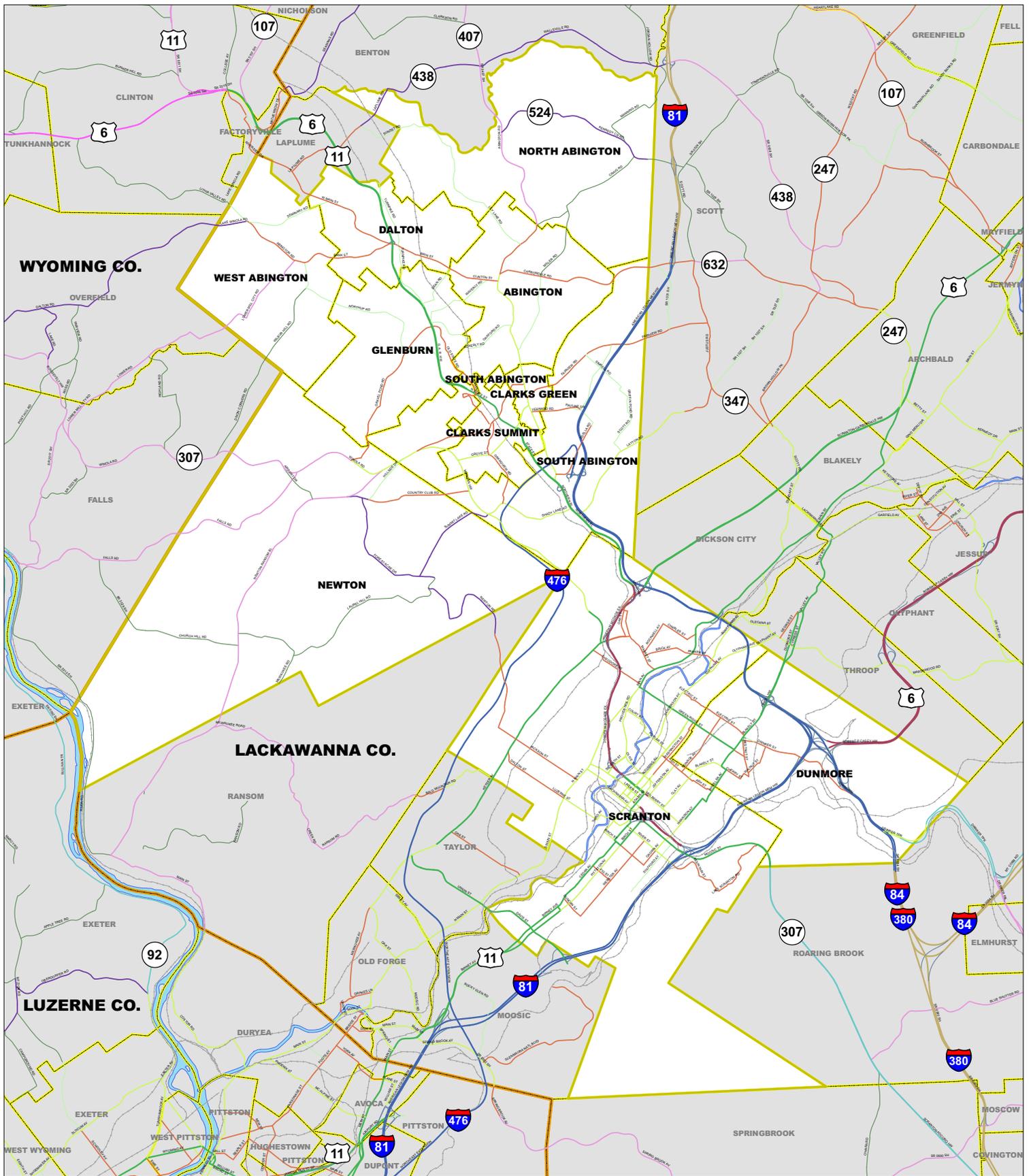
Bicycle Mobility

Bicycle mobility in SAPA communities is generally achieved through the local road network that is also heavily used by cars and other vehicles for daily commuting and other trips. The potential for conflict between bicycles and vehicles varies depending on roadway factors such as lane width, the availability of a shoulder, narrow over and underpasses, and traffic volumes.

However, in a recent statewide recreation needs survey conducted as part of the 5-year update to Pennsylvania's State Comprehensive Outdoor Recreation Plan, 72 percent of respondents identified outdoor recreation as important to them. In addition, 50 percent cited the need for increased bicycle paths near their residences and over 40 percent cited the need for increased walking paths, mountain bike trails, or hiking/backpacking trails near their homes.

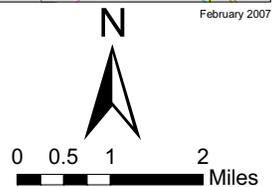
Current Trails

A more detailed description of current and planned trails can be found in the Community Facilities and Utilities Section, later in this chapter.

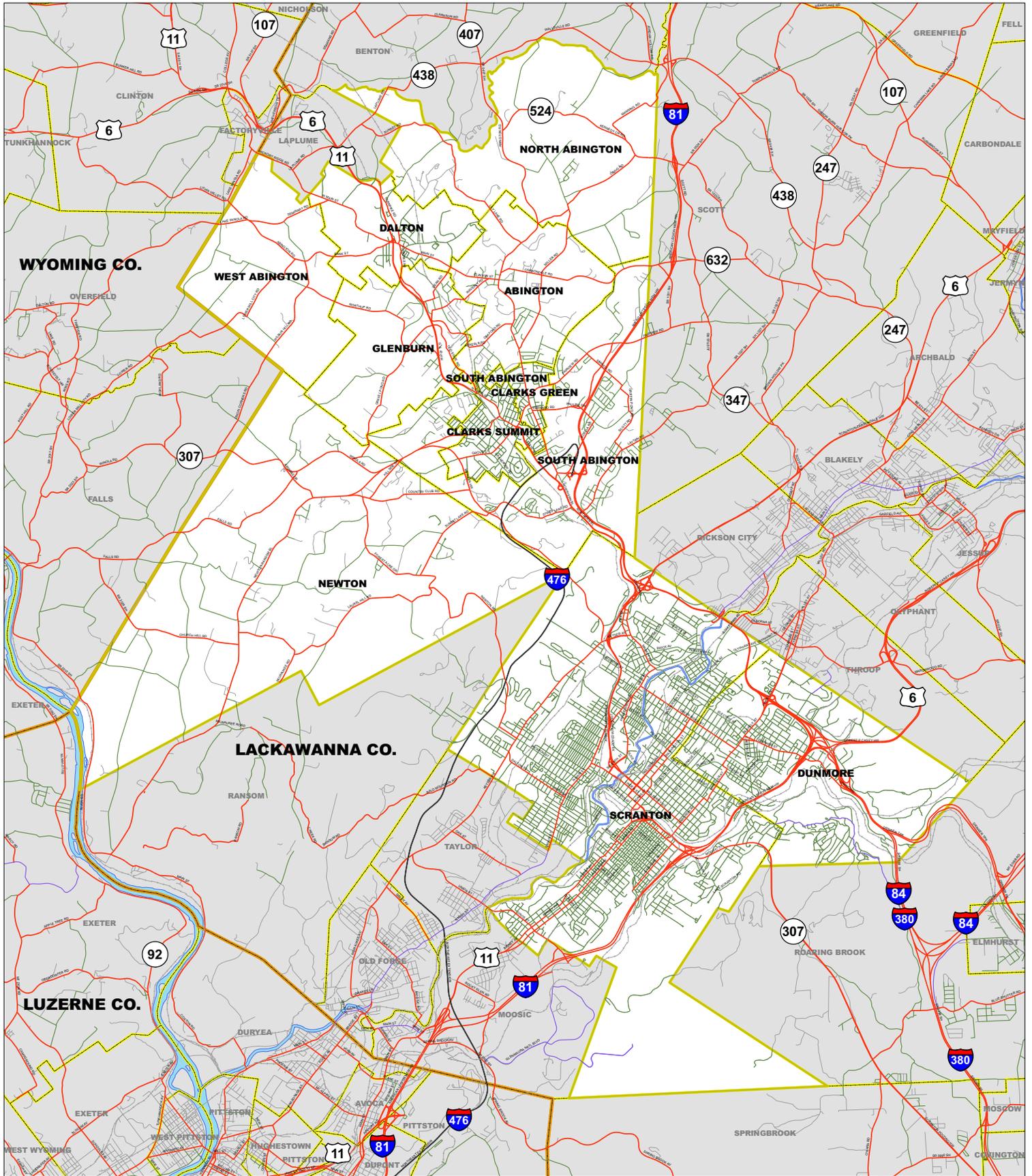


Scranton-Abingtons Planning Association
 Comprehensive Plan
FIGURE 2.5.1
FUNCTIONAL CLASSIFICATION

- Railroad
- Rural Principal Arterial-Interstate
- Rural Principal Arterial-Other
- Urban Principal Arterial-Interstate
- Urban Principal Arterial-Other
- Urban Other Principal Arterial
- Rural Minor Arterial
- Urban Minor Arterial
- Rural Major Collector
- Rural Minor Collector
- Urban Collector
- Rural Local
- Urban Local
- Ramp
- Study Area Boundary



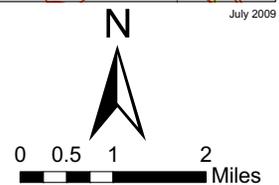
February 2007



Scranton-Abingtons Planning Association
 Comprehensive Plan

FIGURE 2.5.2
JURISDICTIONAL
CLASSIFICATION

- Study Area Boundary
- PA Turnpike (NE Extension)
- State Roads
- Municipal Roads
- County Roads
- Other Roads
- Railroad



July 2009

Chapter Two: Existing Conditions

NATURAL RESOURCES

SECTION 2.6: NATURAL RESOURCES

The natural characteristics of the landscape in the SAPA region have been an important factor in determining its historical pattern of development. Areas of significant physical constraint — floodplains, wetlands, and steep slopes — have generally been less likely to be subject to development. These natural features are not only current constraints for development, but they are also sensitive natural features that can become the focus for conservation and preservation activities. An inventory of environmental factors was completed as part of the inventory of existing conditions. These factors are critical components in any consideration of the balance between future preservation and future development.

Several analysis maps were prepared delineating these resources. This series of interrelated, interpretive maps has permitted the identification of areas requiring preservation, areas requiring conservation, and areas available for development within the SAPA area. Areas requiring preservation include creeks, floodplains, and other lands that should generally be considered undevelopable due to the presence of sensitive natural resources, physical characteristics or statutory regulations. Areas in need of conservation include important environmental areas such as wetlands, steep slopes, and woodlands. These valuable resources should be protected or conserved due to the environmentally-sensitive nature of these areas and because of their importance to the community. Agricultural lands are of great significance to the SAPA area owing to their economic importance and prominence on the landscape; the conservation of prime and locally important farmlands is a key component of planning for the future.

Natural resource information was combined and synthesized to illustrate the relative level of development constraints affecting various areas of the SAPA region and summarized into a Composite Constraints map for this Comprehensive Plan.

Chapter Two: Existing Conditions

NATURAL RESOURCES

Additional factors should be kept in mind when considering the issues of resource protection, such as, areas in need of conservation may also include a variety of man-made factors, as discussed in Section 7 of this chapter; these areas often include historic sites and scenic features.

Hydrology

The SAPA region drains mostly into the Lackawanna River, South Branch Tunkhannock Creek, and Susquehanna River. Clarks Green Borough, Dunmore Borough, Scranton City, and South Abington Township are mostly encompassed by the Lackawanna River watershed. Portions of Clarks Summit Borough, Newton Township and a very small portion of Abington Township are also a part of the Lackawanna River watershed. The majority of Newton Township drains to the Susquehanna River, as well as portions of Glenburn Township, South Abington Township, and West Abington Township. The South Branch Tunkhannock Creek watershed encompasses the remainder of the SAPA area, and includes Abington Township, Dalton Borough, Glenburn Township, North Abington Township, and portions of Clarks Summit Borough, South Abington Township, and West Abington Township. A map of the SAPA area and hydrologic features is provided in Figure 2.6.1.

In consideration of the future for the SAPA region, these drainage patterns are critical in the analysis of stormwater runoff as well as in planning for sanitary sewers. Other hydrologic characteristics contribute strongly to delineating areas that are available for development and those that are constrained for development. Of major concern are flood prone zones adjacent to bodies of water, and wetlands.

Development in floodplains is hazardous to life and property, not only for prospective development sites but in existing developed areas downstream that may be subjected to unexpected changes in creek channel location or in flood heights and velocities. The 100-Year Floodplain areas shown on the hydrologic features map have been identified by the Federal Emergency Management Agency (FEMA) under the National Flood Insurance Program.

Chapter Two: Existing Conditions

NATURAL RESOURCES

The most extensive floodplains occur in lowland areas, where watercourse gradients are less and landscape profiles are wider than on hillsides.

Floodplains for the tributary creeks tend to be relatively narrow. Floodplain soils are generally found adjacent to the creek network. These soils historically have been eroded, transported, and deposited by floodwaters and generally indicate an area susceptible to flooding. The Hydrologic Features Map illustrates the location of floodplains associated with the streams and watercourses in the area.

Wetlands are valuable natural resource areas because they control flooding, improve water quality, and support a wide variety of animal and plant species. Wetlands are characterized generally by a high water table, poor drainage, and some degree of surface ponding during the year. Wetlands are regulated by the U.S. Army Corps of Engineers and the Pennsylvania Department of Environmental Protection. Essentially, no development activity may occur in a wetland area without a permit. The permit process requires an investigation of development alternatives. Mitigation may be required if development is to proceed; creation of new wetlands may be required to replace those disturbed or destroyed by development activity.

Although no comprehensive inventory of wetlands in the SAPA region currently exists, the National Wetlands Inventory (NWI) undertaken in the 1980s by the United States Fish and Wildlife Service and the (then) Pennsylvania Department of Environmental Resources delineated wetlands in the area. These wetlands include surface water bodies, most floodplains, and other areas, generally along creeks, identified by means of aerial photography.

Care should be taken with hydric soils. A hydric soil is one that in its undrained condition is flooded, ponded, or saturated long enough during the growing season to develop anaerobic conditions that favor the growth and regeneration of hydrophytic vegetation. Hydric soils that do not qualify as wetlands are classified as having a “seasonable high water table”, indicating that they may become saturated during spring runoff conditions.

Chapter Two: Existing Conditions

NATURAL RESOURCES

Groundwater contamination has been a compelling issue in the SAPA area over its recent history and may be an even larger challenge in the future. The industrial legacy of Precision Plating has resulted in groundwater contamination in Abington, Glenburn, and South Abington Townships. There is groundwater contamination in North Abington, South Abington and Abington Townships from industry in Ivy Park. The prospect of natural gas well drilling in the next few years may present a more widespread threat to groundwater quality (as well as quantity).

Topography

The topography of the SAPA area has been very important in the development of the entire region. There are two parallel mountain ranges trisecting Lackawanna County forming the valley in which most development is located (Figure 2.6.2). The West Mountain is located southwest of the notch where Newton, Scranton and South Abington meet and all major thoroughfares run through. Bell Mountain is northeast of this same notch. Both mountain ranges create very steep slopes which are very limiting to growth. The notch, as described before, is the highest concentration of steep slopes, making this a very difficult location to develop for any use. South of Scranton near the Sno Mountain Ski Resort, the slopes are very steep ranging from the 15% range to over 25%. These percentages are calculated by measuring the vertical change in feet over a 100-foot horizontal distance. The valley where Scranton and Dunmore are situated is relatively flat with very moderate slopes.

In many areas, steeply sloped lands are covered with woodlands that limit the potential hazards of soil erosion and groundwater pollution and also provide significant scenic qualities for the community.

Soils and Geology

Soils are a very complex mixture of various amounts of weathered rock, minerals, organic matter, water, and air. Through the action of climate, plants and animals on these geologic materials, soils are formed over long periods of time. (Figure 2.6.3)

Chapter Two: Existing Conditions

NATURAL RESOURCES

It is important to understand soil types when analyzing natural features because they give much insight into the area's suitability for development, agriculture and other land uses.

The general soil areas in a locality are called soil associations because of their similar characteristics. There are approximately six different soil associations located within the SAPA region and they are listed below with brief descriptions of characteristics, suitability for development and general location.

Wellsboro-Morris-Oquaga Association

These soil types are nearly level to moderately steep, deep and moderately deep soils that are moderately well drained, somewhat poorly drained and somewhat excessively drained. This is the most expansive association found; appearing on broad rolling uplands starting in the middle of Newton Township forming a belt that extends northeast through the Townships of Glenburn, Dalton, Abington and North Abington, with portions of it being in Clarks Summit and Clarks Green. This soil association is suitable for development of agriculture and some more urban uses.

Mardin-Lordstown-Volusia Association

This association is nearly level to moderately steep, deep and moderately deep soils that are moderately well drained, well drained and somewhat poorly drained. These soils occur in a few scattered patches throughout the area; in southern Scranton, north of Montage Mountain, there is a patch close to Interstate 81, in the center of South Abington and then continuing along the border of South Abington and Scott Township. In Newton Township near the southwest portion of the Township are other concentrations. Some of this soil has limitations for development such as stoniness, steep slopes, restricted permeability, depth to bedrock and a seasonal high water table.

Oquaga-Lackawanna-Arnot Association

One of the smaller associations in the area has moderately steep and steep slopes, moderately deep, deep and shallow soils that are somewhat excessively drained and well drained. These associations occur on the very edge of Dunmore where Interstates 84 and 380 enter the borough and in a

Chapter Two: Existing Conditions

NATURAL RESOURCES

patch mainly concentrated in Ransom Township, outside of the SAPA area, which extends into the two adjacent municipalities of Scranton and Newton. These soils are not very suitable for development due to their steep slopes, rockiness and depth to the bedrock.

Rock Outcrop-Arnot-Dystrochrepts Association

This association's characteristics include rocky outcrops and nearly level to steep slopes, shallow to deep, non-stony and extremely stony soils that are well drained and somewhat excessively drained. Half of this association has little or no vegetation while the other half contains shrubs and woodlands. This association makes up the majority of the southern portion of Scranton near the Sno Mountain Ski Resort and continuing in a band up through the eastern portions of Dunmore. The notch where US Route 6/11 passes through near South Abington and Scranton is where another portion is located. These soil types are less than ideal for development due to their rockiness and steep slopes.

Udorthents-Mine Dumps Association

These soils are nearly level to steep, deep to shallow, well drained to poorly drained soils in the upland area that have been strip mined or used as mine dumps; these areas are mainly located around Scranton where the coal mining facilities once stood. They consist of soil, rock material and areas of exposed bedrock that have been disturbed during coal mining. Some of this land can be used for development, but is usually unsuitable due to slopes and severe erosion. The current uses for this land are landfill sites and fill material.

Urban Land Association

These soils are nearly level to moderately steep, deep to shallow soils that are well drained to somewhat poorly drained. These soils comprise the majority of land used by the City of Scranton and Borough of Dunmore with smaller portions in Clarks Summit and South Abington. These soils have been severely disturbed or altered due to the high percentage of land already developed but are most suitable for urban development.

Chapter Two: Existing Conditions

NATURAL RESOURCES

The characteristics that describe the soil associations are a prime determinant in what lands are suitable for development of residential, commercial, agriculture or other uses. The main characteristics considered are soil depths, level of slope, internal drainage, freedom from flooding, type of parent material, and stoniness.

Vegetation and Wildlife

Dense hardwood forests once covered the SAPA area, but land clearance for farming, commercial purposes, and other development has eliminated substantial parts of this woodland. Today, the remaining woodlands consist mostly of second and third growth mixed deciduous forest. These areas generally are associated with hillsides and “mountaintops” and with the wetter, low-lying areas along creeks and adjoining steeply-sloped areas.

Many native and non-native species of plants and animals may be found in the area’s three main types of habitat — open field or pasture, forest, and wetlands. (Wetlands include creeks, springs, ponds, and meadows.) Although some species have adapted to more than one habitat, other flora and fauna have adapted to very specific needs and conditions, and are critically dependent upon particular habitat types. Generally speaking, man-made features are considered disruptive to natural habitats, but some, such as fields, pasture, hedgerows, and tree lines, offer important food and cover sources.

The Natural Areas Inventory of Lackawanna County (Nature Conservancy, 1997) identifies the following sites of interest for flora and fauna in the SAPA area:

- Scranton: Stafford Bald, Nay Aug Gorge, Montage Rocky Summit
- Dunmore: Dunmore Bald, Long Swamp
- Newton: Bald Mountain, Wyoanna Cliffs, County Line Island, Corby Swamp, West Mountain Summit
- Dalton/Glenburn/West Abington: Atherton Pond
- North Abington: South Branch Tunkhannock Creek

Chapter Two: Existing Conditions

NATURAL RESOURCES

The 2004 *Open Space, Greenways & Outdoor Recreation Master Plan* lists several priority sites for conservation in the SAPA area (these have been incorporated into the recommended Land Use Plan of this SAPA Comprehensive Plan):

- Lackawanna River Greenway
- Roaring Brook Greenway
- Tunkhannock Creek Greenway
- Moosic Mountain Barrens Natural Area
- Moosic Mountain Highlands
- Lake Scranton Natural Area
- Abington Natural Area
- North Abington Natural Area
- Summit Lake Natural Area
- Bald Mountain Highlands

Composite Constraints

The preceding natural resource information was combined and synthesized to illustrate the relative level of development constraints affecting various areas of the SAPA region lands with very severe constraints are generally precluded from future development due to flooding, while very steep slopes and wetlands pose severe constraints for most development. These areas may be most suitable for natural resource preservation and wildlife habitat. Areas of seasonal high water table (hydric soils) with slopes between ten and twenty percent have moderate constraints for development. The balance of the planning area has only slight development limitations.

The floodplains associated with the Lackawanna River, South Branch Tunkhannock Creek, Susquehanna River, and their tributaries factor most prominently in the delineation of the Composite Constraints map (Figure 2.6.4).

Chapter Two: Existing Conditions

NATURAL RESOURCES

Stormwater Management

Stormwater management is often geared towards controlling the quantity of stormwater runoff experienced during flood events through implementing detention basins and other standard stormwater management facilities. However, associated with stormwater quantity is water quality, and poor stormwater management can lead to increased pollutant loadings in unmitigated stormwater runoff that reaches streams and watercourses.

A Stormwater Problem Areas map (Figure 2.6.5) is included in this chapter. It shows the following types of problems: flooding, erosion, sediment, landslides, groundwater and water pollution as well as other issues. The SAPA region has an extensive stormwater network that includes stormwater inlets, manholes, detention basins and a network that conveys stormwater from the inlets to areas for detention or to creeks. This network is important for managing stormwater in a way that helps reduce the chance of flooding and damage to property and natural environment.

One of the most notable features of the stormwater network is the combined stormwater/sanitary sewer system serving the majority of Scranton and Dunmore. During dry weather, sewerage is treated at treatment stations before being discharged to natural water bodies. However, during storm events the capacities of the treatment plants are exceeded and sewerage bypasses the plants, discharging directly to the receiving streams at combined sewer outfalls (CSOs). Municipalities such as Scranton are striving towards eliminating CSOs and are working with the Environmental Protection Agency (EPA) to achieve a 98% reduction in CSOs.

A second water quality issue affecting the SAPA region is acid mine drainage. The Lackawanna River is the dominant hydrologic feature in the area, flowing from the Northeast to the Southwest through the most populated portion of the area, Scranton City. Historically, the valley surrounding the River experienced intense mining activities, most of which are now abandoned and flooded. As a result, the Lackawanna River receives acid mine drainage from the surrounding areas. Mitigating acid mine drainage and effectively managing stormwater in mined areas is a key issue facing the municipalities in the Lackawanna River watershed.

Chapter Two: Existing Conditions

NATURAL RESOURCES

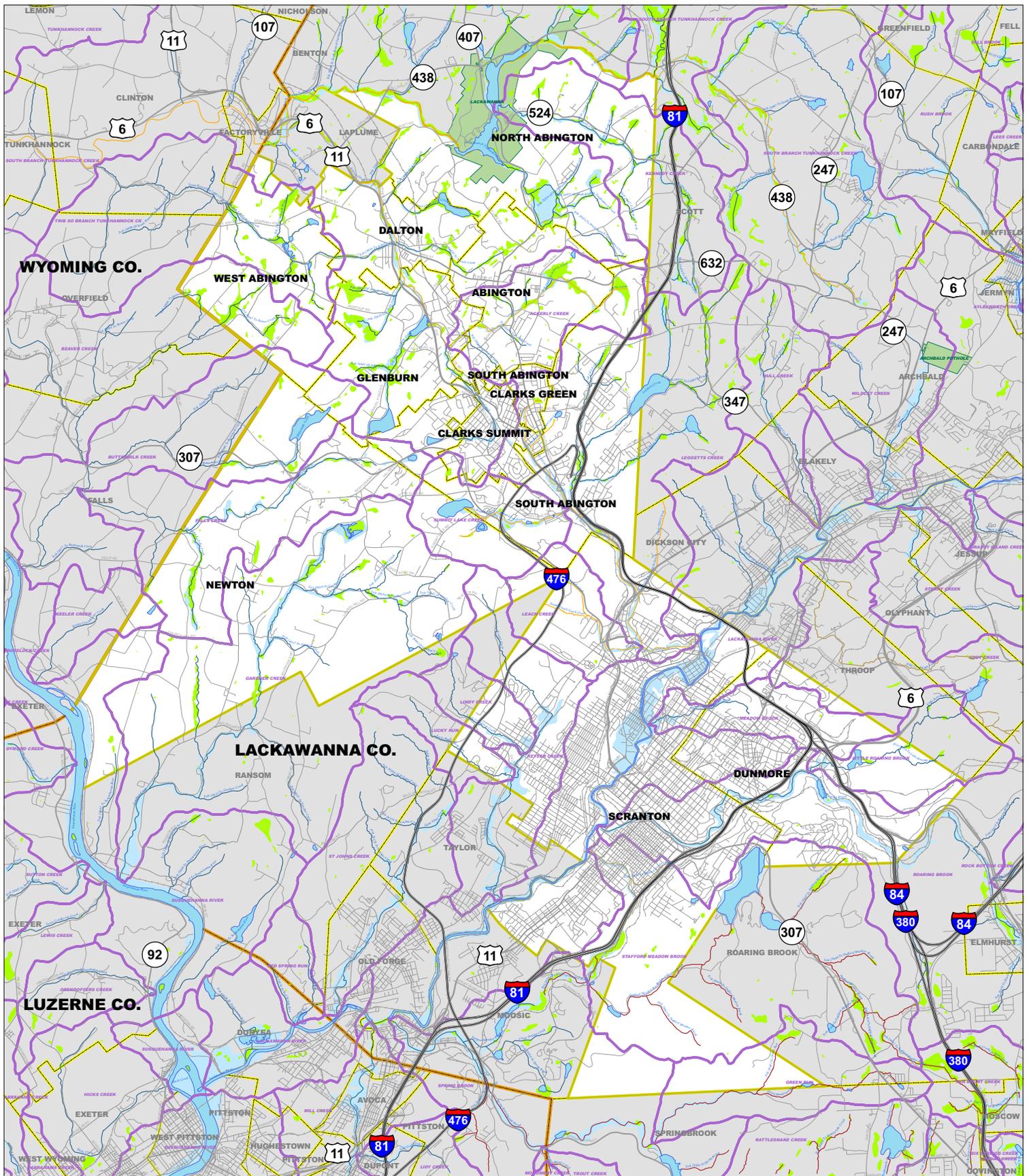
A key element to protecting the natural resources of the area is proper stormwater management. In 1991 Lackawanna County prepared the Lackawanna River Watershed Act 167 Stormwater Management (SWM) Plan, in which a Model Ordinance for stormwater management was prepared for, and adopted by, the municipalities in the watershed. The main purpose of Act 167 is to manage stormwater runoff from new developments and redevelopment from a global watershed perspective in order to preserve the health of the watershed by not increasing pollutant loadings, and maintain the welfare of residents within the watershed by not increasing flooding due to increased runoff. Although many of the municipalities in the SAPA area do have stormwater management components in their Zoning Ordinance and Subdivision and Land Development Ordinance, these are often lacking in water quality requirements that seek to improve the aquatic health of a watershed.

Act 167 SWM Plans are prepared under the Pennsylvania Department of Environmental Protection's (DEP) authority. Since the time the Lackawanna River Watershed Act 167 SWM Plan was prepared, the DEP has updated the water quality component of the Model Ordinance. The Lackawanna River Watershed SWM Plan has not undergone an updating process since the time of its adoption. Furthermore, the South Branch Tunkhannock Creek and Susquehanna River watersheds do not currently have Act 167 SWM Plans and stormwater ordinances specifically designed for managing stormwater in these watersheds. This presents the SAPA community with a unique opportunity to implement stormwater management criteria in watersheds that do not have an Act 167 SWM Plan, and to update the water quality components of the Lackawanna River SWM Plan.

Chapter Two: Existing Conditions

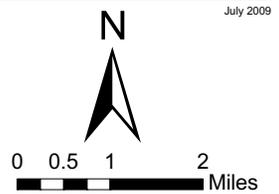
NATURAL RESOURCES

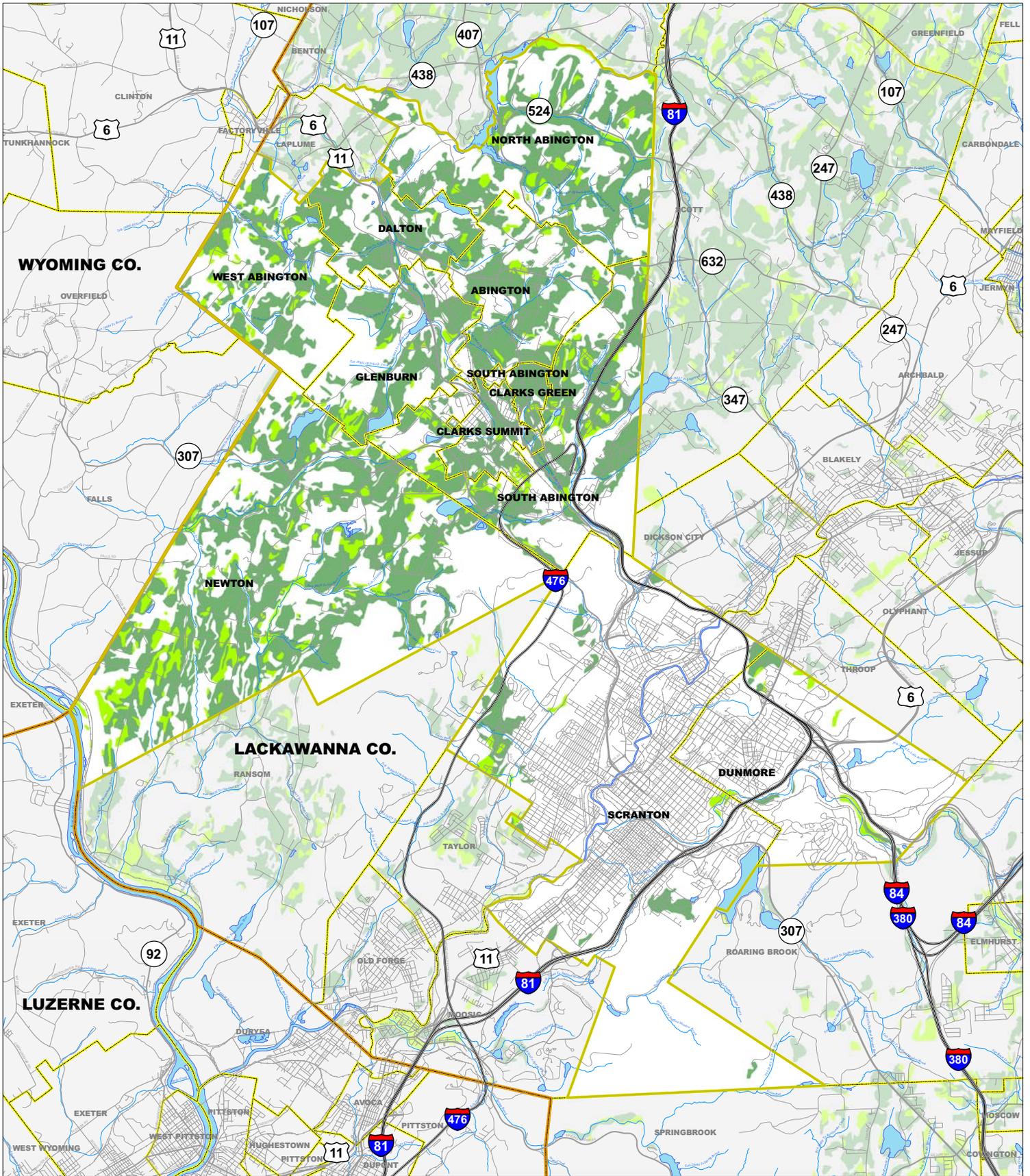
The communities in the South Branch Tunkhannock Creek watershed generally encompass some of the headwaters of the smaller tributaries to the South Branch Tunkhannock Creek, where improper stormwater management can have the greatest impacts on downstream communities. Therefore, stormwater management applied by these SAPA communities will act to benefit downstream neighboring communities by both improving water quality and managing stormwater runoff quantity.



Scranton-Abingtons Planning Association
 Comprehensive Plan
FIGURE 2.6.1
HYDROLOGIC FEATURES

- | | |
|---------------------|-----------------------------|
| Study Area Boundary | Rivers & Streams |
| Watersheds | Cold Water Fishery |
| Wetlands | Exceptional Value |
| 100yr Floodplains | High Quality |
| | Trout Stocked Fishery |
| | Warm Water Fishery |





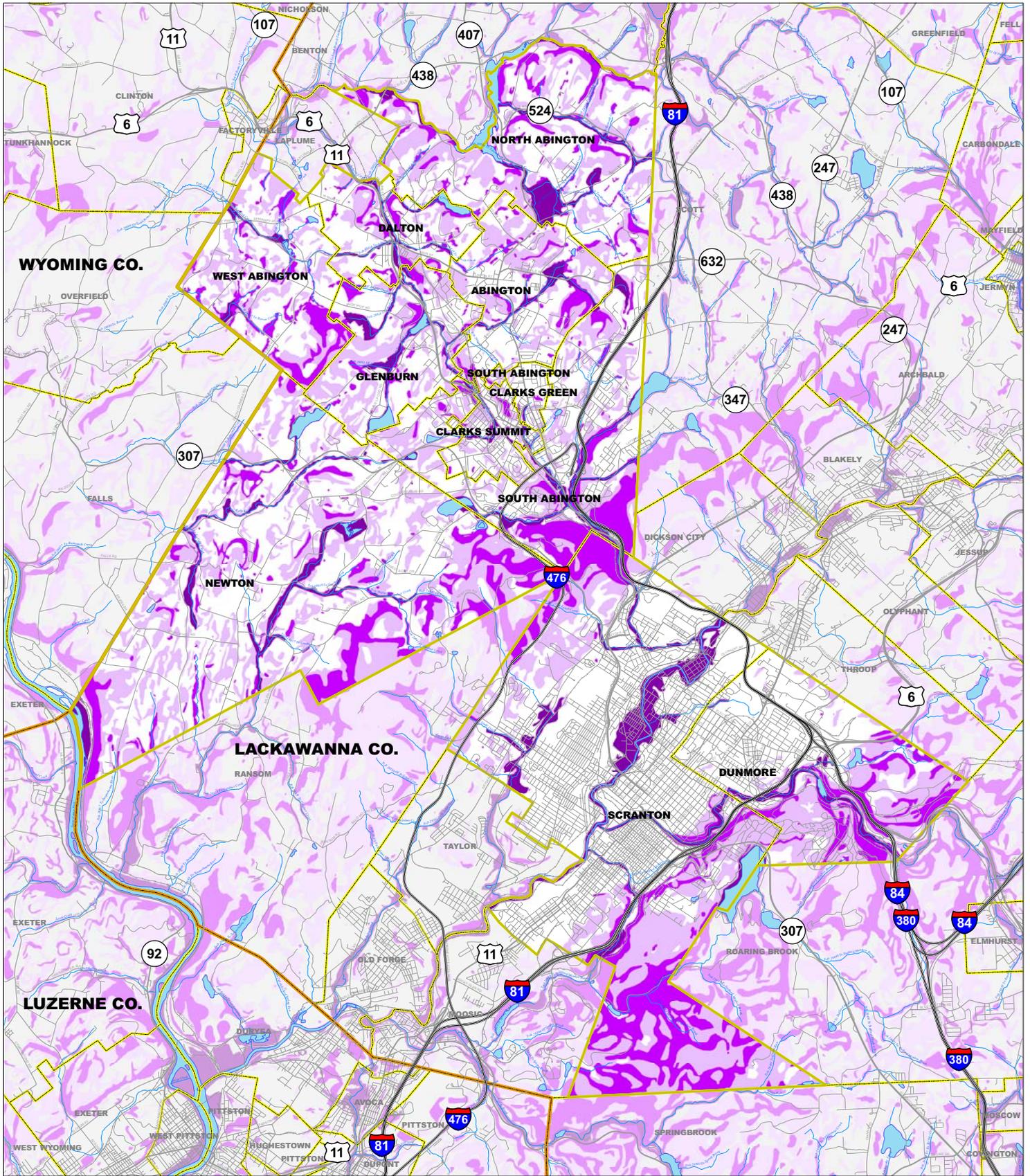
February 2007

Scranton-Abingtons Planning Association
 Comprehensive Plan
FIGURE 2.6.3
AGRICULTURAL SOILS

- Farmland of Statewide Importance
- Prime Farmland
- Study Area Boundary



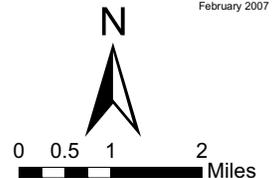
0 0.5 1 2 Miles

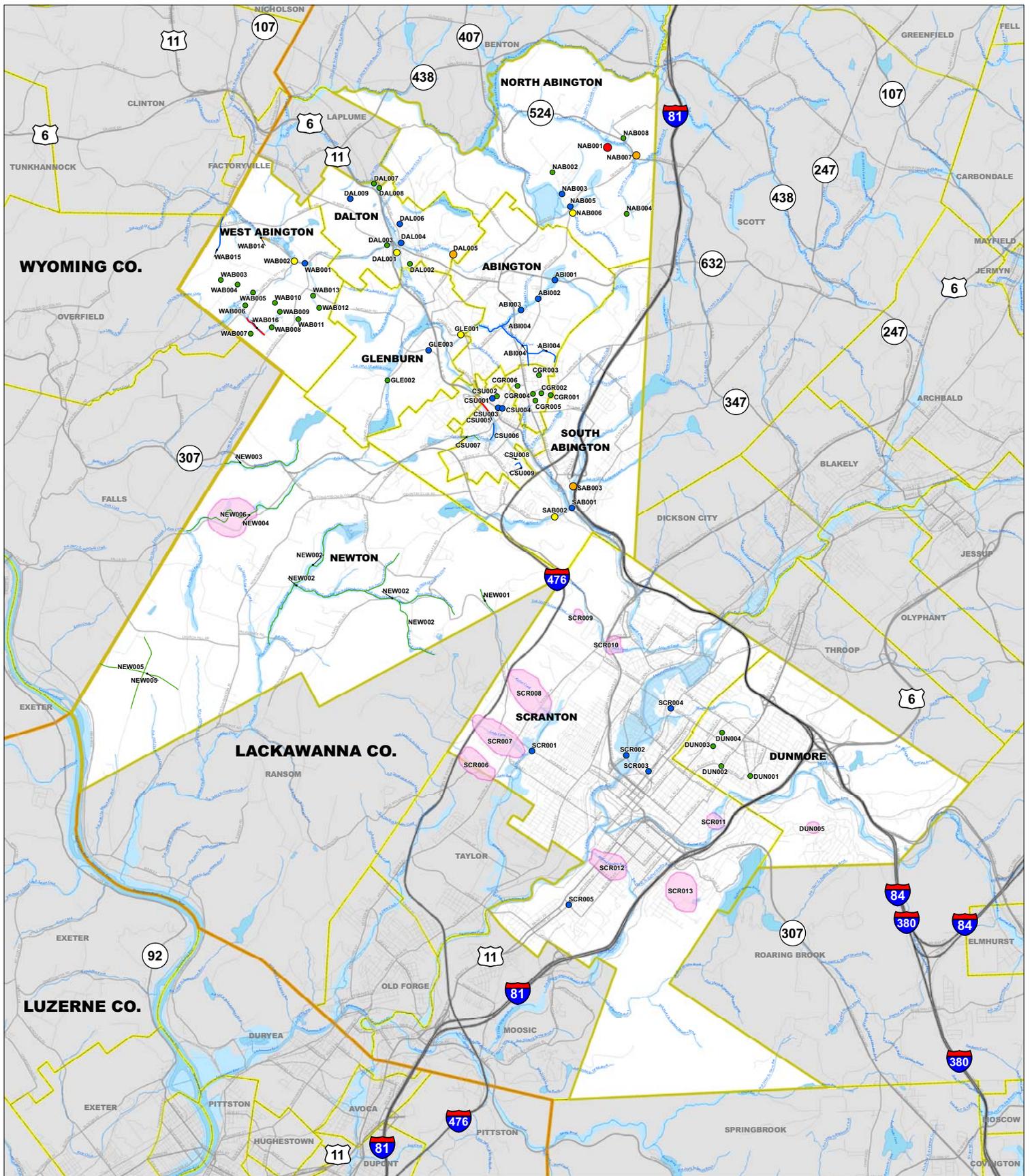


February 2007

**Scranton-Abingtons Planning Association
Comprehensive Plan
FIGURE 2.6.4
COMPOSITE CONSTRAINTS**

- Study Area Boundary
- Level 1: 100 yr Floodplains
- Level 2: Wetlands & Steep Slope (>25%)
- Level 3: Prime Farmland & Moderate Slope (15 to 25%)
- Level 4: Slight





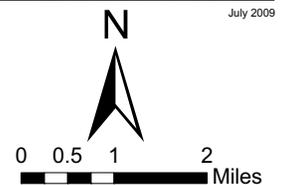
Scranton-Abingtons Planning Association

Comprehensive Plan

**FIGURE 2.6.5
STORMWATER
PROBLEM AREAS**

- 1 Type of Problem
- 2 Types of Problems
- 3 Types of Problems
- 4 Types of Problems
- 6 Types of Problems
- 1 Type of Linear Problem
- 2 Types of Linear Problems
- 3 Types of Linear Problems
- 4 Types of Linear Problems
- Problem Area
- Study Area Boundary
- 100yr Floodplains

Source: Borton-Lawson.
Stormwater problems include: flooding, erosion, sediment, landslides, groundwater and water pollution as well as other issues.



Chapter Two: Existing Conditions

HISTORIC RESOURCES

SECTION 2.7: HISTORIC RESOURCES

Brief History: Scranton and the Lackawanna Valley

The SAPA area and Lackawanna County as a whole are rich with history showing transitions that have occurred over the years. When settlers arrived in the Lackawanna Valley early in the eighteenth century, the area was inhabited by an indigenous population of the Six Nations. The Native Americans hunted common game such as deer, elk, panther, and bear and farmed the soils until the 1750's. In 1768, the land of which the Lackawanna Valley was a part was purchased by the Proprietary Government of Pennsylvania. This brought on many years of violence between the white settlers and Native Americans until a settlement agreement was reached in 1782.

The 1800s was a period of economic expansion for the Lackawanna Valley with the discovery of the Northern Anthracite Coal Field. Coal mining facilities sprang up all over the valley, generating enough revenue to pay for projects such as the Delaware and Hudson Canal and the D&H owned Gravity Railroad, which transported products to market. In addition, the Pennsylvania Coal Company operated a gravity railroad through Dunmore.

With the discovery of iron ore on the mountain ridges, prominent settlers were drawn to the area. In the late 1830s, two brothers, George and Selden Scranton, came to the Lackawanna Valley to begin an iron manufacturing company in a village then called Slocum Hollow. After an initial failure in nail manufacturing the brothers turned their attention to iron rail production. Joined by their cousin Joseph Hand Scranton, George and Selden founded the Lackawanna Iron and Coal Company, which would mark the birth of the Lackawanna Valley's industrial boom. Immigrant workers poured into the area to find work in iron, anthracite and railroading industries that soon dotted the landscape. The village of Slocum Hollow would become a city named Scranton to honor its industrial founders.

Chapter Two: Existing Conditions

HISTORIC RESOURCES

The Lackawanna Valley prospered from the Industrial Revolution. Thousands of men found work in heavy industry, while immigrant women worked in the many textile mills. Scranton became the banking and commercial center for the region. The region's wealth and power was further evidenced by examples of innovation and education initiatives. Scranton boasted the first successful electric streetcar system, thus was nicknamed "The Electric City". The city was home to the International Correspondence Schools. Many varied architectural styles and building techniques flourished. The sky was lined with massive coal breakers, while freight lines and passenger lines connected the area with the rest of the country. From the 1880s through the 1920s, Scranton and the surrounding communities reached the peak of their prosperity.

A decline began by the 1940s. Alternative fuels emerged that reduced the demand for coal, closing coal-producing companies and leaving many unemployed. With the introduction of the highway system, citizens began leaving urban centers like Scranton for the suburban and rural areas.

Today, the Lackawanna Valley is emerging from an extended period of decline. The service industry is growing, with cultural and tourist attractions that serve to maintain and increase interest in previously-neglected urban areas.

Brief History: The Abingtons as related to the Lackawanna Valley

In the late 1790s, Deacon William Clark traveled from Plainfield, Connecticut to the area that would become the Abingtons. Clarks Green and Clarks Summit would be named for him. At the time, the area was a dense wilderness, and the early settlers, like similar pioneers in the Midwest, had to clear the land, build log cabins and set up farms. Elder John Miller, also from Plainfield, arrived in 1801 and settled in Abington Center (now Waverly). He helped organize the first church, donated land to a number of institutions and schools and preached throughout the countryside.

Chapter Two: Existing Conditions

HISTORIC RESOURCES

The original Abington Township was established in 1806 and named for Abington, Connecticut. It was a large area that is now the townships of Greenfield, Benton, Scott, Abington and North, South, and West Abington, Glenburn, La Plume, as well as Dalton, Clarks Summit, and Clarks Green. Most of the settlers in the early 1800s were from Rhode Island and Connecticut, who traveled west looking for new cheap land with fertile soil. For its first fifty years, the area was largely a rural agricultural township.

Starting in 1821, the Philadelphia and Great Bend Turnpike was built as the main travel outlet from Philadelphia through Mount Pocono and Moscow, into Dunmore at Drinker Street, through Green Ridge and Providence, through Leggett's Gap into the Abingtons and on to Harford and Great Bend. The turnpike was important in that it provided daily stagecoaches north and south, a dependable route for mail delivery, transport of farmers' produce (the growing city of Scranton was an especially excellent market for farmers), and many places for enterprising residents to establish new businesses like taverns and hotels.

The Delaware, Lackawanna and Western Railroad was built through the area in 1850, establishing a station in Clarks Summit. Although the railroad's primary purpose was to ship coal out of the Lackawanna Valley, it marked a major turning point in the development of the Abingtons. A small trading center grew up around the Summit Station. Farmers took advantage of the rail line as a way to receive manufactured goods, and another way to ship their farm products.

The Northern Electric Street Railway was opened in 1907, running from Scranton through the Abingtons to Montrose, with a line to Lake Winola, providing fast and frequent service from the city to the country and making possible the development of several communities along its route. It ended service in 1932, due to increased automobile use. With the advent of the Northern Electric Railway and the automobile, the Abingtons began to grow more steadily. Clarks Summit was incorporated as a borough in 1911 and Clarks Green in 1914. Despite the growth, the two boroughs remained quiet residential towns, primarily supported by dairy farming country in South Abington Township, with a total population for the entire area of just over 6,000 in 1950.

Chapter Two: Existing Conditions

HISTORIC RESOURCES

After 1950, with increasing mobility due to cars and better highways, along with the trend to move from cities to suburbs, the Abingtons changed dramatically to become one of the fastest growing areas in Lackawanna County. The growth occurred in all sectors — businesses, highways, homes, schools, churches, industries, executive parks, etc. — that would more than double the population.

National Register of Historic Places

The SAPA communities have demonstrated pride in their historic resources and have been working to preserve the landmarks that have helped shape the history of the area, from the Steamtown Historic Site, which represents industrial growth, to the many other residences, districts, and sites listed on the National Register of Historic Places. (Figure 2.7.1).

Site	Address	City	Year Added
Ad-Lin Building	600 Linden St.	Scranton	1987
Albright Memorial Building	N. Washington Ave. and Vine St.	Scranton	1978
Cassese, Joseph, House	1000 Clay Ave.	Scranton	1997
Central Railroad of New Jersey Freight Station	602 Lackawanna Ave.	Scranton	1979
Century Club of Scranton	612 Jefferson Ave.	Scranton	1996
Delaware, Lackawanna and Western Railroad Station	Lackawanna and Jefferson Aves.	Scranton	1977
Delaware, Lackawanna and Western Railroad Yard—Dickson Manufacturing Co. Site	Bounded by Cliff St, Lackawanna Ave, Mattes Ave, River St & Lackawanna R.	Scranton	1990

Chapter Two: Existing Conditions

HISTORIC RESOURCES

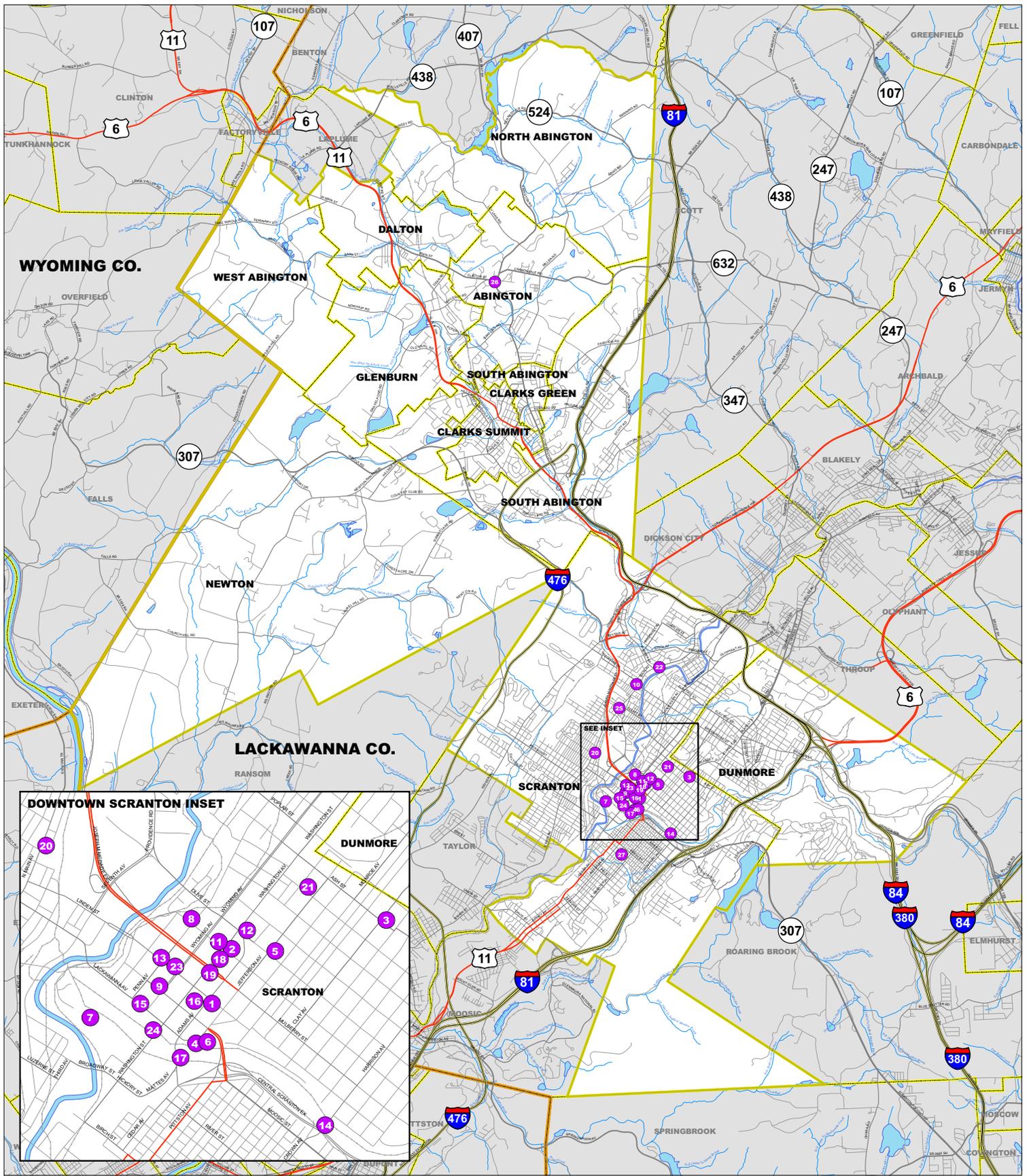
Dickson Works	225 Vine St.	Scranton	1979
Dime Bank Building	Wyoming Ave. & Spruce St.	Scranton	1978
First Church of Christ, Scientist	520 Vine St.	Scranton	1988
Florence Apartments	643 Adams Ave.	Scranton	1984
Grand Army of the Republic Building	303 Linden St.	Scranton	1984
Harrison Ave. Bridge	LR 5 over LR 35009 Par- Roaring Brook and RR	Scranton	1988
Lackawanna Ave. Commercial Historic District	Lackawanna, Adams, Franklin Avenues, Bogart Pl. & Spruce St.	Scranton	1983
Lackawanna County Courthouse and John Mitchell Monument	Washington, Linden, Adams and Spruce St.	Scranton	1997
Lackawanna Iron and Coal Company Furnace	159 Cedar Ave.	Scranton	1991
Masonic Temple and Scottish Rite Cathedral	416-420 N. Washington Ave.	Scranton	1997
Municipal Building and Central Fire Station, 340	N. Washington Ave. and 518 Mulberry St.	Scranton	1981
North Scranton Jr. High	1539 N. Main Ave.	Scranton	1999
Powderly, Terence V., House	614 N. Main St.	Scranton	1966
Scranton Armory	900 Adams Ave.	Scranton	1989
Silkman House	2006 N. Main Ave.	Scranton	1976
St. Peter's Cathedral Complex	315 Wyoming Ave.	Scranton	1976
Steamtown National Historic Site	150 S. Washington Ave.	Scranton	1986

Chapter Two: Existing Conditions

HISTORIC RESOURCES

Tripp Family Homestead	1101 N. Main Ave.	Scranton	1972
Waverly Historic District	Academy St and Abington Rd., Carbondale Rd. Beech, Cole, Church and Dearborn St.	Abington	2004
Williams, Roger, Public School # 10	901 Prospect Ave.	Scranton	1997

In addition, sites that have to date been determined as Eligible for the National Register of Historic Places are shown in Appendix 3.



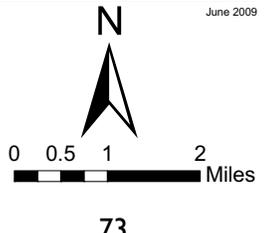
Scranton-Abingtons Planning Association

Comprehensive Plan
FIGURE 2.7.1

HISTORIC SITES

- National Register Historic Sites
- Study Area Boundary

Site No.	Site Name	Location	Year Added	Site No.	Site Name	Location	Year Added
1	Ad-Lin Building	Scranton	1987	14	Harrison Ave. Bridge	Scranton	1988
2	Albright Memorial Building	Scranton	1978	15	Lackawanna Ave. Commercial Historic District	Scranton	1983
3	Cassese, Joseph House	Scranton	1997	16	Lackawanna County Courthouse	Scranton	1997
4	Central Railroad of New Jersey Freight Station	Scranton	1979	17	Lackawanna Iron & Coal Company Furnace	Scranton	1991
5	Century Club of Scranton	Scranton	1996	18	Masonic Temple & Scottish Rite Cathedral	Scranton	1997
6	Delaware, Lackawanna & Western RR Station	Scranton	1977	19	Municipal Building & Central Fire Station, 340	Scranton	1981
7	Railroad Yard & Dickson Manufacturing Co. Site	Scranton	1990	20	Powderly, Terence V. House	Scranton	1985
8	Dickson Works	Scranton	1979	21	Scranton Armory	Scranton	1989
9	Dime Bank Building	Scranton	1978	22	Silkman House	Scranton	1976
10	North Scranton Junior High School	Scranton	1999	23	St. Peter's Cathedral Complex	Scranton	1976
11	First Church of Christ, Scientist	Scranton	1988	24	Steamtown National Historic Site	Scranton	1986
12	Florence Apartments	Scranton	1984	25	Tripp Family Homestead	Scranton	1972
13	Grand Army of the Republic Building	Scranton	1984	26	Waverly Historic District	Abington	2004
				27	Williams, Roger, Public School #10	Scranton	1997



Chapter Two: Existing Conditions

HISTORIC RESOURCES

Chapter Two: Existing Conditions

COMMUNITY FACILITIES

SECTION 2.8: COMMUNITY FACILITIES

Community Facilities and Services

The way SAPA communities provide emergency services varies. Some municipalities such as Scranton, Clarks Summit and Dalton use their own police, fire and ambulance services. Others share the uses of each service. For example Abington Township has its own township police department, but shares the uses of the fire and ambulance coverage with Clarks Summit and Dalton; North Abington Township utilizes the Abington Township police department and volunteer fire and ambulance services from Dalton Borough and the Justus area of Scott Township. The complete listing of where each municipality receives its police, fire and ambulance coverage is provided in Table 2.8.1.

The Lackawanna County Emergency Communications Center (ECC) is the designated 9-1-1 Center and dispatches all emergency services (police, fire and emergency medical services) in the county.

There are five main hospitals providing medical assistance to the SAPA area as listed below:

- Community Medical Center, Scranton, PA - 310 bed capacity
- Mercy Hospital, Scranton PA - 274 bed capacity
- Moses Taylor Hospital, Scranton, PA - 230 bed capacity
- Marian Community Hospital, Carbondale, PA - 112 bed capacity
- Mid-Valley Hospital, Peckville, PA - 57 bed capacity

In addition to these hospitals, there are numerous other, smaller specialized care facilities located throughout the SAPA area ranging from personal care services to psychiatric hospitals to rehabilitation facilities.

Chapter Two: Existing Conditions

COMMUNITY FACILITIES

Table 2.8.1			
Emergency Services			
Municipality	Police Coverage	Fire Coverage	EMS Coverage
Abington Township	Abington Twp Police	Clarks Summit Vol. FC & Dalton Vol. FC	Clarks Summit & Dalton Vol. Ambulance
Clarks Green	South Abington Twp PD	Clarks Summit Vol. FC	Clarks Summit Vol. Ambulance
Clarks Summit	Clarks Summit Bor PD	Clarks Summit Vol. FC	Clarks Summit Vol. Ambulance
Dalton Borough	Dalton Police	Dalton Vol. FC	Dalton Vol. Ambulance
Dunmore	Dunmore Police	Dunmore FD	Private Services
Glenburn	Abington Twp Police	Clarks Summit & Dalton Vol. FC	Clarks Summit & Dalton Vol. Ambulance
Newton	Newton Twp Police South Abington Police	Newton-Ransom Vol. FC	Newton-Ransom Vol. Ambulance
North Abington	Abington Twp Police	Dalton & Justus (Scott Twp.) Vol. FC	Dalton & Justus (Scott Twp) Vol. Ambulance
Scranton	Scranton PD	Scranton FD	Private Services
South Abington	S. Abington PD	Chinchilla House Co.	Chinchilla Vol. Ambulance
West Abington	PA State Police at Dunmore	Dalton Vol. FC Factoryville Vol. FC	Dalton & Factoryville Vol. Ambulance

Libraries

There are five public libraries located in the SAPA area providing free books and online materials to the general public. Three of these libraries are within the city of Scranton; two are located along Vine Street (one being the main library and a second being the children's library), the third is located at the corner of Green Ridge Street and Wyoming Avenue. The other two libraries are the Abington Community Library in Clarks Summit on West Grove Street, and the Dalton Library located on Main Street in Dalton.

Chapter Two: Existing Conditions

COMMUNITY FACILITIES

Public Schools

The four school districts that serve the SAPA area are Abington Heights, Dunmore, Scranton and Lackawanna Trail. The Abington Heights School District serves the communities of Abington Township, Clarks Green, Clarks Summit, Glenburn, Newton, North Abington and South Abington, along with other municipalities not in the SAPA study area. This district serves 3,676 students in four elementary schools, one middle school and a single high school. The Dunmore school district serves 1,675 students in Dunmore Borough with one high school, middle school and elementary school. The Lackawanna Trail School District crosses county borders and serves the SAPA communities of West Abington and Dalton and other municipalities in Lackawanna County and Wyoming County. It currently has just one elementary school and a combined junior and senior high school to accommodate its 1,323 students. The largest of the districts is Scranton, which serves the City of Scranton and its 9,766 students in thirteen elementary schools, three intermediate schools and two high schools. The complete list of attendance figures and specific schools is found in Table 2.8.2.

Colleges and Universities

There are six major institutions of higher learning in the SAPA area, including the University of Scranton, Lackawanna College, and Johnson College in Scranton; Marywood University in Scranton and Dunmore and the Penn State campus in Dunmore; and Baptist Bible College in South Abington Township.

Chapter Two: Existing Conditions

COMMUNITY FACILITIES

Table 2.8.2					
School Districts Serving the SAPA area					
School District	Municipalities	Total	Primary	Secondary	School Listings
Abington Heights	Abington Clarks Green Clarks Summit South/North Abington Newton Glenburn	3,676	1,815	1,861	1. Clarks Summit Elementary (387, k-4) 2. Newton/Ransom Elementary (260, k-4) 3. South Abington Elementary (313, k-4) 4. Waverly Elementary (272, k-4) 5. Abington Hgts MS (1206 5-8) 6. Abington Hgts HS (1261, 9-12)
Dunmore	Dunmore	1,675	820	855	1. Dunmore Elementary (820, k-6) 2. Dunmore MS (310, 7-8) 3. Dunmore HS (544, 9-12)
Lackawanna Trail	Dalton West Abington	1,323	634	689	1. Lackawanna Trail Elementary (634, k-6) 2. Lackawanna Trail Jr/ Sr HS (689 7-12)
Scranton	Scranton	9,766	5,396	3,841	1. John Whittier Elementary (262, k-5) 2. John Adams Elementary (251, k-5) 3. John F. Kennedy Elementary (266, k-5) 4. Lincoln-Jackson Elementary (205, k-5) 5. Charles Sumner Elementary (259, k-5)

Chapter Two: Existing Conditions

COMMUNITY FACILITIES

					6. Robert Morris Elementary (369, k-5)
					7. Frances Willard Elementary (478, k-5)
					8. George Bancroft Elementary (231, k-5)
					9. William Prescott Elementary (243, k-5)
					10. Neil Armstrong Elementary (535, k-5)
					11. John Marshall Elementary (350, k-5)
					12. John J. Audubon Elementary (215, k-5)
					13. McNichols Plaza Elementary (370, k-5)
					14. South Scranton Intermediate (496, 6-8)
					15. Northeast Scranton Intermediate (895, 6-8)
					16. West Scranton Intermediate (762, 6-8)
					17. Scranton High (1847, 9-12)
					18. West Scranton High (906, 9-12)

Chapter Two: Existing Conditions

COMMUNITY FACILITIES

State Parks

Lackawanna State Park

Ten miles north of Scranton at the edge of the SAPA area is the 1,445-acre Lackawanna State Park. The focal area for the park is the 198-acre Lackawanna Lake providing boating and fishing, and the park also includes areas for hiking, camping, horseback riding and biking options. Countryside Conservancy also owns 88 acres adjacent to the park and these lands are open for public use, adding to the State Park's extensive trail network.

Regionally-Oriented Recreation and Conservation Areas

McDade Park

McDade Park is a public park spread over 200 acres on the western border of Scranton offering amenities such as a children's fishing pond, Olympic-sized swimming pool, baseball fields, basketball courts and an Anthracite Heritage Museum. The park was created in the 1970s from formerly mined lands.

Nay Aug Park & Gorge

The City of Scranton owns this 92-acre park near the I-81 and PA Route 307 interchange which includes many attractions such as a tree house constructed in 2007, pools, trails, playgrounds and the natural beauty provided by waterfalls and gorges. It is designated as a National Natural Landmark by the National Park Service.

South Abington Community Park

South Abington Community Park, on Northern Blvd. near the I-81 and PA Turnpike interchanges in South Abington Township, has served the region for more than 13 years. The 27-acre park currently provides playground equipment, a 1/2 mile walking trail, soccer and baseball fields, basketball and volleyball courts, winter ice skating/hockey rink, summer skating rink/skateboarding rink, pavilion with BBQ pit, a gazebo and a summer splash park. Sports leagues hold regular practices and games here. South Abington Township hosts many annual events at the park for the general public, including a Fishing Derby, Park Day, and a summer Day Camp for children. It

Chapter Two: Existing Conditions

COMMUNITY FACILITIES

is the setting for the Abington Farmers' Market on summer weekends, and for numerous sponsored events. South Abington Elementary School utilizes the park for recreation and environmental education.

Abington Area Community Park

Four municipalities form the board for Abington Area Community Park: Clarks Summit, Clarks Green, Glenburn and South Abington. The park is located in the northwest part of South Abington Township. It is a regionally-oriented park; however for purposes of this document, features are listed under South Abington on Table 2.8.3.

Rabbit Hollow Wildlife Sanctuary

Near a tributary of Ackerly Creek in Abington Township is the home to the Rabbit Hollow Wildlife Sanctuary; donated to the Nature Conservancy in 1975 it offers 16 acres of woodland and wetlands with diverse animal and botanical habitats. It is now property of and run by Abington Township.

Trails

The Lackawanna River Heritage Trail is currently 4.5 miles long and runs from Pittston, along the Lackawanna River and up through Scranton, breaking after the Steamtown Historic Site and continuing again to finish in Carbondale and Forest City. When complete, the trail will be over 40 miles in length and will offer markers along the route to tell the history of the Lackawanna Valley.

The Pennsylvania Coal Company Gravity Railroad Trail is 12 miles long, beginning in Dunmore and traveling east. The trail is in need of conservation and repairs.

Two other trails are proposed for the area. The Countryside Conservancy Trolley Trail is in progress. It will run along the abandoned electric trolley line from Clarks Summit to Factoryville and will incorporate hiking and biking trails. Roaring Brook Corridor Trail is a proposed 12-mile trail beginning in Dunmore and continuing southeast to connect with other communities.

Chapter Two: Existing Conditions

COMMUNITY FACILITIES

Local Recreation Facilities

SAPA area communities have many other local recreational facilities of varying size and use as listed in Table 2.8.3. These facilities are important for providing open space and opportunities for outdoor recreation for SAPA area residents.

Table 2.8.3		
Local Recreation Facilities		
Municipality	Recreation Facility	Description
Abington Twp	Waverly Community House	Rt. 407; gymnasium, playground, tennis.
	Abington Twp Municipal Field	Lake Henry Dr.; baseball field, walking trail.
Clarks Green Borough	Joint operation of Abington Area Community Park	See description in South Abington.
Clarks Summit Borough	Joint operation of Abington Area Community Park	See description in South Abington.
	Carnation Drive	Green space park
	Hemlock St.	Gazebo, playground
	Scout Park	Lewis Lane; gazebo, picnic
	South State St.	Picnic area
	North State St.	Green Space park
Dalton Borough	Streamside Park	Mill St.; baseball field, basketball, tennis
	Dalton Park	E. Main; green space, walkway, benches
	W. Main	Little league field
Dunmore	Sherwood Park	Sherwood Ave.; Playground, pool, basketball
	McHale Park	Monroe Ave.; swings, little league field

Chapter Two: Existing Conditions

COMMUNITY FACILITIES

	Shautz Stadium	Prescott Ave.; baseball field
	St. Anthony's Playground	Hill St.; baseball field, football field, swings
Glenburn Twp.	Joint operation of Abington Area Community Park	See description in South Abington.
	Abington Little League Fields	Ackerly Rd.; five field little league complex
	Fords Pond	Fords Pond Rd.; fishing
Newton Twp.	Newton Rec Center	Newton/Ransom Blvd.; playground, soccer field, walking trail, dance studio, gymnasium
	Fords Pond	Fords Pond Rd.; fishing
North Abington Twp.	No municipal local recreation facilities	
Scranton	Allen Park	Price St.; green space
	Battaglia Field	W. Scranton; baseball field
	Capouse Ave. Complex	Capouse Ave.; pool, green space
	Cayuga Field	Cayuga St.; football
	Chic Feldman Field	Glen St.; baseball
	Clover Field	Acker Ave.; football
	Connell Park	Gibbons St.; baseball, football, basketball, pool
	Duffy Park	Harrison Ave.; green space
	Fellows Park	Main Ave.; playground
	Grace St. Playground	Grace St.; Playground
	Harmon Field	Meadow Ave.; baseball
	Jackson Terrace Park	Jackson St.; playground, skateboard, basketball
	Jim Crowley Recreation Site	Washington Ave.; playground, walking trail

Chapter Two: Existing Conditions

COMMUNITY FACILITIES

	The Lookout	Moosic St.; scenic overlook
	Minooka Playground	Colliery Ave.; playground, basketball tennis
	North Scranton Mini-Park	Market St.; Green space
	Novembrino Pool Complex	10 th Ave.; pool and green space
	Oakmont Park	Debbie Dr.; playground, basketball
	Pinebrook Field	Sanderson Ave.; softball, basketball, playground
	Powderly Park	Main Ave.; green space
	Robinson Park	E. Mountain Ave.; basketball, playground
	Rockwell Park	Rockwell Ave.; playground, softball field
	South Side Complex	Broadway; baseball, softball, playground
	Sturgis Park	Washington Ave.; green space
	Sunset Islands	Sunset St.; green space
	Theodore St. Park	Theodore St.; playground, basketball, baseball
	Tripp Park	Dorothy St.; playground, basketball
	Weston Field	Providence Rd.; indoor/outdoor pools, soccer
	Woodlawn Islands	Woodlawn St.; green space
South Abington	S. Abington Recreational Complex	Northern Blvd.; baseball, walking trails, covered bridges, volleyball, BBQ pit
	Gateway Park	Northern Blvd.; green space

Chapter Two: Existing Conditions

COMMUNITY FACILITIES

	Road Garden Park	Northern Blvd.; green space
	Comet Park	Winola Rd.; green space
	Mountain View Village Park	Shady Lane Rd.; greenspace
	Lakewood Park	Lakewood Dr.; green space
	Habeebs Notch	Highland Ave.; green space
	Abington Area Community Park (operated by 4 communities)	Rt. 307 and Grove St; baseball, picnic, pond, soccer field, trail, community garden
West Abington Twp.	No municipal local recreation facilities	

Easement and Agricultural Land

As a tool to aid in the preservation of important productive farmland in the SAPA area, local land conservancies are working with local property owners to secure conservation easements that ensure the protection and preservation of their land from development. Conservation easements are a legal agreement between the property owners, usually rural farmers, and either a local government agency or a land trust. These easements permanently limit the amount of development on the property in order to protect its resources. The local land conservancies, such as Lackawanna Valley Conservancy and Countryside Conservancy, have been successful in preserving over 1,500 acres of land in 28 conservation easements.

The Lackawanna County Agricultural Land Preservation Program helps slow the loss of quality and locally important farmland from non-agricultural uses through a program aimed at purchasing conservation easements. State, county and local governments purchase the easements. In order for an easement to be purchased the land must be enrolled in an Agricultural Security Area (ASA). An ASA is obtained through a petition farmers submit to their local governing body. The ASA must contain at least 250 acres

Chapter Two: Existing Conditions

COMMUNITY FACILITIES

among all farms, with a minimum of 10 acres per parcel or able to produce \$2,000 annually from the sale of agricultural products, and must have viable agricultural soils. The program is strictly voluntary. It gives farmers protection from nuisance ordinances and allows the property to be considered for an easement purchase. In order for an easement to be purchased through the Agricultural Land Preservation Program the Municipality's ASA must contain at least 500 acres. At present in the SAPA area, North Abington and Newton Townships have ASAs established. Other municipalities, such as West Abington and Glenburn Townships, should consider establishing them.

Lackawanna County has been very active in the acquisition of quality farmland for conservation easements. It has appointed an agricultural land preservation board which has overseen the negotiation of 41 agricultural easements or 3,660 acres of land, 320 acres of which is located in the SAPA area. The State has also identified "Significant Agricultural Areas" that have become the focus for conservation. Large portions of land in the SAPA area have been identified for their productive agricultural soils, large tracts of existing farm lands and limited urban growth. These Significant Agricultural Areas have been identified in portions of Newton, West Abington, Abington, and North Abington Townships and Dalton Borough.

Water Service

Drinking water in Scranton, the Boroughs and more urbanized areas of the Townships was historically provided by the Pennsylvania Gas and Water Company, municipal authorities, and small private water companies serving specific residential developments. Today, central water supply in the SAPA Area is provided primarily by the Pennsylvania American Water Company and Aqua Pennsylvania, with Pennsylvania American providing most of the supply. Both companies continue to expand statewide and continue to upgrade many of the older distribution systems and are willing to serve new development. The Pennsylvania Department of Environmental Protection regulates drinking water quality and the Pennsylvania Public Utility Commission governs service areas and rates.

Chapter Two: Existing Conditions

COMMUNITY FACILITIES

Pennsylvania American has maintained the use of the surface water reservoirs which have long provided the supply for Scranton, but now also use wells with supply tanks for other service areas. Much of the system is interconnected and the reservoirs can be used to supplement the wells if necessary. Drinking water in the rural and less developed areas of the Scranton Abingtons Planning Area is supplied by individual water wells drilled into underground aquifers in water bearing bedrock, or in some cases sand and gravel deposits.

Water supplies appear to be adequate at present and there have been no widespread supply problems reported. However, this is not to suggest that residents and local officials should ignore the important issues of surface water supply, localized groundwater supplies, and drinking water conservation. This is particularly important as development occurs. Wells near large water uses can be drawn down resulting in inadequate supply. Increases in impervious areas such as buildings, driveways and roads inevitably lead to more stormwater runoff, less groundwater recharge and water quality effects on reservoirs. In addition, given the characteristics of aquifers, development in the area can also affect local water availability. Simply stated, water supply, and particularly groundwater availability is a regional issue and an adequate current supply is not a valid reason for postponing or avoiding action to ensure continued adequate supply.

No less important is the issue of water quality. While groundwater quality is generally good, there have been some widespread quality issues in the SAPA area, particularly with respect to excessive chlorine levels. More focused and more serious quality issues are faced in parts of Abington, North Abington, South Abington, and Glenburn Townships, from closed and operational industrial plants. In the future, natural gas well drilling may represent a compelling threat to groundwater.

The potential for surface water and groundwater contamination is always present. Bacterial contamination can occur from malfunctioning on-lot sewage systems or poor livestock husbandry. Hydrocarbons can eventually reach groundwater from oil spills or leaking storage tanks. Nitrates and chloride can infiltrate as run-off from roads and parking lots, sewage systems, and farm fields.

Chapter Two: Existing Conditions

COMMUNITY FACILITIES

Current regulations typically address water issues independently even though surface water and groundwater are one integrated resource. For example, stormwater runoff and the silt it carries affects stream water quality and reduces groundwater recharge. Uncontrolled in terms of quality and without requiring infiltration, stormwater runoff can lead to reduced stream flow when groundwater recharge and discharges to streams are inadequate. Left unaddressed reduced groundwater recharge will result in a reduction in stream flow and water quality degradation since groundwater accounts for more than two-thirds of annual stream flow.

Sewer Service

The public entities in the SAPA area that provide central sewage collection and treatment include:

- Abington Township
- Clarks Summit - South Abington Joint Sewer Authority
- Dalton Sewer Authority
- Sewer Authority of the City of Scranton
- Commonwealth of Pennsylvania
(Clarks Summit State Hospital and Abington Heights Middle School)

Abington Township

Located adjacent to the Township Building, the Abington sewage collection and treatment system is owned and operated by the Township. It serves some 610 equivalent dwelling units in and around Waverly and south to the Township border with Clarks Green Borough and South Abington Township. The entire system is managed directly by the Township Board of Supervisors. The plant handles only limited nonresidential flows including the Community House, the Elementary School, several churches, and several small service and retail establishments, but no industrial flows.

Chapter Two: Existing Conditions

COMMUNITY FACILITIES

With a design capacity of 360,000 gallons per day (500,000 gallons per day wet weather flow), the average annual daily flow is about 290,000 gallons per day as noted in the 2006 Chapter 94 Municipal Wasteload Management Report, with a maximum three month average flow of 364,000 gallons per day. The treatment system discharges to an unnamed tributary of Ackerly Creek and is somewhat unusual, using two large aerated facultative lagoons instead of tanks as part of the treatment process. The collection system is gravity with two lift stations. Significant inflow and infiltration was greatly reduced in 1995 when a collection line slip-lining project was completed, and additional point repairs and collection line replacement projects have been completed.

The most recent extension within the service area connected 26 lots in Sterling Estates off Starlight Drive in the southeast section of the Township. The 2006 Wasteload Management Report projects that the system will serve some 640 equivalent dwelling units by 2011 with an average daily flow of about 337,000 gallons per day. The system is nearing its capacity and no service area expansions are planned in the near term.

Clarks Summit - South Abington Joint Sewer Authority

The Clarks Summit -South Abington Joint Sewer Authority (CSSAJSA) serves customers in Clarks Summit Borough, Clarks Green Borough, South Abington Township and a small part of Glenburn Township. The extended aeration wastewater treatment plant (WWTP) is located along US Route 11 in Chinchilla in South Abington Township. The permitted hydraulic loading capacity of the WWTP is tiered, with 2.5 million gallons per day (MGD) as the designated “average dry weather flow” capacity, and 5.0 MGD as the “wet weather flow”. The WWTP is designed for an annual average daily influent organic loading of 8,340 pounds of BOD₅ per day. (BOD₅ = biological oxygen demand. BOD₅ is a measure of the organic material in the effluent.) The collection and conveyance system is comprised of more than 47 miles of gravity sewer and 7 pumping stations. Each municipality except Glenburn owns and maintains the collection lines within their respective jurisdiction.

Chapter Two: Existing Conditions

COMMUNITY FACILITIES

The annual average daily wastewater flow as stated in the 2008 Chapter 94 Report was 2.94 MGD and the annual average influent organic loading for 2008 was 3,076 pounds BOD/day. The 2008 Chapter 94 Report projects flows for 2013 to be 3.85 MGD for maximum three month average, and a maximum month organic loading of 3,957 lbs BOD₅ per day in 2013. The projected values are below the capacity limits for both parameters.

In 2006, South Abington Township extended sewers to serve 39 single-family dwellings in the Amato/Noto Subdivision and 32 townhouses in the Amato/Noto Townhouse development, and anticipates sewer extensions to serve 65 lots in Hampton Acres and 10 lots in Dos Mondos Subdivision. No other recent or anticipated extensions were reported. The Authority intends to provide service to infill of the existing service area and plans no service area expansions.

The 2006 Chapter 94 Municipal Wasteload Management Report notes that *the condition of the Authority's sewage conveyance system is generally in good shape and has the capacity to handle present dry weather flow and dry weather flows that are anticipated for the next 5 years. The sewer collection and conveyance systems in South Abington Township, Clarks Summit Borough and Clarks Green Borough are subject to infiltration. This Inflow and Infiltration has on occasion resulted in a hydraulic overload at the WWTP. These occurrences have lead to the development of a Regional Corrective Action Plan and Comprehensive Act 537 Plan Update to address and eliminate these occurrences. Each served municipality as well as the CSSAJSA has committed to an aggressive program of removing I/I and public education to make the citizens aware of the importance of removing extraneous flow from the systems.*

The inflow and infiltration affecting the system is largely a result of the age of the collection and conveyance system. For example, the Clarks Summit Borough system was constructed largely in the late 1930s of terra cotta and some cast iron, and the South Abington Township system, constructed in the early 1970s, is primarily vitrified clay. In March 2007, the two Boroughs and South Abington Township formed an inter-municipal committee to address inflow/infiltration by working together, pooling funds to hire an employee to direct the effort; adopt an ordinance to limit stormwater connections; and to

Chapter Two: Existing Conditions

COMMUNITY FACILITIES

conduct an education program. Concurrently, each municipality is making improvements to the collection and conveyance system.

Dalton Sewer Authority

The Dalton Sewer Authority operates the system which serves much of the Borough and a number of homes in LaPlume Township. All of the residential core of the Borough is served along with Brookside Road; and in LaPlume Township, parts of Maple Road and Turnpike Lane. Connections to the system total almost 500 and no service area expansions are planned. The plant handles only limited nonresidential flows including the downtown and US Route 6 businesses, but no industrial flows. Authority records show that over the past several years new connections have averaged three annually, but the proposed Dalton Ridge townhouse development would add 40 units. The 2006 Chapter 94 Municipal Wasteload Management Report concludes that capacity is adequate to handle service area needs for the next five years. The plant has been operating within the effluent discharge criteria established by the Pennsylvania Department of Environmental Protection (DEP) with no permit violations during its operational history.

The extended aeration treatment plant, which provides secondary treatment, is actually located in LaPlume Township adjacent to US Route 6 and has a DEP-permitted capacity of 140,000 gallons per day and an organic capacity of 250 pounds/day (BOD₅). Treated effluent is discharged to Ackerly Creek. Normal flows average about 71,000 gallons per day, but can exceed 100,000 gallons per day with the effects of inflow/infiltration. The Authority has an ongoing program for correcting inflow/infiltration problems which should stabilize the average daily flow. The collection and conveyance system includes some 41,256 feet of gravity sewers, all of which are PVC except for 33 feet of cement lined ductile iron, and 4,353 feet of PVC low pressure sewer lines with 32 grinder pumps.

Chapter Two: Existing Conditions

COMMUNITY FACILITIES

City of Scranton Sewer Authority

The wastewater collection, conveyance and treatment system which serves the City of Scranton and the Borough of Dunmore is owned and operated by the City of Scranton Sewer Authority. In addition, the Scranton Sewer Authority serves small parts of three other municipalities including Taylor Borough, Dickson City Borough, and the Montage Sewer District in Moosic Borough. Dickson City owns and maintains its collection system, and the Lackawanna River Basin Sewer Authority owns and maintains the collection system for the Montage Sewer District and the Siniawa Sewer System. In total, the system serves some 30,000 connections. No service area extensions are anticipated with increased flows resulting from infill development.

The Authority's 2006 Chapter 94 Municipal Wasteload Management Report notes: *The SSA wastewater collection and conveyance system consists of over 275 miles of collection sewers and large interceptors, 80 combined sewer overflows (CSOs), and 7 pumping stations. There are also 2 unpermitted CSOs which are being addressed in the NPDES renewal. Approximately 63% (172 miles) of the collection sewers are combined sewers, which convey combined storm water and sanitary sewage flow to regulator chambers prior to connection with an interceptor sewer. Under high wet-weather flow conditions that exceed the capacities of downstream facilities, the regulators direct combined sanitary sewage and storm water to the receiving streams.*

The treatment plant is designed for an annual average hydraulic capacity of 20 million gallons per day (MGD) and an annual average organic loading capacity of 44,500 pounds BOD₅ per day. The effluent is discharged to the Lackawanna River after treatment including the following processes: screening and grit removal, primary settling, activated sludge process, secondary settling, chlorine disinfection and sulfur dioxide dechlorination.

The 2006 average annual daily wastewater flow through the treatment plant was 12.6 MGD, and the maximum consecutive 3-month average daily flow was 13.7 MGD, each well below the 20 MGD design capacity. By 2011 hydraulic flows are projected to reach an annual average of 13.6 MGD and a

Chapter Two: Existing Conditions

COMMUNITY FACILITIES

maximum consecutive three-month daily average of 15.6 MGD. In 2006, flows contributed by Taylor, Montage and Siniawa were 30,500 gpd, 123,000 gpd and 33,000 gpd respectively, for a total of 186,500 gpd or only 1.5% of the average annual daily flow of the entire system. The Sewer Authority has been updating its method of calculating organic loading to correct recent inconsistencies. In any case, based on the most recent data, the 2011 annual average organic loading is projected at 16,780 pounds BOD₅ per day, and the monthly maximum at 22,590 pounds BOD₅ per day, each well below the plant capacity.

The collection system, as discussed in Chapter 94 Report, is composed of a variety of main and interceptors dating back to the 1870s. Older sewers less than 24-inch diameter were commonly of terra cotta clay construction, and mains greater than 24-inch diameter often were of brick construction. The 12-mile long Main Interceptor is constructed of reinforced concrete pipe. Based on information provided by SSA staff, the collection system appears to be in generally satisfactory condition. Preventive maintenance activities are routinely performed by SSA staff to optimize the operation of the system, and to minimize the occurrences of blockages. Sewer Authority staff report that the collection systems in the other three municipalities are in good condition.

The Authority is currently working with the Pennsylvania Department of Environmental Protection and the U.S. Environmental Protection Agency to address a consent decree issued by EPA for compliance with the Authority's National Pollutant Discharge Elimination System permit. Key issues include dealing with the combined stormwater flows and meeting new nutrient limits set by the Chesapeake Bay Pact. The process involves upgrades and rehabilitation of treatment plant facilities and major repairs to the collection system. The cost of the improvements is estimated at 50 to 100 million dollars over 10 to 20 years.

Clarks Summit State Hospital and Abington Heights Middle School

The Commonwealth of Pennsylvania owns and operates a trickling filter sewage treatment plant located at the intersection of PA Route 307 and Newton Ransom Boulevard in Newton Township. The plant serves the

Chapter Two: Existing Conditions

COMMUNITY FACILITIES

Clarks Summit State Hospital and the Abington Heights Middle School. The design flow is 600,000 gallons per day with an average daily flow of some 120,000 gallons per day with the treated effluent discharged to Falls Creek. Capacity is available to Newton Township but no other residential or commercial developments have been connected to the plant.

Soil-Based On-Lot Sewage Disposal

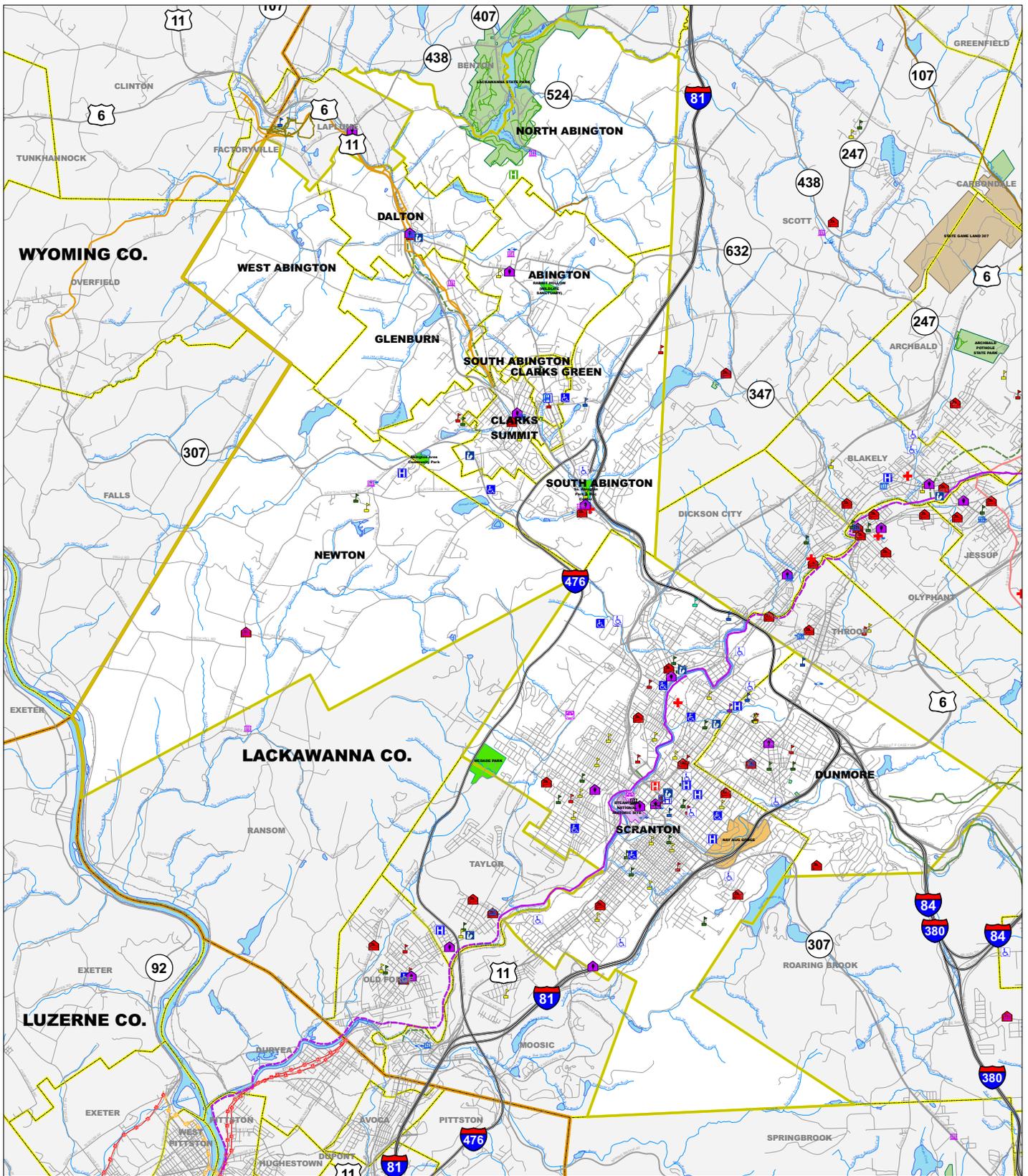
Many residences and commercial establishments in the SAPA Planning Area rely on soil-based on-lot sewage disposal systems. State environmental regulations governing sewage disposal systems were initiated in 1969 following the passage of the Sewage Facilities Act.

All of the on-lot disposal systems installed since that time should be in compliance with state requirements; however, many residences are served by systems that predate state regulations and the effect on water quality is not clear. Given the soil conditions in the Planning Area, many newly constructed on-site disposal systems are elevated sand mounds, which are constructed with state approved sand/soil placed on top of the natural soil surface.

Other Utilities

PPL provides electrical service for the Scranton-Abingtons Planning Association area. At this writing, PPL is proposing new electric power transmission lines that would cross Newton Township, South Abington Township and Scranton along the existing hilltop route, joining lines that currently pass across Bald Mountain, the Notch and into Dickson City and beyond. In the SAPA area, the existing 150-foot utility corridor would be widened to 325 feet to allow for the new power line to be installed parallel to the existing transmission line.

Wind turbine operators have expressed an interest in operating facilities on Bald Mountain in Newton Township. In response to this prospect, the township has adopted a new ordinance to regulate the height, placement, and operating characteristics of such equipment.



January 2010

**Scranton-Abingtons Planning Association
Comprehensive Plan**

**FIGURE 2.8.1
COMMUNITY FACILITIES**

- | | | | |
|-----------------------|------------------------|---------------------------|-----------------------|
| Government | Medical | Schools | Emergency |
| Township Building | Alcohol/Drug Treatment | Elementary School | Police |
| Boro Building | Assisted Care | Junior High/Middle School | Fire |
| City Hall | General Hospital | High School | EMS |
| State Office Building | Medical Center | Technology School | Transportation |
| Courthouse | Rehab/Nursing Care | College/University | Airport |
| Library | Veterans Center | Special Education School | BUS STATION |
| Post Office | | | |

Lackawanna River Heritage Trail

- Existing Trail
 - Proposed Trail
- Other Area Trails**
- Existing Trail
 - Proposed Trail
 - Keystone College Trail
 - Trolley Trail
 - Westside Bike Trail (Current)
 - Westside Bike Trail (Proposed)

Route L

- Route L

Route Y

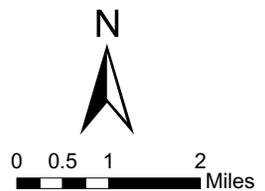
- Route Y

State Park Trails

- State Park Trails

Recreational Areas

- National Heritage Site
- National Natural Landmark
- County and Local Parks
- State Game Land
- State Forest / Park



Chapter Two: Existing Conditions
COMMUNITY FACILITIES



Scranton-Abingtons Planning Association (SAPA)

3. Growth Management Plan



Chapter Three: Growth Management Plan

INTRODUCTION

SECTION 3.1: INTRODUCTION

The Growth Management Plan is intended as a guide for the future growth of Scranton-Abingtons Planning Association (SAPA) municipalities. This plan has been developed using information gathered through geographic information systems (GIS) analysis, field work, stakeholder focus group discussions, input from municipal elected and appointed officials and staff, public meetings, and deliberations by the SAPA Committee. The plan contains policies that, when implemented, will help build upon what is most desirable about the SAPA area as a place to live, work, and play.

The Growth Management Plan is intended to provide a guide for day to day decision-making of elected and appointed officials and staff of SAPA municipalities. It is also intended to provide clear guidance to public and private organizations, businesses, and residents about the direction in which the SAPA area wishes to proceed. Since meeting many of the SAPA area's challenges and responding to its opportunities will require coordinated efforts among many parties, it is imperative that this plan establish a clearly defined blueprint for the SAPA area's future.

The Growth Management Plan contains several elements; each begins with a summary of the goals and objectives that undergird the recommendations of this plan. It focuses both on protecting what is valuable in the SAPA area and on how development and revitalization may be harnessed to invigorate selected areas. The land use plan element follows, with a description of the preferred type, intensity, and distribution of land uses in the SAPA area for the next 20 years. The next section describes ways that modifications to the transportation network can help resolve existing circulation problems and provide future mobility for motorists, pedestrians, cyclists, and transit users. The housing element discusses how to meet the residential needs of current and future SAPA area residents. The environmental protection element and the historic preservation elements consider the protection of existing community resources. The parks, recreation, and open space, and community facilities elements describe the manner in which residents and employees will be provided with local amenities and services, and the utilities element identifies how public infrastructure will be used to support existing and future development and protect public health and safety.

Chapter Three: Growth Management Plan
INTRODUCTION

Chapter Three: Growth Management Plan

LAND USE PLAN

SECTION 3.2: LAND USE PLAN

GOAL:

Achieve an overall future pattern of development that is responsive to existing and future economic, social, and cultural needs of the SAPA municipalities, that conserves and preserves the area's natural and agricultural resources, and that fosters environmental sustainability.

OBJECTIVES:

1. Objective: Maintain existing population centers, districts and neighborhoods to ensure their continuing suitability for residential, commercial, industrial, recreational, and institutional use and their attractiveness for compatible development.
2. Objective: Designate areas for growth that are adequate and appropriate to accommodate expected development and that can be served over the planning period mostly by the existing central water and sewer systems and by an upgraded existing network of roads, as well as other public services.
3. Objective: Accommodate non-residential development and redevelopment in areas where this kind of use is already established and where it supports other goals of the plan.
4. Objective: Encourage mixed-use development at selected locations where it will support existing SAPA communities.
5. Objective: Preserve and enhance commercial concentrations that are key elements in the municipalities' tax base and that serve residents of the SAPA area and surrounding municipalities.
6. Objective: Recognize how a strengthened residential presence may provide markets for local businesses in corridor and mixed-use districts.

Chapter Three: Growth Management Plan

LAND USE PLAN

7. Objective: Identify locations for non-polluting light industrial, assembly, and technology industries that provide jobs with the opportunity for advancement.
8. Objective: Identify locations for new, redeveloped or expanded office centers or business parks.
9. Objective: Provide locations for new and revitalized retail and other commercial uses to meet the needs of residents for goods and services.
10. Objective: Encourage environmentally sustainable planning and development.

The Land Use Plan (Figure 3.2.1) provides a unifying vision of the future for the Scranton-Abingtons Planning Association member municipalities and serves as the focal point of the Growth Management Plan. All of the subsequent elements of Chapter 3 act in a supporting role for the vision set out in this future land use plan. The Plan is concerned with the future location, intensity, and amount of different uses, mirroring the values, needs, and expectations of the Scranton-Abingtons Planning Association municipalities. The Plan describes the future distribution and interrelationship of land uses throughout the SAPA area, from the city and borough centers, to urban neighborhoods, village centers, mixed-use corridors, residential neighborhoods of varying densities, and open space, agricultural and natural resource protection areas. All types of land uses are accommodated, from schools to office parks to shopping and all varieties of housing.

The Land Use Plan, as well as the other specific elements of the Growth Management Plan, is oriented toward planned evolution of the SAPA area through the year 2030. It reflects modest population growth, a balanced land use mix, conservation of natural and cultural resources, and efficient utilization of the existing local road network and servicing systems. The Growth Management Plan is based on a 2030 population for the SAPA area of about 114,000 to 120,000 persons, and an increase of about 1,500 housing units above the present inventory.

Chapter Three: Growth Management Plan

LAND USE PLAN

The Land Use Plan recognizes the importance of an extensive, interconnected natural, agricultural and open space network throughout the SAPA area. Before discussing the major concepts of the land use plan, it is important to remember that the Plan promotes the following natural, agricultural, and open space network components:

- Stormwater management, environmental resource protection, natural areas retention and conservation, mountain tops, including surface water, floodplains, wetlands, steep slopes, and woodlands;
- A pedestrian/bicycle system, consisting of pathways, trails, and sidewalks within or just adjacent to roadway rights-of-way, that links the different parts of the SAPA area and provides non-motorized access to open space and recreational sites as well as to schools, shopping, and cultural facilities;
- Recreational lands, including playing fields, parks, public and civic space, and golf courses;
- Deed-restricted permanently undeveloped lands secured as part of land development approvals;
- Recreational trails, including local and regional facilities that are easily reached and that are highly interconnected;
- Agricultural lands, woodlands and natural areas, including preserved land;
- Connectivity of natural areas where feasible to enhance value and effectiveness;
- Buffers between incompatible land uses where feasible.

This network provides links among the other major land use elements of the Land Use Plan, as well as setting aside existing natural features such as floodplains and wetlands. Although floodplain and wetland regulations administered by the SAPA municipalities and by the Pennsylvania Department of Environmental Protection, U.S. Army Corps of Engineers, and the U.S. Environmental Protection Agency already prohibit or restrain development in these natural feature areas that could proactively assist in stormwater management, there are instances of development encroaching upon or directly having an impact on sensitive areas. The Land Use Plan and other supporting elements of the Growth Management plan are committed to natural resource preservation today and into the future.

Chapter Three: Growth Management Plan

LAND USE PLAN

Major Planning Concepts

The SAPA municipalities have committed to pursuing strategies that will support their existing city and borough centers, minimize urban development in the rural and agricultural lands, and promote the conservation of natural resources. The Land Use Plan has been developed in order to build upon and enhance the existing attributes and retrofit or add missing community features to existing developed areas of the Scranton-Abingtons Planning Association municipalities. This plan provides a framework for leadership that then allows flexibility for member municipalities to apply strategies and approaches in ways that will meet local needs. The major concepts listed below provide the organizing framework for the future of the SAPA area:

1. Mixed-Use Centers that include:
 - a. City Center located in downtown Scranton and a City Center Extension;
 - b. Borough Centers located in Clarks Green, Clarks Summit, Dalton, and Dunmore; and,
 - c. Village Centers located in Abington and Newton Townships;
2. Mixed-Use Corridors in Scranton and along US Route 6/11 in the Abingtons;
3. Employment Centers in Scranton and Dunmore;
4. Agricultural, Open Space and Limited, Very Low Density Residential areas throughout the SAPA area; and
5. Resource Conservation overlay that applies to many land use designations throughout the SAPA area.

These major concepts provide an approach that acknowledges the constraints of existing municipalities and meets the needs of urban, suburban, and rural areas. This approach will help SAPA municipalities to balance development, conservation and preservation in order to promote livable and desirable communities, improved economic development and workforce development and retention opportunities along with a healthy and functional network of greenways, open spaces, woodlands and outdoor recreation. The major concepts listed above are explained below in more detail.

Chapter Three: Growth Management Plan

LAND USE PLAN

Concept I – Mixed-Use Centers

Mixed-Use Centers include a City Center and its Extension, and both Borough and Village Centers. While the mixed-use focus is common among these centers, there is a clear difference in the scale and approach that will be taken in the City Center in Scranton versus the Waverly Village Center in Abington Township. There are differences today and there will be differences tomorrow between Dunmore Borough and Dalton Borough. However, the future of each of these centers relies on fostering a mixed-use environment that fits within the characteristics of each community.

Mixed-Use Centers will incorporate a combination of existing buildings, adaptively-reused structures, and new construction that will include ground floor retail shops, restaurants, and services with offices and/or residences above. The centers will provide public open spaces, safe and convenient access to transit, and expanded opportunities for pedestrian activity, including adequate sidewalks, on-street parking, landscaping, and pedestrian linkages to adjacent areas.

Not only do these centers offer opportunities for community revitalization, but they are also community focal points and include opportunities for services that meet the needs of those who live and work in their vicinity. In addition, these Mixed-Use-Centers can provide for the housing and activity needs of those entering the work force and older residents interested in downsizing their residences. These areas are served by public water and sewer; however, increasing the amount of development in this area may require additional capacity.

These centers will provide multiple destinations in a relatively compact area. Such an arrangement allows residences to be close to jobs, jobs to be close to shopping, shopping to be close to community facilities, and the potential for everything to be accessible by public transit. Providing a mix of uses allows residents the opportunity to walk or drive to these locations and take care of multiple needs within one trip, potentially reducing the need for automobile trips that increase gasoline consumption and roadway congestion.

Chapter Three: Growth Management Plan

LAND USE PLAN

Mixed-Use Centers also offer the availability of transportation options, including transit for mobility to locations elsewhere in the community and to regional destinations.

Mixed-Use Centers will be attractive, pleasant environments for strolling, shopping and, weather-permitting, dining *al fresco*. Sidewalks and small courtyards just off the street frontage will support a pedestrian-friendly setting. The inclusion of street trees will offer shade to pedestrians, reduce air conditioning loads on adjacent buildings, and lessen stormwater runoff, while “rain gardens” and other pervious surfaces contained in the ground plane will also lessen stormwater runoff.

The areas designated as Mixed-Use Centers are well established and many include historic and community resources. The evolution of these areas into more active centers will require an understanding of this context. Adaptive reuse and new development projects that are constructed in these centers will enhance and build upon what is positive about these areas as they respect the historic significance of local sites and districts.

City Center: The City Center designation applies to a portion of downtown Scranton generally bound on the west by the Lackawanna River, Olive and Pine Streets to the north, Jefferson Avenue to the east and the Steamtown National Historic Site to the south.

This area includes the heart of downtown Scranton. This plan recognizes the progress that Scranton has made toward downtown revitalization and anticipates it to continue. The presence of the University of Scranton and Lackawanna College, the impending arrival of the Commonwealth Medical College, and the anticipated riverfront trail/greenway form a solid foundation. In the future, this area will also include more mixed-use development with ground floor retail shops, restaurants and services, and offices and/or residences on the floors above. Adaptive reuse of existing buildings and “infill” of new buildings into the existing block structure are strongly encouraged. All development and redevelopment activities should occur with sensitivity to the historic context.

Chapter Three: Growth Management Plan

LAND USE PLAN

The City Center provides a high level of transit service, serving as a hub of transit activity. Pedestrian accessibility, safety and amenities are emphasized, through the provision of traffic calming, landscaping, lighting, and appropriate street furniture. Civic squares, parks, and urban green spaces are incorporated into development and redevelopment projects to provide public spaces for meeting, socializing and recreation.

City Center Extension: Located to the north and northeast of the City Center, this extended area is also intended for mixed-use development. While this area is not expected to hold the same intensity of uses as the City Center, it is expected to include more multi-story development and a greater mix of uses than the Urban Neighborhoods that surround it.

This area will make use of former industrial and warehousing buildings that will be converted to medium-to-high-density residential development, as well as retail and office uses. This combination of uses will often be structured as ground floor retail shops, restaurants, and services, with offices or residences above. This area will also offer live-work structures, attractive to artisans for the co-location of residences, studios, and galleries, and to other individuals and families as well. These areas will include adaptively-reused buildings and new infill structures, all completed with sensitivity toward the historic context. (The Laceworks complex, to be the home of the Artspace development, is an exemplar.) Similar to the City Center, the City Center Extension should include street trees, pedestrian-oriented lighting, and urban green spaces such as pocket parks.

Borough Centers are community focal points and hubs of mixed-use activity that support residential, retail and office uses. They will also attract residents to these areas for shopping and dining. Borough Centers are smaller in scale than the City Center and contain traditional building forms and uses. New and infill development will occur and when it does, it will be compatible with the existing character of each community. Borough Centers incorporate pedestrian amenities, civic open space, street trees, pocket parks, and pedestrian links to adjacent areas. This concentration of activity is a prerequisite for an improved level of public transportation service.

Chapter Three: Growth Management Plan

LAND USE PLAN

Within the SAPA area, Borough Centers are located in Clarks Green, Clarks Summit, Dalton, and Dunmore. Each of these boroughs has its own character and interests for the future.

- *Clarks Green Borough* does not intend to encourage a major expansion in the amount of commercial or mixed-use properties in its center. However, it does expect these properties to be improved over the planning period, which may provide opportunities for mixed-use development that will serve multiple needs and maintain the community's vitality.
- *Clarks Summit Borough* anticipates the continued improvement of properties within its center. Infill development may provide opportunities to expand the types of buildings to be found in the borough, including some multiple-floor structures that contain a vertical mixing of uses.
- *Dalton Borough* also expects the continued improvement of the properties within its center, anticipating that future changes will be of moderate scale, in proportion with the existing physical circumstances of the community, and reinforcing the pedestrian-friendly environment.
- *Dunmore Borough* looks to revitalize and upgrade the Blakely Street-Drinker Street area, including new multi-story structures with retail-office and retail-residential mixes, adaptively-reused historic structures, and an attractive, pedestrian-friendly environment with street trees, pedestrian-scaled lighting, and other streetscape amenities.

Village Centers are relatively small in scale and include village-scale housing and limited non-residential uses focused primarily on community uses and services for people who live in the village and nearby. Within the SAPA area, Village Centers include the Red Barn Village area in Newton Township and the Waverly Community in Abington Township.

Chapter Three: Growth Management Plan

LAND USE PLAN

- The *Red Barn Village* in Newton Township currently offers limited commercial services. Over the planning period, some expansion of available services is expected to occur in order to meet the needs of those who live nearby in Newton Township.
- *Waverly*, Abington Township is a historic community. Due to its designation as a historic district, the Township does not anticipate major changes in this location. The focus of this village center for the planning period will be to maintain and enhance its historic attributes.

Recommended and Not Recommended Uses

The following list of Recommended and Not Recommended uses and characteristics applies to Mixed-Use Centers.

Recommended

- Mixed-use, multi-story buildings, with retail shops at ground level, and offices or apartments above;
- Commercial buildings interspersed with community uses such as libraries, post office, educational centers, museums, galleries;
- Residential uses within walking distance of community uses and commercial services;
- Pedestrian-oriented buildings, directly accessible from sidewalks;
- Pedestrian-oriented lighting, benches, and landscaping; and,
- Parking structures to meet the needs of those who live, work and shop in this area (unlikely to occur in Village Centers, nor in Dalton or Clarks Green).

Not Recommended

- “Big-box” retail, office, or other business uses that require large single-floor selling or working spaces;
- Single-floor, free-standing, single-use retail buildings;
- Large surface parking lots; and,
- Sparse or non-existent landscaping.

Chapter Three: Growth Management Plan

LAND USE PLAN

Concept 2 - Mixed-Use Corridors

Mixed-Use Corridors are linear activity concentrations that include a mix of moderate-to-high-density residential development with retail and office uses. These areas have often been historically where nearby residents would go for services. However, some of these corridors, especially those in urban areas, have become underused and are, in some cases, in economic decline. Recently in Pennsylvania and throughout the country there has been a resurgence in interest for corridor revitalization as communities seek options for where they shop and do business. Mixed-Use Corridors, when located in the vicinity of concentrations of population, provide a destination for adjacent residential neighborhoods as well as for a broader area. Activities along these corridors are compatible with adjacent areas, although the corridor itself may be more intensely developed than neighborhoods alongside. Pedestrian access both to and from the surrounding areas and along the corridors is a hallmark, as is public transportation along the corridor.

Several corridors have been identified on the Land Use Map. Many are several miles in length and it is expected that, within these corridors, member municipalities will identify targeted locations for revitalization that will, among other things, serve as catalysts for revitalization up and down the corridor.

- *Scranton* envisions several Mixed-Use Corridors for portions of North Main Avenue and Providence Road, South Main Avenue, Pittston Avenue, Cedar Avenue, and Mulberry Street. These corridors are good examples of traditional commercial areas where targeted mixed-use development can help revitalize and make them, once again, convenient destinations to serve the needs of surrounding urban neighborhoods. The parts of the Mixed-Use Corridors that are more downtown-like will have much in common with the Mixed-Use Centers, such as sensitivity to historic resources, street trees, street furniture, pocket parks, community uses, pedestrian-oriented lighting, etc.

Chapter Three: Growth Management Plan

LAND USE PLAN

- In the *Abingtons*, it is anticipated that US Route 6/11 will evolve into a Mixed-Use Corridor along portions of that roadway in South Abington Township, Clarks Summit Borough and Glenburn Township. The South Abington and Clarks Summit portion includes the area that is predominately commercial, located from Chinchilla in the south to just south of the designated Borough Center in Clarks Summit.

Through infill development and redevelopment, this area is expected to evolve from strictly auto-oriented single-use buildings to multi-story mixed-use buildings that include retail, office and residential uses. The area will include improved opportunities for pedestrian and bicycle mobility, including connections to the park in South Abington.

The Mixed-Use Corridor located further north on US Route 6/11 includes sections of Clark Summit Borough, South Abington Township and Glenburn Township. This area will also include opportunities for the existing highway-oriented business properties to be infilled and eventually replaced by mixed-use development that will serve highway travelers and residents who live on the corridor and in its vicinity.

For both the southern and northern mixed-use corridors on US Route 6/11, creating and improving pedestrian accessibility should be a priority. In the corridor, there will be potential linkage to the Trolley Trail. Trees and landscaped "rain gardens" will lessen stormwater runoff and provide many benefits, as in the Mixed-Use Centers.

Concept 3 - Employment Centers

Employment Centers include concentrations of commercial, industrial, and some office land uses. Many of the larger centers will include flex space to accommodate low-impact light industrial development, assembly, and high technology ventures, and may also accommodate some retail uses to meet the needs of local employees. Since the larger centers benefit from convenient access to the regional highway network and have businesses and industry already, it makes sense to look at ways that the further development

Chapter Three: Growth Management Plan

LAND USE PLAN

at these locations and possible redevelopment of existing business properties may occur to meet current and future demands in these business and industrial sectors and continue to provide sound fiscal and employment bases for the SAPA area.

Examples of major Employment Centers are found along Keyser Avenue in Scranton and at I-81 interchanges in both Scranton and Dunmore. Other Employment Centers are found elsewhere in Scranton and Dunmore. Smaller examples occur in the Abingtons. In some cases, redevelopment will occur over the planning period as older manufacturing and distribution buildings are replaced by newer structures that provide flexibility for new higher technology enterprises. And as older centers are redeveloped, they can transition into multi-story complexes that include office uses.

As areas are developed and redeveloped, business and industrial park and building sites should be retrofitted to accommodate pedestrian and bicycle mobility and to provide for both safe and convenient access to public transit. This may be accomplished through site design that provides for buildings constructed up to street frontages and paths connecting to a pedestrian network. This is particularly important along existing and potential transit corridors.

While many different uses are possible for these centers, some are more compatible than others, as noted below:

Recommended

- Multi-story buildings that may include structured parking and the provision for limited retail to serve some of the needs of employees;
- Pedestrian and bicycle-friendly buildings, accessible from sidewalks along roadways that include convenient and safe connections to the bicycle and pedestrian network and to transit; and
- Lighting and landscaping that creates a safe, attractive and comfortable setting for bicyclists, pedestrians, and transit riders.

Chapter Three: Growth Management Plan

LAND USE PLAN

Not Recommended

- Large building setbacks;
- Parking lots between streets and buildings; and
- Sparse or non-existent landscaping and poor lighting.

Concept 4 - Agriculture, Open Space, and Limited, Very Low Density Residential

Agriculture, Open Space, and Limited, Very Low Density Residential areas are intended for the practice of agriculture and forestry and to be maintained as an open landscape. A major goal of the Comprehensive Plan is to conserve agricultural land; the Land Use Plan apportions the SAPA area into areas for urban and suburban activity and areas not intended for urban and suburban activity. The intent is to limit development outside the areas designated for urban and suburban activity and to encourage continuing agricultural production, as well as the protection of the rural landscape. This area additionally permits low intensity recreational and residential uses, but only to the extent that new development does not diminish or conflict with agricultural or wooded lands or degrade areas of scenic beauty. Except for agricultural, recreational, and resource-based enterprises, new commercial and industrial uses should be prohibited in rural areas.

Maintaining agriculture in the SAPA area is linked to the economic prosperity and quality of life of the entire population. Agricultural areas will provide opportunities for growing and marketing produce and value-added products that can be sold locally and regionally. Agricultural areas can also provide opportunities for crops that can be used in the production of ethanol or other sources of renewable energy.

The Land Use Plan implies a general discouragement of development within agricultural and wooded areas, coupled with incentives to develop within areas designated for urban and suburban activity. Various plan implementation techniques may be applied to bring about the desired result.

Chapter Three: Growth Management Plan

LAND USE PLAN

Discouragement of development in rural areas may be achieved through the promotion and enactment of agricultural conservation easements, the adoption of agricultural zoning, and the encouragement of cluster residential development.

The Land Use Plan does recognize that some residential development will occur in these areas. Given that prospect, it is important that various types of land development controls be adopted that will ensure that when development does take place outside of areas designated for urban and suburban activity, it is of high quality and that the process of development actually contributes to long-term conservation of land. Examples of this include the exercise of development rights to build houses in an agricultural area coupled with regulations limiting the area for houses to only a small piece of the farm and preserving most of the acreage for agriculture in perpetuity. Another example is the implementation of transfer-of-development-rights (TDRs) opportunities. Here a landowner's right to develop dwellings on his property may be separated from the property in question and exercised on another, more-appropriately-located, property. As part of this process, the original landowner gains monetary benefit from exercising a right to develop, in return for which he agrees to use the original property in question for agriculture or specified open space/recreation uses only, in perpetuity.

In general, the Land Use Plan can support a variety of land development concepts in rural areas, but only if these approaches support the basic principles of conserving land for agricultural and other valid rural purposes. Very low overall densities only should be permitted, such as in legitimate agricultural zoning.

Clustering of permitted residential units on a small portion of a tract, while the rest is left open in perpetuity for agricultural or other, legitimate resource conservation purposes, is fundamental. And a TDR process that moves the prospective units from agricultural areas entirely is supportable.

Chapter Three: Growth Management Plan

LAND USE PLAN

Concept 5 - Resource Conservation

The Resource Conservation designation is an overlay that can be found throughout the SAPA area, regardless of the underlying land use. The resource conservation overlay is comprised of the following elements:

- Rural wooded areas;
- 150-foot buffer along all surface water features (ponds, lakes, waterways), and wetlands;
- Floodplains;
- Steep slopes.

A major goal of the Comprehensive Plan is to conserve resource areas, including areas of steep slopes and woodlands, but also aquifer recharge areas, source water supply watersheds, and cultural resources. The intent of the overlay is to provide recommendations for policies that protect natural features, as explained in more detail in the sections that follow.

North Abington Township has chosen not to include the resource conservation overlay in its low density residential (light yellow) areas on the Land Use Plan map.

Open Space Network

The Land Use Plan supports the recommendations of the 2004 Lackawanna and Luzerne Counties *Open Space, Greenways & Outdoor Recreation Master Plan*. These recommendations state the need to protect natural resources and provide for outdoor recreational activity.

The SAPA Plan also promotes safe, convenient options for residents, employees and visitors to travel within the SAPA area without the need for an automobile, utilizing linear greenways and a trails network.

Chapter Three: Growth Management Plan

LAND USE PLAN

The Land Use Plan recognizes the vulnerable natural features identified by the Resource Conservation overlay and it supports the conservation and/or preservation of significant natural resource areas, including waterways, riparian buffers, woodlands and steep slope, together with deed-restricted permanent undeveloped lands, greenways, and a variety of designated recreational lands, to help create the open space system for the SAPA area.

A continuous, interconnected, permanent open space network is intended to serve several purposes, as follows:

- Conserve areas of environmentally-sensitive and culturally-valuable resources;
- Establish a framework for trails for walking, hiking, and cycling;
- Permit pedestrian and bicycle access to a variety of destinations, including adjacent and nearby residential developments, schools, special natural features, shopping, and specific sites for recreational facilities;
- Provide for private open space and recreational space needs of the residents of residential developments;
- Provide appropriate buffers between roadways and residential areas;
- Provide appropriate buffers, where possible, between areas of incompatible land use;
- Provide landscaped setbacks along road corridors; and
- Maintain and enhance wildlife habitat.

Natural-feature corridors, combined with recommended linear buffers and greenways, are an important feature of the Land Use Plan. As well as the primary mechanism to protect natural resources, these areas may offer additional long-term benefits to the community, such as the control of potential stormwater flood damage and maintenance of stable groundwater levels.

Regulations governing land development are extremely important in helping to ensure the protection of environmentally-sensitive and culturally-valuable lands and in creating the important buffers and greenways. Zoning alternatives such as residential clustering concentrates a tract's potential development on a small portion of the overall property, leaving the remaining

Chapter Three: Growth Management Plan

LAND USE PLAN

area as permanent open space. Requiring rigorous environmental site analysis for all land development projects can also promote the protection of environmentally-sensitive and culturally-valuable lands and the creation of important greenways and buffers.

In addition to residential clustering opportunities, permanent open space and greenways are supported by the establishment, through development regulations, of landscaped buffers and setbacks along road corridors and along the perimeter of developed tracts of land. In instances where tracts with incompatible land uses adjoin one another, the setback open space may also serve as a linear buffer, containing dense vegetation and/or berming to ensure adequate screening between the differing land uses. These corridors of open space also have the capability of becoming easements for pedestrian movement along the perimeter of major tracts of land as part of multi-municipal-wide and multi-municipal networks of trails.

This system offers an opportunity to expand open space and recreational opportunities in the SAPA area, and is intended to be complementary to existing local recreational facilities.

SAPA should work with potential planning partners, including the Pennsylvania Department of Conservation and Natural Resources through its Pocono Land and Water Conservation Landscape Initiative, to promote the conservation of important lands and the sensitive use of portions of them for recreational and open space purposes.

Other Land Use Designations

The Land Use Plan contains a combination of additional ideas for residential uses, urban neighborhoods, and institutional uses in the SAPA area, as follows:

Residential – Low/Moderate Density

Residential – Low/Moderate Density areas are generally located around Borough Centers in the Abingtons as well as the Waverly Village Center and extend across municipal boundaries. Such areas are strongly residential in

Chapter Three: Growth Management Plan

LAND USE PLAN

character and, in the future, will offer road, sidewalk, and trail connections to their local Centers and links to larger open space areas. New development in these areas should be compatible with existing neighborhoods, where they exist.

In general, low/moderate density development is proposed for most of the areas designated as strictly residential in the Land Use Plan. This reflects the single-family detached dwelling unit character of the majority of the suburban Abingtons area and reinforces this quality into the future.

Residential – Low Density

Low density development is characterized by pre-2008 single-family detached dwelling units located on large lots. Post-2008, low density development is highly clustered, with disturbance of land for dwelling construction relatively limited (sometimes referred to as “conservation development”). This development includes a high percentage of permanent open space and natural resource protection occurring in conjunction with land development. This type of development is generally found in some of the more rural locations in the SAPA area, such as Newton, West Abington, North Abington, and parts of other Abingtons communities, as well as east of I-81 in Scranton and Dunmore.

Urban Neighborhoods

These neighborhoods are primarily intended for residential use but may also include some supporting retail, office, and institutional uses. The focus for Urban Neighborhoods is an improved existing housing stock and a high rate of owner-occupied dwellings.

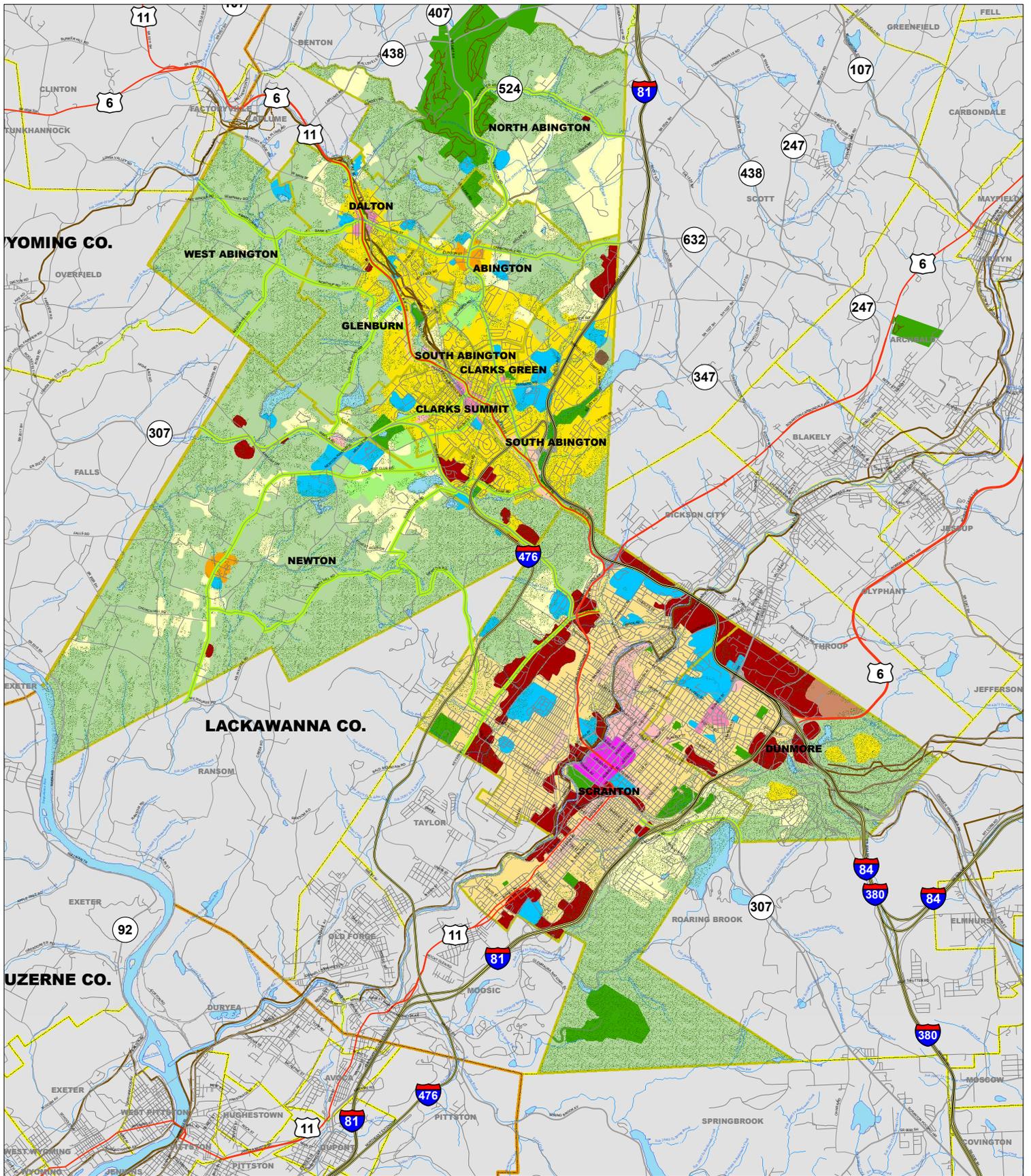
In cases where demolition is required to promote public health and safety, open space is created or infill development occurs that is compatible with the context. Urban greening is incorporated into these neighborhoods and includes parks, green linear connectors, and urban gardens, the latter emphasized in areas where demolition has occurred. Examples of urban neighborhoods are found in Dunmore and Scranton.

Chapter Three: Growth Management Plan

LAND USE PLAN

Institutional

Institutional uses, including properties owned and operated by schools (ranging from elementary to middle and high schools and to colleges and universities as well as private education establishments), will be maintained and, in some cases, upgraded over the planning period. Also included in this general category are SAPA municipal administrative buildings, public libraries, places of worship and cemeteries. (Note that questions of scale are relevant here; a relatively small institution that exists within a Mixed-Use Center, for example, may not be delineated as a specific “institutional” area on the Land Use Plan map.)



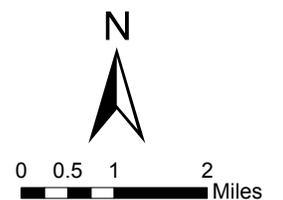
Scranton-Abingtons Planning Association

Comprehensive Plan

FIGURE 3.2.1

LAND USE PLAN

- | | | |
|---------------------|--|-----------------------------|
| Study Area Boundary | Residential - Low/Moderate Density | Transportation & Utilities |
| City Center | Residential - Low Density | Resource Conservation Areas |
| Borough Center | Institutional | Ped / Bike Roadway Network |
| Village Center | Recreational | Trails |
| Employment Center | Golf Course | |
| Mixed Use | Agriculture, Open Space and Limited Very Low Density Residential | |
| Mixed Use Corridor | Quarry | |
| Urban Neighborhood | Landfill | |



January 2010

Chapter Three: Growth Management Plan

TRANSPORTATION PLAN

SECTION 3.3: TRANSPORTATION PLAN

GOAL:

Achieve a safe and efficient transportation system that fosters environmental sustainability, is compatible with the natural, agricultural and developed areas of Scranton-Abingtons Planning Association (SAPA) municipalities and that provides viable transportation alternatives, including public transportation, walking, access for the disabled, biking and driving.

OBJECTIVES:

1. Locate large-scale businesses and employment centers within or with direct access to major transportation corridors or transit networks in order to maximize accessibility for employees and clients and limit traffic impacts on residential areas.
2. Encourage traffic generated by new developments and inter-community traffic to use arterial roads and discourage dispersion of this traffic into residential neighborhoods.
3. Maintain an acceptable level of service on the SAPA area's arterial roads.
4. Identify roadway corridors, segments, and intersections with safety problems, along with methods of eliminating these deficiencies.
5. Identify roadway corridor, segment, and intersection changes that would enhance circulation, economic growth, and quality of life.
6. Encourage the development and expansion of the public transportation system that serves the SAPA area and opportunities for multi-modal integration allowing for easy switching from one mode of transportation (pedestrian, bicycle, automobile, bus, train) to another.

Chapter Three: Growth Management Plan

TRANSPORTATION PLAN

7. Explore the opportunity to provide public transit service from Scranton to the *Abingtons* via existing rail rights-of-way that presently link the two areas.
8. Explore opportunities to expand use of freight rail to serve existing and future businesses and identify prospective locations for an intermodal freight center.
9. Identify additional road linkages to be constructed in concert with development and redevelopment of land.
10. Minimize costs (construction, maintenance, social, and environmental) associated with the development of new and improved roadway segments.
11. Identify and generally set priorities for projects that are appropriate for inclusion on Lackawanna County's Transportation Improvement Plan (TIP) and PennDOT's twelve-year Highway Program.
12. Develop opportunities for travel in SAPA municipalities by means other than private automobiles including bicycle and pedestrian transportation; pay particular attention to links to open space and recreational amenities within and adjacent to the SAPA area.
13. Promote bicycle-and pedestrian-friendly roadway design in order to promote safe and convenient travel opportunities.

Introduction

The Transportation Plan proposes to upgrade the safety, connectivity, convenience, and efficiency of the SAPA area's transportation network in a way that is compatible with the built and natural environments of its municipalities. This includes maintaining and improving access and mobility for vehicles, bicycles, pedestrians and transit patrons.

Chapter Three: Growth Management Plan

TRANSPORTATION PLAN

The SAPA area is highly accessible by private automobile. It also affords some opportunities for residents and employees to use transit, bicycle, or walk. The area is served either directly or through nearby interchanges by four limited-access highways that include the Northeast Extension of the Pennsylvania Turnpike (I-476) and Interstates 81, 84, and 380. In addition, the SAPA area is traversed by US Routes 6 and 11 and other state and local roads, including Pennsylvania Routes 307, 347, 407 and 632.

The County of Lackawanna Transit System (COLTS) serves the City of Scranton and surrounding areas of Lackawanna County Monday through Saturday. COLTS operates a 32-bus fleet and contracts for para-transit and other specialized transit services (for details, see Chapter 2, Section 5).

Sidewalks are generally found in the more urbanized areas such as the City of Scranton, the boroughs and older suburban areas, though newer suburban developments often lack them.

The Growth Management Plan seeks to improve mobility in support of focused development and redevelopment in the SAPA area, including upgrades to the system of roadways, sidewalks, and multi-use pathways. A focus for improved infrastructure will be Mixed-Use Centers, Mixed-Use Corridors, and Employment Centers (as described in the Land Use Plan section) and connections to those locations from other parts of the area.

Mobility and the Major Planning Concepts

The Land Use Plan's major planning concepts outline three types of settings for development and redevelopment activity. While this Transportation Plan describes how to improve transportation infrastructure to support mobility throughout the Scranton-Abingtons Planning Association area, the Transportation Plan also stresses support for these priority settings. In every case, the development or redevelopment of them should be seen as an opportunity to improve the transportation network.

Chapter Three: Growth Management Plan

TRANSPORTATION PLAN

The Mixed-Use Centers, Mixed-Use Corridors, and Employment Centers settings all anticipate development and redevelopment over time, providing an important opportunity to both meet multi-modal transportation needs created by the development and redevelopment and also to improve the surrounding transportation network. This objective can be accomplished by promoting improved transportation linkages to be designed and constructed in concert with planned development and redevelopment.

Mixed-Use Centers, Mixed-Use Corridors, and Employment Centers themselves need to have effective systems of mobility to allow circulation within each setting (by various modes) and to connect to external systems of roads, transitways, and trails. The Land Use Plan shows a number of locations for new Mixed-Use Centers, Mixed-Use Corridors, and Employment Centers, but most are existing settings, to be reinforced and revitalized over the planning period. For existing settings, the challenge will be to optimize the existing roadway system so that a balance is achieved between movement of motorized vehicles and the establishment of transit-, pedestrian-, and bicycle-friendly streetscapes that are key to retaining current residents and attracting new residents, employment, and activity.

Mixed-Use Centers and Mixed-Use Corridors are to be closely-knit, mixed-use centers of residences, shopping, employment, community facilities, and open space. For new Mixed-Use Centers and Mixed-Use Corridors, a hierarchy of roads needs to be put in place in support of the intended walkable, and transit-supportive character for these locations. Arterial, collector, boulevard, commercial, residential, and alley types of roadways should be in the mix, with appropriate functions, design speeds, and rights-of-way and cartway cross-sections. A grid or modified grid of streets, with small blocks, is widely recognized as the most supportive for pedestrian and bicycle mobility and creates the most flexible kind of network for cars, trucks, and buses as well. Master plans, design guidelines, and development codes need to be completed for new Mixed-Use Centers, Mixed-Use Corridors, and Employment Centers in particular, to ensure that roadways are constructed as “complete streets”, with sidewalks, crosswalks, landscaping, pedestrian-oriented lighting, provisions for transit stops and bicycle movement, and, in most cases, on-street parking.

Chapter Three: Growth Management Plan

TRANSPORTATION PLAN

Construction of new roadways for Mixed-Use Centers, Mixed-Use Corridors, and Employment Centers is likely to occur by a number of different means. New roadways for new Mixed-Use Centers, Mixed-Use Corridors, and Employment Centers may be built by private developers, in accordance with locally-adopted master plans, design guidelines, and development codes and then dedicated to a municipality. Certain roadways may be constructed or upgraded as part of public-private partnerships. Major roadways and changes to existing streets may be undertaken solely by the public sector.

The linear fashion in which several Borough Centers and the US Route 6/11 Mixed-Use Corridor line up in the *Abingtons* suggests the potential for a mass transit line that would connect these places and continue on to Scranton. Ideally, the line would offer service that would not compete for roadway lane space with regular vehicular traffic and so avoid the congestion present at peak hours on US Route 6/11 or through the Notch on the Morgan Highway. Conceivably, this could be a rubber-tired vehicle traveling in its own lane beside traffic on US Route 6/11 or the Morgan Highway, but there are serious right-of-way width restrictions that might prevent implementation of such a service. An alternative would be a rubber-tired vehicle traveling within a railroad right-of-way alongside (but not on) the tracks. A third idea would be joint use of a rail line for transit in addition to freight.

Mixed-Use Centers

Mixed-Use Centers are a central recommendation of the SAPA Plan. They range from the Scranton City Center and its Extension to the Borough and Village Centers. These locations are recognized centers, already have transit service, and are somewhat walkable in present condition.

Chapter Three: Growth Management Plan

TRANSPORTATION PLAN

These locations have good road access and properties that are vacant or underutilized and/or could be converted to new uses. Plans for the future will see a greater concentration and pedestrian-oriented mix of residential, retail, office, community, and open space uses.

These Centers will emphasize a concentration of uses in a form that is supportive of “one-stop” shopping, close physical relationships among residential, employment, retail, eating-and-drinking, and recreating components, and internal pedestrian movement. Additional public transportation (bus, vanpool, and shuttle bus) will be seriously considered for these centers; as these Centers are reinforced, a concentration of potential transit patrons will emerge. As these settings are developed and redeveloped, support for pedestrian movement will be required. This approach will include traffic calming measures, crosswalks, landscaping, and medians in select locations in order to improve safety and increase pedestrian comfort.

Mixed-Use Corridors

Mixed-Use Corridors, which range from several important local corridors in the City of Scranton to the US Route 6/11 corridor in South Abington, Clarks Summit, and Glenburn, are linear, and each will require upgrades to their respective main “spine” to support the mixed-use character that is intended. Road improvements may be needed to move vehicles in a safe and efficient manner, but a pedestrian and bike-friendly atmosphere must be nurtured as well. Transit service along the spine is a natural evolution for these corridors, providing access to destinations on the corridor and to other Mixed-Use Centers, Mixed-Use Corridors, and Employment Centers.

Employment Centers

Employment Centers in Scranton and Dunmore exist today and are expected to intensify through the planning period as single story structures are replaced with multi-story buildings to accommodate the future demand for office and flex space needs. (Flex space refers to industrial or office space that can be easily converted to multiple different commercial and industrial uses.) The key transportation need for these Centers will continue to be

Chapter Three: Growth Management Plan

TRANSPORTATION PLAN

convenient access from the higher order roadways such as I-81 and the Pennsylvania Turnpike.

As the number of employees increases in these Centers, transit may become a more realistic option. This could include increased frequency of bus service and also an increase in shuttle service from these Centers to Park-and-Ride lots located at interchanges of the Interstate Highway system.

The prospect of increased public transit service will require support from SAPA municipalities. In order for the transit provider to be induced to improve service, it needs to have some assurance that there will be adequate numbers of patrons to make the service financially viable. In order for there to be adequate numbers of patrons, conditions need to be more supportive of potential transit usage. For example, conditions at many employment centers are not very “transit friendly” today. Buildings are mostly sited a great distance from the road, making for a long walk from a transit stop at the edge of the travel way to a business or similar destination. Sidewalks along the frontage roadway may be lacking. Bus stops are spaced along the roadway and transit patrons need safe, convenient ways to walk to their destinations from those stops. Sidewalks perpendicular to the frontage road are also needed, so that transit users can alight from a bus and walk to their destinations.

In support of public transit use, it is recommended that Employment Centers be provided with sidewalks along frontage roads and connecting sidewalks (and all-weather trails, where appropriate) to businesses within one-quarter of a mile. Shelters at bus stops would also help to make transit use an attractive transportation alternative for commuters.

Development standards for properties along Keyser Avenue and similar Employment Center arterial and major collector roadways should be appropriate for transit-oriented corridors. For example, placing buildings close to the road right-of-way, with parking in side and rear areas, is a basic measure to make transit stops more convenient to people who work along these routes. Where large building setbacks from bus stops exist, landscaped pedestrian walkways should be provided from the street right-of-way to the front entrance of the buildings.

Chapter Three: Growth Management Plan

TRANSPORTATION PLAN

Corridors of Concern

Future mobility improvements to the previously identified Corridors of Concern (see Chapter 2, Section 5) must be balanced against the overall planning goals for the SAPA area. Because each of these corridors (Mulberry Street, Blakely Street, and US Route 6/11) are located within established areas, the implementation of “capacity-orientated” roadway improvements such as widenings would have significant impacts on adjacent lands and may ultimately be less desirable than the current vehicular congestion.

Mulberry Street (Scranton)

The existing four-lane section of Mulberry Street, adjacent to central Scranton, should be converted to a three-lane section. While this may result in some reduction of the theoretical vehicular capacity of the roadway, the conversion would yield benefits in safety and non-vehicular mobility. Specifically, utilizing a consistent three-lane section with dedicated left turning lanes would reduce the disruption to vehicular flow created by left turning vehicles stopped in the inside lane. The reduced cross-section would also result in shorter pedestrian crossing distances, permitting signal timing to be adjusted to minimize side-street green time and maximize through green along Mulberry Street. The excess cartway could also be utilized for additional on-street parking or marked as bicycle lanes. With or without this conversion, pedestrian facilities along the corridor need to be maintained in good order. Sidewalks in disrepair or with less than desirable materials, such as asphalt, should be replaced with concrete and all pedestrian crossings should be brought into compliance with current accessibility standards.

Blakely Street (Dunmore)

The primary constraint to vehicular mobility along Blakely Street is the Drinker Street intersection. At this location, substantive improvements to capacity would require additional through lanes, which would have a significant effect on the adjacent land uses. As an alternative, more modest improvements could be obtained through upgrades to the existing traffic signal equipment. Field observations indicate that the existing equipment

Chapter Three: Growth Management Plan

TRANSPORTATION PLAN

(post-mounted controller, span wire signals, limited actuation) could be enhanced to maximize the throughput with the current geometry. Enhanced equipment could also be utilized to implement modified timings during peak periods to clear excessive queues along Blakely Street.

US Route 6/11 (Clarks Summit)

Further consideration should be given to the implementation of the less intrusive improvements identified in the Abington Area Transportation Planning Study, as follows: An additional southbound lane on South Abington Road; upgraded signal equipment at Winola Road; and a northbound right turn lane on Morgan Highway at West Grove Street. Each of these improvements could be implemented with marginal effect on the adjacent land uses and would provide some level of enhanced vehicular mobility. Additionally, the pedestrian-related improvements associated with continuity of pedestrian facilities and accessibility compliance should continue to be pursued.

As part of the current planning process, the by-pass route concept was given additional consideration. Alternative routes considered generally originated at Morgan Highway and proceeded north to intersect US Route 6/11 south of Glenburn. Overall, the potential for these routes appeared limited due to various topographical and/or environmental constraints, ranging from Summit Lake (southern divergence) to Abington Heights High School and the vertical grades within the vicinity of the Chevrolet dealership (Morgan Highway extended). More detailed planning and the adoption of an Official Map may allow for the reservation of right-of-way for a future by-pass; however, under current conditions the constraining factors present significant obstacles.

Transportation Master Plan

Scranton-Abingtons Planning Association will develop a Transportation Master Plan that provides a comprehensive strategy for maintaining and upgrading the transportation network to serve the needs of Scranton-Abingtons Planning Association today and in the future. This master plan will provide further detail about how to implement the concepts described in the above discussion of focus areas and important corridors, and for maintaining

Chapter Three: Growth Management Plan

TRANSPORTATION PLAN

acceptable levels of service on the SAPA area's arterial and collector roadways. In addition, the master plan will investigate and provide an inventory of roadway intersections and segments that require upgrading in the future. However, any interest in expanding the capacity of certain roadways will be tempered by the interest in retaining the historic/rural character of select roadways. The SAPA Transportation Plan will be consistent with the Bi-County Long-Range Transportation Plan.

The master plan will also recommend traffic calming methods and describe locations where these strategies will be appropriate. It will investigate how access management may be applied to roadways in order to preserve existing transportation capacity and to both maintain and improve safety conditions along these roadways. The following sections provide guidance for each of these aspects of the Transportation Master Plan:

Functional Classification Review

The first step in the Transportation Master Plan will be to review and determine the SAPA area's preferred Functional Classification for the roadways in the Scranton-Abingtons Planning Association jurisdiction. The Functional Classification information that is currently in Chapter 2 was gathered from the Pennsylvania Department of Transportation (PennDOT). SAPA will review this classification, consider the purpose of the roadway, and determine whether they match. If they do not match, SAPA will coordinate with PennDOT and come to an agreement about the classification.

Information regarding functional classification of roadways can be accessed through national, state, and county sources such as the documents listed below:

1. *A Policy on Geometric Design of Highways and Streets*, American Association of State Highway Transportation Officials (AASHTO). This reference is often known as "The Green Book";
2. *Guidelines for the Design of Local Public Streets, Publication #70*, The Pennsylvania Department of Transportation;

Chapter Three: Growth Management Plan

TRANSPORTATION PLAN

3. *Road Functional Classification - Technical Memorandum An Element of Connecting Landscapes – the Transportation Plan for Chester County, Chester County Planning Commission.*

Ultimate Right-of-Way Map

Scranton-Abingtons Planning Association will prepare an “Ultimate Right-of-Way” map for all roads in the multi-municipality area. Ultimate rights-of-way shown for each street will be appropriate for its functional classification, projected traffic volumes, land uses of abutting properties, and general neighborhood or district character.

This task will begin with an understanding of typical roadway right-of-way widths and their purpose. These widths are based on a functional classification. For example: a typical arterial ranges from 100-120 feet wide and is used to travel some distance; a typical collector ranges from 60-80 feet wide and might be used to get across town; and, a typical local roadway ranges from 40-60 feet wide and is primarily used to access property. The following questions will be important in developing the ultimate right-of-way map:

1. Consider the existing roads in comparison to the generally accepted standards for that roadway type;
2. Determine how the road is intended to serve the area today and in the future; and,
3. Identify any changes that might be required in the future to safely accommodate users of all types and modes, and for other needs such as utilities and drainage.

The ultimate rights-of-way will incorporate the Ped/Bike Roadway Network (“Green Routes”) Network throughout the SAPA area as it is identified in the Land Use Plan. This network is intended to provide a safe and convenient way for people to travel throughout the SAPA area using means other than the private automobile. Depending upon the roadway involved, and the opportunities available, this network may be advanced using tools such as an expanded, striped shoulder or by providing a separate path adjacent to the roadway.

Chapter Three: Growth Management Plan

TRANSPORTATION PLAN

All of this information will be incorporated into or referenced in Subdivision and Land Development Ordinances and all applicants for subdivision and land development approval will be expected to dedicate to the relevant municipality or the State, lands between the existing right-of-way line and ultimate right-of-way in order to accommodate future road widening or other uses such as the development of the Ped/Bike Roadway Network. Ultimate Right-of-Way maps are a valuable long-range planning tool, and appropriate to anticipate and accommodate changes to the roadway network that will be needed over time.

Intersection and Roadway Segment Changes

Roadway intersections can work efficiently and safely or become points for delay and conflict. The Scranton-Abingtons Planning Association will evaluate its needs for roadway and intersection improvements and establish priorities for advocacy with county, state, and federal assistance. In addition to intersections, the SAPA area will consider modifications to some local roadway segments.

Bridges

The Master Plan will also address the bridges located in the SAPA area and develop a set of recommendations for changes required to alleviate congestion on local roads.

Historic Roads

The SAPA area will pay careful attention to how road expansions and widening projects on some roadways could affect their rural historic character. Historic roads are characterized by narrow widths, no curbs, and vegetation close to the roadway. While the SAPA area will consider projects to accommodate pedestrians and bicyclists along these roadways, projects that would substantially increase roadway capacity, speed, and encourage traffic to divert from other, more appropriate roads within the transportation network will be discouraged.

Chapter Three: Growth Management Plan

TRANSPORTATION PLAN

Traffic Management and Calming

The Scranton-Abingtons Planning Association will examine existing and future needs and integrate smart traffic monitoring systems for both motorists and pedestrians. Such systems on major roadways will serve to move traffic more safely and efficiently through traffic light synchronization. Enhanced pedestrian areas and crossings, especially in business districts, will improve the walkability of communities.

There is increasing concern about vehicles traveling at a high rate of speed on local, often residential roads. Traffic calming measures introduce physical design elements to existing or new roadways in order to reduce vehicular speed to an appropriate rate. Priority attention will be focused on roads near schools and collector roads in residential areas with the likelihood of increased pedestrian usage.

The Transportation Master Plan will consider the latest traffic calming methods and be mindful that traffic calming strategies have their pros and cons; some are not appropriate or preferred for certain streets. The following sources provide additional guidance regarding traffic calming:

- *Traffic Calming: State of the Practice*, Reid Ewing;
- *Pennsylvania's Traffic Calming Handbook*, Pennsylvania Department of Transportation;
- *Alternative Treatments for At-Grade Pedestrian Crossings*, Nazir Lalani;
- *Roundabouts: An Informational Guide*, Federal Highway Administration.

Access Management

In the SAPA area, responsibility for most roadway ownership falls either to PennDOT or the municipalities. In addition to maintenance responsibilities, each jurisdiction is also responsible for controlling street and driveway access to the roadways. When access questions are handled on a case-by-case basis, the result is often inefficient and frequently hazardous access to public rights-of-way. Therefore, access management standards will be considered for roadways in the SAPA area, especially its important corridors.

Chapter Three: Growth Management Plan

TRANSPORTATION PLAN

PennDOT has developed an access management handbook that can serve as a resource. The SAPA area will develop a set of access standards for US Route 6/11 in particular, and also other corridors in the SAPA area to be determined as part of the Transportation Master Plan development. The intent is to maintain and enhance mobility and safety in the community and guard against excessive numbers of driveways.

In developing the access management standards, regulation of the following will be considered:

- Frequency of driveways along roadways, to reduce the occurrence of traffic conflicts between turning and through traffic;
- Minimum separation between driveways, to curtail the safety risks of decelerating traffic on through traffic;
- Corner clearance — the distance from the nearest roadway intersection to the driveway;
- Building and parking setbacks, to protect and enhance views along roadway corridors and to ensure adequate lines of sight at driveways (although excessive building setbacks will be avoided);
- Where access is available to a minor intersecting roadway, curtail or deny access to the major roadway;
- Consolidate access to adjacent properties, including cross easements, frontage roads, and joint driveways; and
- Provide deceleration, acceleration, and turn lanes for access to and from each new development, as appropriate.

The application of these access management principles can vary in type and degree based upon a road's function and physical characteristics, the current level of development along it, the type and intensity of proposed land use, the level of significance of bordering historic and cultural features, and other factors, such as posted speed limits, or quality of views down the road corridor or across it.

It is possible to develop sets of access management standards that can be applied, as appropriate, to other specific roads in the SAPA area. In this manner, roads can have specific access management standards applied as

Chapter Three: Growth Management Plan

TRANSPORTATION PLAN

overlay districts, which can then be incorporated into a zoning ordinance. An application for zoning approval, subdivision or land development, or a building permit, would trigger a review of the application in light of the access management standards applicable to the specific road fronting the applicant's property. Approval would be contingent upon the application being consistent with the access management standards for that road. Access management strategies must be balanced approaches that do not simply increase vehicle speed, thereby creating new hazards.

Pedestrian and Bicycle Network

Bicycle and pedestrian mobility is considered a valid mode of travel in the SAPA area. Recognizing that bicycle and pedestrian mobility is not simply an option for improved health and recreation, but is an important transportation option, lends greater urgency and importance to proposed improvements.

The Ped/Bike Roadway (Green Routes) Network identified in the Land Use Plan builds on this determined need to improve pedestrian and bicycle accommodations throughout the SAPA area. This Ped/Bike Roadway Network is intended to provide bicycle and pedestrian routes linking all areas within the Scranton-Abingtons Planning Association. The setting of priorities for developing the full Ped/Bike Roadway Network and identifying key techniques for its implementation will be an integral part of the preparation of a Transportation Master Plan for the SAPA area.

Improved Public Transportation Connections

Public transportation in the Scranton-Abingtons Planning Association area is provided by the County of Lackawanna Transit System (COLTS) buses. The Mixed-Use Centers, Mixed-Use Corridors, and Employment Centers proposed as priority settings in the Land Use Plan are all intended to provide increased concentrations of potential transit users and therefore the opportunity to expand the frequency of transit service.

As part of the Transportation Master Plan, Scranton-Abingtons Planning Association will coordinate with COLTS and potential providers of shuttle

Chapter Three: Growth Management Plan

TRANSPORTATION PLAN

and circulator services regarding the feasibility of providing more frequent transit service and connections to that service.

As part of the Transportation Master Plan, Scranton-Abingtons Planning Association will investigate the feasibility of a Scranton-to-the-*Abingtons* mass transit line, with either rubber-tired vehicles using exclusive on-road lanes or an off-road right-of-way or rail vehicles on a fixed guideway (tracks).

Chapter Three: Growth Management Plan

HOUSING PLAN

SECTION 3.4: HOUSING PLAN

GOAL:

Provide for a diversity of housing opportunities, in harmony with existing development and the historical and natural environments.

OBJECTIVES:

1. Facilitate a range of housing types, sizes, and price levels, to respond to changing housing needs and to provide housing for various stages of the life cycle, household configurations, and income levels.
2. Maintain the character of existing residential neighborhoods.
3. Ensure a high level of housing quality that includes environmentally sustainable building techniques, both for new construction and for the existing housing stock.
4. Develop policies that will encourage the creation of workforce housing within the SAPA area to allow individuals entering the work force to live in the communities where they work.

Mixed-Use Centers & Mixed-Use Corridors Housing

The Mixed-Use Centers located throughout the SAPA area represent significant opportunities to develop and redevelop properties for mixed uses, including residential components. Parcels in these areas are suitable for higher-density residential uses such as multi-family (apartment) and single-family attached (townhouse) units, and perhaps specialized residential uses such as life-care facilities. These areas may have prospects for new residential uses in place of current uses or may include new multiple-use (residential and commercial, for example) structures consistent with the special character intended for these parts of the SAPA area.

Chapter Three: Growth Management Plan

HOUSING PLAN

Demographic and other changes may mean that residential units in mixed-use developments can tap into an increasing need for housing structural types other than single-family detached units that meet the needs of residents entering the work force and those wishing to downsize their dwelling. Higher density residential construction in conjunction with commercial/mixed-use initiatives in the SAPA area may be able to respond to current and expected market demands over the planning period.

With a mix of commercial services, restaurants, and community functions, as well as advantages with respect to proximity to transportation and employment, these areas should be well-positioned to gain attractive, market-rate dwelling units at these locations, while also providing opportunities for the addition of smaller, moderately-priced units.

Scranton City Center and its Extension are considered the most appropriate for the highest densities of development, including multi-family residential buildings and the “vertical mix” of commercial and residential uses in structures. Borough Centers too are also appropriate locations for multi-family residential uses, but at more moderate densities, as well as for single-family attached dwellings. Multi-family residential units may also take the form of dwellings located just above a first floor retail or service commercial use, at overall densities that are compatible with the local context.

New development or redevelopment of these areas may provide opportunities for new or rehabilitated housing stock to be built using green building principles. The Scranton-Abingtons Planning Association will investigate ways to encourage environmentally-friendly housing construction.

Residential densities in Mixed-Use Centers in Scranton and Dunmore will be above 12 dwelling units per acre, and could range much higher. Mixed-Use Centers in Clarks Summit, Clarks Green, and Dalton and Mixed-Use Corridors will be closer to the 7 dwelling units per acre range.

Chapter Three: Growth Management Plan

HOUSING PLAN

Residential – Low/Moderate Density

Low/Moderate residential development, averaging from about 2 to 7 dwelling units per acre, corresponds generally with small-lot single-family detached dwelling units and single-family attached (twins and townhouses) developments in the SAPA area (see the Land Use Plan's Figure 3.2.1).

Areas appropriate for low/moderate-density housing include the core of the Abingtons' municipalities (outside the Borough and Village Centers), including portions of Abington, Clarks Green, Clarks Summit, Dalton, Glenburn, and South Abington. The housing plan recognizes that reinforcement of the residential areas within the SAPA area is a significant aspect of planning for residential use. Where there remain parcels available for development, these will be developed generally at densities comparable with existing housing, in a form that is compatible with the neighborhood or district character.

Existing low/moderate density residential areas are reasonably stable and are projected to remain much as they are through the planning period. Any development of several units simultaneously, or of a substantial tract, is proposed to incorporate corridors of contiguous open space as part of the land development process. This technique is recommended in order to protect environmentally-sensitive resources, provide lands for recreation, accommodate greenways along road corridors, and to allow for a trail network throughout the community.

Residential – Low Density

Low density development is located throughout the SAPA area and is characterized by existing single-family detached dwelling units located on large lots of one or more acres in size. This type of development is generally found in some of the more rural locations in the SAPA area and east of I-81 in Scranton and Dunmore.

New low density development will be highly clustered, using a development strategy commonly referred to as "conservation development" that concentrates the location for development and limits the disturbance of land for dwelling construction.

Chapter Three: Growth Management Plan

HOUSING PLAN

This method of development includes a high percentage of permanent open space and natural resource protection that occurs in conjunction with land development.

In general, cluster development reduces the amount of land consumed for residences when compared with conventional development methods, while at the same time preserving a portion of development tracts for permanent open space uses. This form of development design technique concentrates buildings in specific areas on a site to allow the remaining land to be used for agriculture, preservation of environmentally-sensitive areas, permanent buffers, open space, or recreational uses. Cluster development can involve only modest set-asides of land for these uses, or can involve set-asides of eighty percent or more of the whole tract being considered for development. From the point of view of the Growth Management Plan, the latter kind of development is preferred, since more permanent open space would result.

This concept will be promoted for any new subdivisions in areas designated for low density development, in order to conserve natural and open space resources. In addition, if there is any flexibility when considering what portion of a tract to reserve as open space, the emphasis will be placed on setting aside lands that are contiguous to or complementary to existing open space, environmentally-sensitive areas or other related amenities.

Cluster Subdivision/Conservation Design

While some opportunities for cluster subdivision have been available over the last few years in the SAPA area, additional incentives may be needed to achieve the goals of the Growth Management Plan. To preserve the remaining open space areas, cluster subdivision opportunities must be attractive to potential developers. All low-density residential zoning districts should offer clear opportunities for cluster subdivision.

One way to achieve increased set-asides of permanent open space is to combine cluster subdivision options in the regulations of a zoning ordinance with opportunities that permit developers of land flexibility in the selection of housing types to be constructed.

Chapter Three: Growth Management Plan

HOUSING PLAN

Density limits based on gross density (“units per acre”) classifications, rather than specific housing types and individual lot-size requirements (“no less than 80,000 square-foot lots”), will be more likely to achieve the desired level of permanent open space set-aside of tracts undergoing development.

In general, flexibility in permitting a variety of structural types of housing, and even encouraging single-family attached and multi-family construction in lieu of single-family detached dwellings, can help in meeting a wide variety of the needs of residents through the planning period while still preserving the existing character of the housing stock.

Fair Share and Affordability

The term “fair share” comes from legal decisions that have been made, beginning in the mid-1970s. Courts have held that local government land use regulations must allow for the housing needs of people who may desire to live within municipal borders. In that regard, an ordinance may not exclude legitimate uses of land, such as multi-family housing, either by specifically prohibiting the use or by failing to make provisions for the use. Each municipality, then, must do its “fair share” in accommodating various housing types that may be in demand in a region.

In addition to being a legal requirement, providing a fair share of housing types makes sense for local businesses that need a diversity of workers to meet their varied needs. A diverse workforce can be seen as a competitive advantage for corporations to remain or to locate within the SAPA area.

While the SAPA area as a whole currently maintains a diverse mix of housing types, it will continue to promote providing its fair share of housing types. The central concepts of the Growth Management Plan will provide opportunities to increase the diversity of housing options within the SAPA area. The higher density housing options allowed within Mixed-Use Centers and Mixed-Use Corridors make possible the provision for affordable housing in a way that new development confined solely to single family detached housing would not.

Chapter Three: Growth Management Plan

HOUSING PLAN

Still, high density housing options may not produce affordable units without concerted efforts by SAPA and housing advocates. Discussions by SAPA and municipal leaders with developers and non-profits may yield opportunities to build some affordable units as part of new developments. For example, integrating workforce housing within a multi-unit development is possible through choices in the square footage and the amenities within the unit, and can also be achieved without substantially changing the outward appearance of a unit, thereby allowing units of differing costs to be easily located near each other within a development. Developers could also be offered incentives such as an expedited review process, increased density allowances (the most common way to achieve workforce housing in PA), and even tax abatement for tenants.

In order to encourage housing options for people of all incomes, the SAPA area could convene a subcommittee task force to discuss best practices within Pennsylvania and throughout the nation in order to determine whether and how to implement policies that respond to the circumstances and needs of SAPA municipalities. The SAPA area may consider expanding that conversation to neighboring municipalities in order to consider the challenges and benefits at a larger scale and potentially learn from the best practices of others.

Resources and guidance are available, including an Urban Land Institute study of how to implement affordable, workforce housing in the Washington DC, Chicago, and Atlanta Regions. *Encouraging Workforce Housing in the Chicago Region, Atlanta and the District of Columbia* describes specific strategies to encourage affordable housing and provides examples intended to stimulate actions in other communities. A Pennsylvania example is Lower Merion Township, Montgomery County which provides incentives for workforce housing, and has real examples of applications that have succeeded or failed.

Chapter Three: Growth Management Plan

ENVIRONMENTAL PROTECTION PLAN

SECTION 3.5: ENVIRONMENTAL PROTECTION PLAN

GOAL:

Protect and enhance environmentally-sensitive areas of Scranton-Abingtons Planning Association municipalities.

OBJECTIVES:

1. Protect groundwater, floodplains, creeks, wetlands, mature woodlands and specimen trees, steep slopes, ridge lines, scenic viewsheds, wildlife habitat, and other environmental features of Scranton-Abingtons Planning Association.
2. Institute state-of-the-art stormwater management programs and ordinances that conform to the most current best management practices in light of the needs of the SAPA area.
3. Protect and enhance the natural resource amenities of properties that are being developed and redeveloped.
4. Determine appropriate areas for conservation and additional open space acquisition.
5. Identify primary viewsheds in the SAPA area for protection.

The Environmental Protection element of the Growth Management Plan identifies specific areas in the SAPA area that are environmentally sensitive, based on several sources: Scranton-Abingtons Planning Association member municipalities' designation of "hot spots" for flooding problems; The Federal Emergency Management Agency's 100-Year Floodplain designation prepared for the National Flood Insurance Program; the National Wetlands Inventory undertaken by the U.S. Fish and Wildlife Service and Pennsylvania Department of Environmental Resources (now Pennsylvania Department of Environmental Protection); the Soil Survey of Lackawanna County prepared by the U. S. Department of Agriculture Soil Conservation Service; United

Chapter Three: Growth Management Plan

ENVIRONMENTAL PROTECTION PLAN

States Geological Survey quadrangle series maps; and aerial photography. Areas that have been mapped include floodplains, wetlands, hydric soils, steep slopes, and woodlands.

These classes of environmentally-sensitive features are not uniform in their impact on development potential or in what they represent as hazards to human life and property. There are levels of sensitivity, suggesting corresponding levels of response.

Watersheds

Floodplains/Flood-Prone Soils

The first and most specific level is represented by the 100-year floodplain designated by the federal government. There is clear authority for a complete prohibition of structures, buildings and retaining walls within the designated floodplain, and a set of standards for regulating the design and construction of any development within the floodplain so as to prevent exacerbation of the flood hazard. Flood-prone soils, identified by the USDA Soil Conservation Service Soil Survey, at times do not correspond precisely with the federal floodplain designations. The flood-prone soils, so classified because of their alluvial nature, indicating that they were deposited by floodwaters, reflect not only 100-year floods but also floods of lesser frequency. Where flood-prone soils lie outside the federally-designated areas, the burden of proof will be on land developers to demonstrate that the generalized soil classification is in error for the specific site or that any construction will be designed to avoid any possibility of creating a hazard to human life and property or exacerbating local flooding; this can be achieved by specific on-site tests, engineering analysis, and analysis of effects of impervious cover percentages of upstream development that could alter flow levels. Thus, as a matter of policy, the flood-prone soils initially will be subject to all of the development restrictions of the land within the 100-year floodplain.

Chapter Three: Growth Management Plan

ENVIRONMENTAL PROTECTION PLAN

The Hydrologic Features map (Figure 2.6.1) is an important resource for the SAPA member municipalities. The information represented, particularly with respect to floodplains, is a strong determinant for land use planning as it identifies areas within the SAPA area that are at risk for flooding. In light of the recent and more frequent flooding events, Scranton-Abingtons Planning Association municipalities are more concerned that new development does not occur in floodplains or flood-prone areas unless specific special construction methods are employed. This includes the careful consideration of infill development. SAPA member municipalities will participate in and support watershed planning efforts that, among other goals, work to control flooding that begins or ends beyond the SAPA area boundaries.

Stormwater Management

As part of the SAPA planning effort, the study area's water resources were analyzed with a specific emphasis on stormwater management. Most municipalities reported numerous stormwater problems along the various water courses in the area (see Figure 2.6.5). These problems mainly include flooding, streambank erosion, groundwater problems, and water quality problems such as increased sediment loading. The cited stormwater problems were tabulated and mapped for each municipality. For each problem, a potential engineering solution has been identified. Due to the nature of the study, detailed assessments of each problem area were not prepared. Such an assessment would include a hydrologic and hydraulic study, cost-benefit analyses, and conceptual or final engineering designs.

In addition to the stormwater problem area study, stormwater management planning was conducted as part of this planning effort. A Model Stormwater Ordinance consistent with the Pennsylvania Department of Environmental Protection Model Ordinance (2007) was developed for the SAPA municipalities (See Appendix 1). All relevant ordinances for each municipality were reviewed for specific stormwater management criteria, as well as the Lackawanna River Act 167 Stormwater Management Plan. The SAPA municipalities included in the Lackawanna River Act 167 Plan were: Scranton City, Dunmore Borough, South Abington Township, Clarks Green Borough, Clarks Summit Borough, and a small part of Newton Township.

Chapter Three: Growth Management Plan

ENVIRONMENTAL PROTECTION PLAN

Although the Lackawanna River Act 167 Stormwater Management Plan was prepared in 1991, and in need of updating, certain criteria that are specific to the above identified municipalities were included in the Model Stormwater Ordinance, as well as stormwater management criteria from the existing municipality ordinances that are more appropriate than the DEP Model Ordinance criteria.

From the stormwater analysis conducted for this plan, the following contains recommendations for all municipalities and also specific recommendations related to their reported needs. The recommendations are as follows:

All Municipalities –

- Adopt the Model Stormwater Ordinance;
- Continue communication with the Lackawanna County Planning Department throughout the preparation of the countywide Act 167 Stormwater Management Plan.

Abington Township –

- Engage a consultant to conduct a hydrologic and hydraulic (H&H) study for the problems identified along Ackerly Creek. An H&H study will investigate the regional hydrologic conditions of the Ackerly Creek watershed, as well as the local hydraulic conditions of the stream itself. The study will isolate the cause of the problems in order to propose sound engineering recommendations.

Clarks Green Borough –

- Engage a consultant to investigate the source of flooding for the six identified flooding problems in the Borough. It appears that some of the flooding problems may actually be local drainage issues related to undersized culverts or stormwater inlets, and therefore, local drainage studies should be conducted. Undersized culverts or stormwater facilities fail to accommodate stormwater flows in storm events and cause water to back up along the waterway or on the road surface.

Chapter Three: Growth Management Plan

ENVIRONMENTAL PROTECTION PLAN

Clarks Summit Borough –

- Engage a consultant to conduct a hydraulic assessment of the streams experiencing erosion, and prepare conceptual designs for streambank stabilization. Clarks Summit Borough is within the Ackerly Creek watershed, and a hydrologic and hydraulic study for the watershed, or a local drainage study for those problems that stem from undersized stormwater facilities, would allow for the problems in the Borough to be investigated.

Dalton Borough –

- Engage a consultant to conduct a hydrologic and hydraulic study for the Ackerly Creek watershed, with an emphasis on problems identified as DAL001 and DAL005 that have multiple stormwater issues. It appears that some of the problems in the Borough arise from undersized stormwater facilities or undersized culverts, and local drainage studies should be conducted for these sites.

Dunmore Borough –

- Engage a consultant to investigate the source of flooding for the five identified flooding problems in the Borough. It appears that some of the flooding problems may actually be local drainage issues related to undersized culverts or stormwater inlets; however, specific causes of the problems are not clear. Therefore, the Roaring Brook and Meadow Brook watersheds should be studied, and local drainage studies may be conducted as part of the watershed assessments.

Glenburn Township –

- Engage a consultant to conduct a hydrologic and hydraulic study for the problem identified as GLE001 along Ackerly Creek. Also, it is recommended that a local drainage study be conducted for GLE002 and conduct a hydraulic assessment for GLE003 to investigate the sources of erosion. Temporary erosion control measures such as gabions may be implemented at the sites in the interim.

Chapter Three: Growth Management Plan

ENVIRONMENTAL PROTECTION PLAN

Newton Township –

- The Township reported problems for significant lengths of stream reaches along Buttermilk Creek, Falls Creek, and Gardner Creek, indicating poor hydraulic conditions (debris blockages, sedimentation, decreased flood flow capacity, streambank erosion, etc.) for the identified streams. Engage a consultant to conduct hydrologic and hydraulic assessments of these streams and watersheds.

North Abington Township –

- The points identified as NAB001, NAB007, and NAB006 have six, four, and three total stormwater problems, respectively. Engage a consultant to conduct hydrologic and hydraulic assessments of these three top priority sites. Most of the problems identified in the Township are in the South Branch Tunkhannock Creek watershed, and a hydrologic and hydraulic study of this watershed is recommended.

Scranton City –

- Scranton City has a wide array of stormwater problems ranging from inadequate past practices to aging infrastructure. As an urban area that has been developed for many years stream enclosures exist through entire city blocks. Older neighborhoods such as East Mountain were built without adequate stormwater planning or infrastructure. The city is working constantly to add stormwater management facilities to address past practices and is not limited by need but by funding. Many areas of the City are served by Combination Sanitary/Storm Sewers leading to significant problems associated with combined sewer outfall (CSO) discharge throughout the City.

Constant maintenance and preservation of the flood control projects is required and implementation of additional regulations would help preserve their capacity. The Lackawanna River has caused major flooding in its designated floodplains in the past. With the help of the Army Corps of Engineers, levees recently finished and being constructed will help tremendously in these areas. Residual flooding will continue to be a problem in some areas protected by the levees

Chapter Three: Growth Management Plan

ENVIRONMENTAL PROTECTION PLAN

and may require pump stations to lessen their impacts. The tributaries that flow through the city into the Lackawanna River (Roaring Brook, Stafford Meadow Brook, Meadow Brook, Leggetts Creek, Keyser Creek, Lindy Creek and Lucky Run) all have proven to flood at various times, causing damage to homes and infrastructure along with severe bank erosion. Leech Creek is currently routed through what appears to be a railroad tunnel and requires a major construction project.

Scranton City should continue to work with the Environmental Protection Agency to reduce CSO discharges. Continue with ongoing flood mitigation projects. Engage a consultant to conduct hydrologic and hydraulic assessment of the West Mountain/Keyser Valley area. Seek funding for an improved urban stormwater management system.

South Abington Township –

- Engage a consultant to conduct hydrologic and hydraulic assessments for Leggetts Creek and Summit Lake Creek where three stormwater problem areas have been identified. As part of the watershed studies, environmental assessments should also be performed to identify the causes of the water quality problems in the Township.

West Abington Township –

- Two problem areas, WAB001 and WAB002, cite multiple stormwater problems along tributaries of the South Branch Tunkhannock Creek. Engage a consultant to conduct hydrologic and hydraulic assessments for these problem areas. Further investigate the sources of flooding for the remainder of the problem areas in the Township, which appear to consist of local drainage issues, and conduct local drainage studies at these locations. Specific types of stormwater problems are not cited for those in the Beaver Creek watershed, and a hydrologic and hydraulic study of this watershed is recommended.

Chapter Three: Growth Management Plan

ENVIRONMENTAL PROTECTION PLAN

Multiple municipalities reported problems along Ackerly Creek, or reported problems in the Ackerly Creek watershed. The same holds true for municipalities in the South Branch Tunkhannock Creek watershed, of which the Ackerly Creek is a part. Therefore, a watershed study for South Branch Tunkhannock Creek watershed, including the Ackerly Creek, would investigate all of the problems in the watershed for the multiple municipalities. The following municipalities would be included in the study: Abington Township, Clarks Summit Borough, Dalton Borough, Glenburn Township, North Abington Township, and West Abington Township.

Stormwater management and flood and erosion control will be important for all of the SAPA area's watersheds, especially the major ones such as the South Branch Tunkhannock Creek, Lackawanna River and Susquehanna River watersheds. These are closely linked to upstream land development and stormwater management policies and practices. It is essential that local regulations promulgated in SAPA member municipalities and in all surrounding municipalities be based on watershed-wide considerations.

Close inter-municipal and county cooperation on all stormwater management issues will be needed over the planning period. Watershed Act 167 Stormwater Management Plans and similar studies examine potential effects of land development upon discharge rates into waterways, and have led to local development regulations to assure that developments use the best available technology to minimize off-site stormwater runoff, increase on-site infiltration, minimize off-site discharge of pollutants, and encourage natural filtration functions.

Best management practices ("BMPs") for stormwater management control may include measures such as detention and retention basins, recharge trenches, porous paving and piping, contour terraces, and swales. All stormwater retention, detention, and other stormwater management facilities should be designed to include and provide stormwater recharge in conjunction with other BMPs. SAPA member municipalities will develop and publicize a set of stormwater best management practices for their residents.

Chapter Three: Growth Management Plan

ENVIRONMENTAL PROTECTION PLAN

Detention & Retention Basins

Stormwater detention and retention basins have been regarded for some time as the standard for dealing with stormwater runoff from tracts undergoing development, but are now coming under scrutiny. Basins occupy space that might be better used for something else, and basins often discharge directly into creeks, precluding opportunities for on-site groundwater recharge.

In addition, the basins created over the last three decades in the SAPA area are privately owned and may not be adequately maintained. Without proper maintenance, these systems do not work as designed, and flooding may occur. Standing water in basins can also provide an ideal setting for mosquito breeding and may represent a safety risk for children.

Detention basins, however, can be designed or retrofitted with environmentally sound stormwater management functions such as extended flow paths, wetlands, sediment forebays, bioretention pools, and many others. These features, when applied to a standard basin design, can create a stormwater management facility that functions to control both stormwater runoff volume and water quality.

Other innovative stormwater management technologies are emerging. For example, in lieu of basins, porous underground pipe systems may be installed. These promote on-site groundwater recharge, save surface areas for more-useful purposes, and represent less of a hazard than basins. All future stormwater management systems will include a plan for regular maintenance and periodic municipal inspections.

In addition to basins, design features such as narrower local roadways and enhanced buffers and landscaping are also critical means toward the goal of reducing the amount of stormwater runoff. Retention of existing trees and woodlands is similarly effective.

Chapter Three: Growth Management Plan

ENVIRONMENTAL PROTECTION PLAN

Wetlands

A second level of environmental sensitivity is represented by wetlands; generally areas with a high water table, poorly draining soils, and having some degree of surface ponding during the year. Under the jurisdiction of the U.S. Army Corps of Engineers and the Pennsylvania Department of Environmental Protection, there is at the present time a steadily evolving regulatory framework concerning wetlands in Pennsylvania, mandating wetland surveys by developers of land and controlling the degree and type of wetland disturbance permitted.

SAPA will seek opportunities for providing long-term wetlands protection by directing development away from these areas, by encouraging cluster subdivision on higher ground surrounding wetlands, and preserving open space containing wetlands that are important to protecting local floodplains or ecological systems.

Riparian Buffers

One of the chief ways in which a water course's quality may be affirmed or improved is through the maintenance of riparian buffers. A riparian buffer is a corridor of varying width adjacent and generally parallel to a creek or similar water course, extending for some distance back from the creek bank. Ideally, the buffer is wooded, shading and cooling the water, trapping nutrients and sediment runoff, stabilizing creek banks, and providing food and cover for aquatic and terrestrial wildlife.

The characteristic combination of a floodplain with a creek and the frequent association of environmentally-sensitive areas such as wetlands and steeply-sloped terrain, in addition to woodlands, can begin to define a specific dimensional width to a riparian buffer. SAPA member municipalities will work with the Lackawanna River Corridor Association, the Susquehanna River Basin Commission, and other appropriate agencies to draft zoning and subdivision and land development ordinance amendments that improve the protection of the SAPA area's water resources. Included in the ordinance

Chapter Three: Growth Management Plan

ENVIRONMENTAL PROTECTION PLAN

amendments will be a Riparian Corridor Overlay District that enables the SAPA member municipalities to reduce the impact of land development on water resources by limiting uses permitted near the stream. In the ordinance amendment, the topics of limiting the impervious coverage in certain residential districts will be reviewed as well as the standards for steep slope protection.

To improve upon creeks listed as High Quality Cold Water Fisheries (HQ-CWF) in the PA Code Chapter 93 such as Leggett's Creek and Roaring Brook Creek, wherever possible the creek and its tributaries should have woodlands alongside. Scranton-Abingtons Planning Association will encourage planting of new vegetation to create appropriate and diverse plantings along creeks to promote watershed protection. Future SAPA area watershed studies may seek funding in part through the Pennsylvania Department of Environmental Protection's Growing Greener initiative. Scranton-Abingtons Planning Association will identify its priorities and where its member municipalities may work together, and apply for additional funding through state or other sources to continue this important work.

Aquifer Recharge Protection

Portions of the SAPA area are served by the central water distribution system, but for some individual properties within the area, local groundwater is the direct source for drinking water for residential units and businesses. The principle of groundwater recharge is important, since many residential units and some businesses obtain drinking water from on-site wells.

The aquifer that underlies the SAPA area feeds springs that supply area creeks. The SAPA area municipalities should take steps to protect groundwater. A model document may be the Chester County Water Resources Authority's *Watersheds* plan completed in 2002 to provide guidance to municipalities in the conservation of natural resources associated with watersheds, including groundwater protection. This guidance can also be used by SAPA member municipalities to implement recommendations that will help plan for groundwater protection over the next ten-to-twenty

Chapter Three: Growth Management Plan

ENVIRONMENTAL PROTECTION PLAN

years. Furthermore, the Model Stormwater Management Ordinance prepared for the SAPA municipalities as part of this Plan (see Appendices 1 and 2) requires that the first 1.0 inches of runoff (termed first flush or water quality volume) be infiltrated for all new and re-development sites. This practice ensures that suitable groundwater recharge occurs when impervious cover is created.

The Land Use Plan reveals a substantial proportion of the SAPA area intended for Agriculture, Open Space and Limited, Very Low Density Residential uses that can act as an extensive aquifer recharge area and assure a permanent framework for groundwater recharge even as development may proceed into the future. SAPA member municipalities will employ this framework for groundwater recharge and the protection of groundwater quality. A key technique is the adoption of appropriate land use regulations, including those that would achieve the following objectives:

- Maintain an overall low density of development through large portions of the community;
- Provide incentives for clustered residential development;
- Conserve woodlands; and
- Ensure the use of “BMP”/stormwater management measures, outlined previously.

Chapter Three: Growth Management Plan

ENVIRONMENTAL PROTECTION PLAN

Resource Conservation

The Resource Conservation designation as shown on the Land Use Plan is an overlay that can be found throughout the SAPA area, regardless of the underlying land use. The resource conservation overlay is comprised of the following elements:

- Rural wooded areas;
- Buffers along all surface water features (ponds, lakes, waterways), and wetlands;
- Floodplains;
- Steep slopes.

The intent of the overlay is to provide recommendations for policies that protect natural features. These features, especially when occurring in combination, suggest that little or no development should take place in these areas or that development should be severely curtailed and closely regulated. North Abington Township has chosen not to include the resource conservation overlay in its low density residential (light yellow) areas on the Land Use Plan map.

The policy of the SAPA member municipalities toward environmentally-sensitive areas will be one of discouraging development wherever possible to prevent destruction of important resources or to protect residents of the SAPA area from future problems.

Focusing development in the Mixed-Use Centers, Mixed-Use Corridors, and Employment Centers will concentrate the majority of new development in designated areas away from environmentally-sensitive portions of the SAPA area.

Chapter Three: Growth Management Plan

ENVIRONMENTAL PROTECTION PLAN

Natural Gas Wells

Parts of the SAPA area have since 2006 become involved in a ‘rush’ to lease rights for natural gas exploration in the Marcellus Shale, a gas-containing formation at 5,000 to 8,000 foot depth that was not considered economically exploitable before recent developments in extraction technology and increases in natural gas prices.

Development of the Marcellus Shale potential may be a source of economic growth and job creation in Northeastern Pennsylvania, including the SAPA area, although recent declines in natural gas prices have cooled the interest of drillers. However, the development of wells, access roads, and pipelines must be recognized as presenting potential future problems for the SAPA area in the form of temporary or permanent disturbance to wetlands, forests, and other landscape features, and effects on water wells are also possible. These problems, or any other problems that may occur, must be mitigated.

Natural gas extraction is regulated by state and river basin commission authorities. At the time of this writing, municipal governments have very limited power regarding regulation of gas well siting, wastewater disposal, or other aspects of natural gas development, but this is an evolving area of law being dealt with through new regulations, and current court cases. Municipal governments do have the power to bond companies to repair damage to roads caused by natural gas-associated vehicular traffic. The costs and benefits of natural gas development are difficult to gauge at this time, but should be closely monitored by SAPA municipalities.

Ridgeline and Scenic Views

The existing landscape of the SAPA area, both natural and man-made, defines to a large extent what the area is to many people. As development occurs, this landscape will inevitably change. However, the extent to which it changes and how it changes can be guided by how structures are permitted to be placed. For example, a scenic view of a wooded hillside will be less

Chapter Three: Growth Management Plan

ENVIRONMENTAL PROTECTION PLAN

affected if new structures are placed below the ridgeline of the hill so that the top of the ridge is maintained in its natural state. Similarly, a scenic view of a long meadow from a roadway will be less affected if structures are set back from the roadway such that a good portion of the long view is preserved.

To help protect ridgelines and scenic views, SAPA municipalities will prepare surveys and adopt inventories of identified scenic views as amendments to the SAPA Plan and/or local comprehensive plans. Once these inventories are in place, they may be used by municipal planning commissions and officials in the evaluation of prospective land development applications. SAPA municipalities will then consider adding requirements to development regulations, such as zoning and/or subdivision and land development codes that would require compliance with new view protection provisions of those codes.

Chapter Three: Growth Management Plan
ENVIRONMENTAL PROTECTION PLAN

Chapter Three: Growth Management Plan

HISTORIC PRESERVATION PLAN

SECTION 3.6: HISTORIC PRESERVATION PLAN

GOAL:

Protect and enhance historically- and culturally-significant areas and features of SAPA member municipalities.

OBJECTIVES:

1. Preserve and enhance the significant historic, archaeological, and cultural resources of the SAPA area.
2. Develop processes and programs that will advance the preservation of the character and integrity of historic and cultural resources.
3. Reinforce the context and character of historic sites, road corridors, and landscapes.
4. Raise public awareness of the SAPA area's rich historical legacy.

The lands that, in total, make up the Scranton-Abingtons Planning Association have changed dramatically over time, but many historic buildings and much historic landscape remain. The Growth Management Plan strongly endorses preservation of the area's historic character and resources as it continues to evolve.

Historic preservation is a vital economic development strategy for the Growth Management Plan. Not only does it support tourism, Pennsylvania's second largest industry, but it supplies the key element of distinctiveness to designated Mixed-Use Centers and Mixed-Use Corridors, the centerpieces of the Land Use Plan.

Chapter Three: Growth Management Plan

HISTORIC PRESERVATION PLAN

The successful marketing of these areas to investors, homeowners, visitors, business operators, and shoppers will depend on these groups and individuals understanding that these areas have special qualities, not replicated elsewhere, translating into strong visual appeal, a high quality of life, and unique economic opportunities. These Centers and Corridors will incorporate and rely on their combination of existing buildings and adaptively-reused structures to fashion their image in the marketplace.

Development and redevelopment will continue to occur over the planning period. The SAPA area will find an appropriate balance between encouraging change and the ensuring preservation of significant historic resources. Reaching that balance is a process that begins with the recognition of the preservation issues that must be addressed to ensure that the area's resource protection goals and objectives are realized.

Preservation Planning Guidelines

The following preservation planning guidelines for the SAPA area provide a foundation for the more specific recommendations found later in this section. These guidelines should be applied as decisions are made regarding preservation, land development, public improvements, roadway construction, and utilities installations.

Use change as a vehicle for preserving community character.

The SAPA area will use ongoing change to preserve and enhance community character, including historic building and landscape resources. Resource surveys, design guidelines, and plans will identify significant character-defining resources, preservation and design objectives for those resources, and specific preservation actions that will be taken.

Build upon existing preservation initiatives to support future projects.

SAPA municipalities and many of their residents and community organizations have taken important strides in preserving the SAPA area's historic resources. The SAPA area will build upon these initiatives to create

Chapter Three: Growth Management Plan

HISTORIC PRESERVATION PLAN

momentum and interest in future preservation projects. Specific recommendations for this stream of activity are included below. Such actions should not be viewed in isolation, but comprise a coordinated program to achieve comprehensive preservation goals.

Preserve and enhance historic landscapes and landscape character.

Historic landscapes have been increasingly recognized as a key to preserving community character. Buildings are an important element of the historic landscape, although not necessarily the only element, and the landscape context in which a historic building or human activity occurs is significant.

In applying the recommendations of the historic preservation plan, the SAPA area will look holistically at the community's historic landscapes. Significant character-defining features of the historic landscape will be identified, preserved, and sensitively treated.

Build consensus among residents, local agencies, and organizations.

SAPA municipalities will collaborate with property owners; local, regional, and state organizations and agencies; and land developers to identify specific community preservation interests and to ensure that multiple options are considered when future decisions are made. This will be an inclusive process that seeks to recognize, inform, and involve all interested parties and to build consensus around goals and solutions.

Educate community about importance of preservation in the SAPA area.

SAPA will strengthen its preservation efforts by educating the public and rallying its support. Through education, knowledge about the SAPA area's history will be encouraged and broad-based community support for preservation developed. The SAPA area will collaborate with a broad range of individuals and organizations to implement a community-wide preservation education program.

Chapter Three: Growth Management Plan

HISTORIC PRESERVATION PLAN

Continually review and update plans and ordinances to address the preservation of community character. Over time, preservation, open space, land development, and zoning policies and ordinances can become out of date. The SAPA area will continually assess and update its planning policies and procedures to maintain a state-of-the-art commitment to planning in the community interest and take advantage of all preservation opportunities.

Local Preservation Policy

Establish Historical Commissions

SAPA municipalities will establish Historical Commission(s). Historical Commissions are different from the Historic Architectural Review Boards (HARB) that exist for the Waverly Community and Scranton. HARBs address design review for proposed changes to historic buildings within a local historic district. Historical Commissions address preservation issues that are community-wide, lead inventory and resource documentation initiatives, provide education and interpretation for the community, and review applications for subdivision and land development for impacts on historic resources both on the property being developed and on adjacent properties. HARBs and Historical Commissions are complementary, and their areas of responsibility are distinctly different.

A Historical Commission is a vital part of the SAPA member municipalities' development application review process. The Historical Commission will be responsible for:

- Continued survey of historic and archaeological resources;
- Review of subdivision and land development applications;
- Education;
- Promotion of historic preservation;
- Grant applications;
- Initiation of National Register nominations; and
- Advising the local government on historic preservation policies.

Chapter Three: Growth Management Plan

HISTORIC PRESERVATION PLAN

Municipalities may also wish to investigate becoming “Certified Local Governments” via the PHMC’s program. In addition to raising an overall consciousness about preservation, it provides bonus points when applying to PHMC for preservation grants.

Conduct Historic Resources Surveys

A high priority task for SAPA member municipalities is completion of inventories of historic resources. The inventories should use any existing inventories as a point of departure. The new inventories should include:

- Overview of municipal history;
- Review of common themes that tie the historic resources together;
- Assessment of individual resources and of the resources as a whole;
- Preparation and filing of Pennsylvania Historical and Museum Commission (PHMC) Historic Resource Survey forms;
- Mapping of historic resources and correlation of resources with lot numbers;
- Outline of municipal and SAPA historic preservation goals, programs, and tools; and
- Bibliography.

Once the municipality has its resources inventoried and mapped, these maps/databases may be included as amendments to the SAPA

Comprehensive Plan and used in the day-to-day workings of municipalities, particularly in the review of subdivision and land development applications. Survey information should also be submitted to PHMC and the National Park Service for inclusion in the National Register of Historic Places database.

Municipalities, Historical Commissions, and local non-profit groups may work with the Lackawanna Historical Society and/or the Lackawanna Heritage Valley Authority (LHVA) regarding inventories. Typically, LHVA does not assist directly with the submission of Historic Resource Surveys or National Register nominations beyond encouraging individuals and organizations to pursue them.

Chapter Three: Growth Management Plan

HISTORIC PRESERVATION PLAN

However, LHVA does undertake surveys of area resources and would entertain applications for assistance (matching grants) from local non-profit groups and municipalities to hire qualified consultants to prepare nominations.

Create Historic Resource Protection Overlay Zoning Districts

Each municipality will enact a historic resources overlay zoning ordinance. Historic resources overlay zoning involves the identification and mapping of scattered resources throughout a community (identified through the survey process described above). Historic resources overlay zoning protects the character of the resources by regulating the subdivision and land development review process. It clearly communicates to developers the desire of the community to preserve historic resources, and it identifies those resources. Historic resources overlay zoning requires a developer to assess the impact of a proposed subdivision or land development plan upon the historic resources on the tract being developed as well as upon adjacent affected tracts. Mitigation of the impact is required and/or negotiated through the exploration of design alternatives, buffering, landscaping, design standards, and other appropriate measures. Lot sizes and configurations as well as the design and location of improvements are controlled to preserve the integrity of the historic resources and their context. Demolition of historic resources or impairment of landscape resources can be delayed by the ordinance to allow for acceptable alternatives to be negotiated. Sensitive adaptive reuse of historic resources is encouraged through the provision of special “use alternatives” not normally permitted in the underlying zoning district.

As part of the revision of development regulations that will follow adoption of the SAPA Comprehensive Plan, municipalities will adopt overlay zoning districts for their respective communities. The designated resources will be identified through the Historic Resources Surveys.

Create Design Controls and Guidelines

The creation of design guidelines for the preservation of historic resources would be valuable in communicating to developers both the vision and the

Chapter Three: Growth Management Plan

HISTORIC PRESERVATION PLAN

technical means of achieving preservation goals. It should be clear that the preservation of historic resources means not only the preservation of historic buildings, but the preservation of the contexts that are integral to the historical significance of those buildings.

The municipal Historical Commissions (or other bodies charged with historical review) should establish design guidelines for the historic resources overlay ordinance. Developers should be required to submit sketch plans for review that demonstrate how proposed development complies with design guideline requirements.

Historic preservation design guidelines are particularly important for Mixed-Use Centers and Mixed-Use Corridors. Design guidelines will address the preservation of historic buildings and their features, appropriate treatment of historic building fabric, landscaping, site considerations and setbacks. Guidelines for incorporating new construction sensitively into a historical context should be created to ensure that new construction is compatible and appropriate.

Implement Incentive Programs for Property Owners, Neighborhoods, and Centers
The SAPA area will consider creating incentive programs to encourage and assist residents and property owners in preserving and appropriately treating historic buildings, resources, and neighborhoods. Incentive programs might include creation of a revolving loan program, façade improvement program, Main Street program, grant program, transferable development rights program, or technical assistance program.

Community Character

The main goal of this Historic Preservation Plan is to identify ways to preserve the historic character of the SAPA area. SAPA will make the preservation of historic resources and community character a priority over the planning period. Historic resources in the SAPA area have been lost over time to development and neglect. Moving forward, the SAPA will focus on the preservation and enhancement of its historic community character.

Chapter Three: Growth Management Plan

HISTORIC PRESERVATION PLAN

The preservation of open space is important to protecting historic resources and community character. SAPA will partner with open space organizations in the planning and implementation of its open space initiatives. Creative combinations of national, state, regional, local, and private funding will be sought to purchase conservation easements, development rights, and land. In revising the SAPA area's zoning ordinances, new open space requirements will be developed that preserve substantial portions of a newly developed tract as open space.

Outreach and Education

Outreach and education will be a primary objective for SAPA. Knowledge of the history and significance of area resources will help promote awareness and interest, and may influence local residents to support preservation of historical resources. Educational programs will reach out to the entire community.

Local historic societies and newly established Historical Commissions and HARBs will present educational programs to a wide variety of community audiences in order to raise awareness and appreciation for local historic resources. In conjunction with the education programs, the SAPA area and partnering organizations will host events that highlight SAPA area history and historic resources.

The installation of plaques or markers at the locations of historic resources is an interpretative technique that can make some of the history of a community tangible to both residents and visitors. As has been the case in other communities, such as Newtown Township, Delaware County, markers have been put in place that are visible from streets and other public places and are physically of sufficient size to support text and other elements to help explain the nature of the resource and its significance. The inclusion of these kinds of plaques along trails would reinforce it as a community resource for recreation, as well as contributing toward an understanding of the area's heritage.

Chapter Three: Growth Management Plan

HISTORIC PRESERVATION PLAN

A grant program to initiate plaque placement by making funds available to individual property owners to pay for one-half of an installation should be pursued with PHMC and/or private foundations.

Self-guided tour brochures would complement the markers, placing them in the context of a circuit (or several smaller circuits) of local historic sites, containing further information on resources themselves, and providing additional information on the municipalities and their history.

Chapter Three: Growth Management Plan
HISTORIC PRESERVATION PLAN

Chapter Three: Growth Management Plan

PARKS, RECREATION AND OPEN SPACE PLAN

SECTION 3.7: PARKS, RECREATION AND OPEN SPACE PLAN

OBJECTIVES:

1. Provide an adequate supply and mix of accessible parks, playgrounds, and other recreation facilities, both active and passive, to serve the existing and projected population of Scranton-Abingtons Planning Association.
2. Support the acquisition of open space resources within the SAPA area.
3. Promote prospective development that will result in the creation of substantial acreage of permanent and contiguous open space and significant publicly accessible areas.
4. Promote economic initiatives that provide markets for local agricultural producers, outdoor recreation opportunities, and tourist amenities.

The Scranton-Abingtons Planning Association Comprehensive Plan supports the *Open Space, Greenways & Outdoor Master Plan (2004)* that was developed by Lackawanna and Luzerne Counties. It is the SAPA area's intent to maintain existing community recreational facilities for their use and enjoyment by area residents and, as required, to develop these facilities further to keep them up-to-date and appropriate for the needs and interests represented in the population. In addition, over the planning period, the SAPA area will provide new accessible parks, playground, and other recreation facilities, both active and passive, to serve the existing and projected population.

In order to appropriately assess the needs of the SAPA area, this Plan recommends that SAPA develop a Park, Recreation and Open Space Master (PROS) Plan. The PROS Plan can build upon the inventories and policies of the BiCounty *Open Space, Greenways & Outdoor Recreation Master Plan* and

Chapter Three: Growth Management Plan

PARKS, RECREATION AND OPEN SPACE PLAN

this SAPA Comprehensive Plan to develop a specific, targeted plan that will help provide for the future needs of the SAPA area. SAPA should seek funding assistance from the Pennsylvania Department of Conservation and Natural Resources in the preparation of a PROS Plan.

Park and Recreation Facilities

A PROS plan will provide the detailed analysis necessary to determine exactly what areas are well served or underserved by different types of parks and recreational facilities. However, based on the recommendations of the Land Use Plan, certain types of open space and parks will be needed in those locations identified for concentrations of residents and employees over the planning period.

Mixed-Use Centers and some of the more downtown-like parts of Mixed-Use Corridors are appropriate locations for civic squares, pocket parks, and local green spaces. Developing them will provide needed open and/or green space in highly-developed locations and provide opportunities for residents, employees, shoppers, and transit users to enjoy greenery in close proximity to residences, offices, stores, and transit stops as the station areas will incorporate both retail/commercial activities as well as residential uses. These civic spaces and small parks will also provide connections to nearby parks, greenways, and trails making travel between them feasible and convenient.

Urban Neighborhoods and Employment Centers are also appropriate places for creation of additional park/open space amenities such as those described and will provide the same opportunities as offered at the Mixed-Use Centers.

Trails

A PROS plan will describe the suitability of various paths and sidewalks throughout the SAPA area as part of a trail network connecting the parks and recreation facilities to each other and to other areas of the community.

Chapter Three: Growth Management Plan

PARKS, RECREATION AND OPEN SPACE PLAN

Two particularly important trails planned for SAPA area include the Countryside Conservancy Trolley Trail in the *Abingtons*, north of “The Notch”, and the Lackawanna River Heritage Trail that runs through Scranton. The PROS plan should examine the feasibility of connecting the two trails.

Scranton-Abingtons Planning Association is a critical partner in the planning, advocacy and, potentially, the construction of these trails. SAPA member municipalities will continue to support and advocate for the realization of these trails and implement what can be done at the SAPA level. These trails will be an important part of supporting the Comprehensive Plan’s goal of connecting recreational facilities to residential, commercial, institutional, and mixed-use areas and to form a system for non-vehicular circulation within and between SAPA member municipalities. Additional trail and path opportunities will be identified throughout the development of the PROS plan.

Open Space

As part of the SAPA PROS plan, a thorough analysis should be conducted of the opportunities for passive open space that can be retained for natural resource conservation. An initial focus should be the areas designated on the Land Use Plan as Agriculture, Open Space and Limited, Very Low Density Residential. In this regard, it is important to note that Lackawanna County’s Agricultural Preservation Board has purchased the easements for and conserved over 3,660 acres of prime and locally important agricultural land countywide and 320 acres in the SAPA area.

In addition, opportunities should be sought for increasing open space within more urbanized areas. Increasing green space within these areas can provide the space necessary for a break from urban activity and also offers an opportunity for stormwater infiltration.

Chapter Three: Growth Management Plan

PARKS, RECREATION AND OPEN SPACE PLAN

Fee-in-lieu Provisions

All SAPA member municipalities should review their Subdivision and Land Development Ordinances for their requirements with regards to the dedication of land for park, recreation, and open space use in conjunction with new residential developments. In any case where this clause is missing, it should be inserted to provide the maximum opportunity to create open areas for active and passive use.

In addition, municipalities should review their ordinances for a “fee-in-lieu” provision, whereby developers of land may be required to pay a fee to the municipality to provide for park, recreation, and open space uses instead of the developer dedicating land. Funds can then accrue for the purchase of sites for recreational purposes or easements for recreational use through these mandatory fee-in-lieu provisions. (As enabled by the Pennsylvania Municipalities Planning Code, municipalities may require developers to either contribute land for recreational purposes or pay a fee representing the proportionate costs of a municipality to provide recreation facilities and/or improvements.) In some cases “fee-in-lieu” provisions may be missing from the subdivision regulations or they may only apply to large subdivisions.

During the planning period, fee-in-lieu provisions may prove just as important as mandatory dedications of land. Over the next twenty years, while some new development may take the form of large-scale subdivisions, SAPA member municipalities should also expect construction on smaller sites and the redevelopment of parcels. Gaining fees toward park, recreation, and open space use may be as beneficial to Scranton-Abingtons Planning Association as pieces of land. In addition, prospective development over the planning period will be commercial or mixed-use. Most land dedication provisions of Subdivision and Land Development Ordinances do not apply to non-residential development. Fee-in-lieu provisions are flexible in concept, however, and should be made applicable to both residential and non-residential development and for smaller developments.

Chapter Three: Growth Management Plan

PARKS, RECREATION AND OPEN SPACE PLAN

In general, the utility of the land development process to gain usable open space for the community as a whole should be recognized. The cluster form of residential development has several potential public benefits, including making land available for community park and recreation purposes. Creation of permanent open space lands through the land development process and, in some instances, the dedication of such lands to SAPA member municipalities, may be the most efficient and cost-effective means of gaining additional community parkland.

Land Acquisition

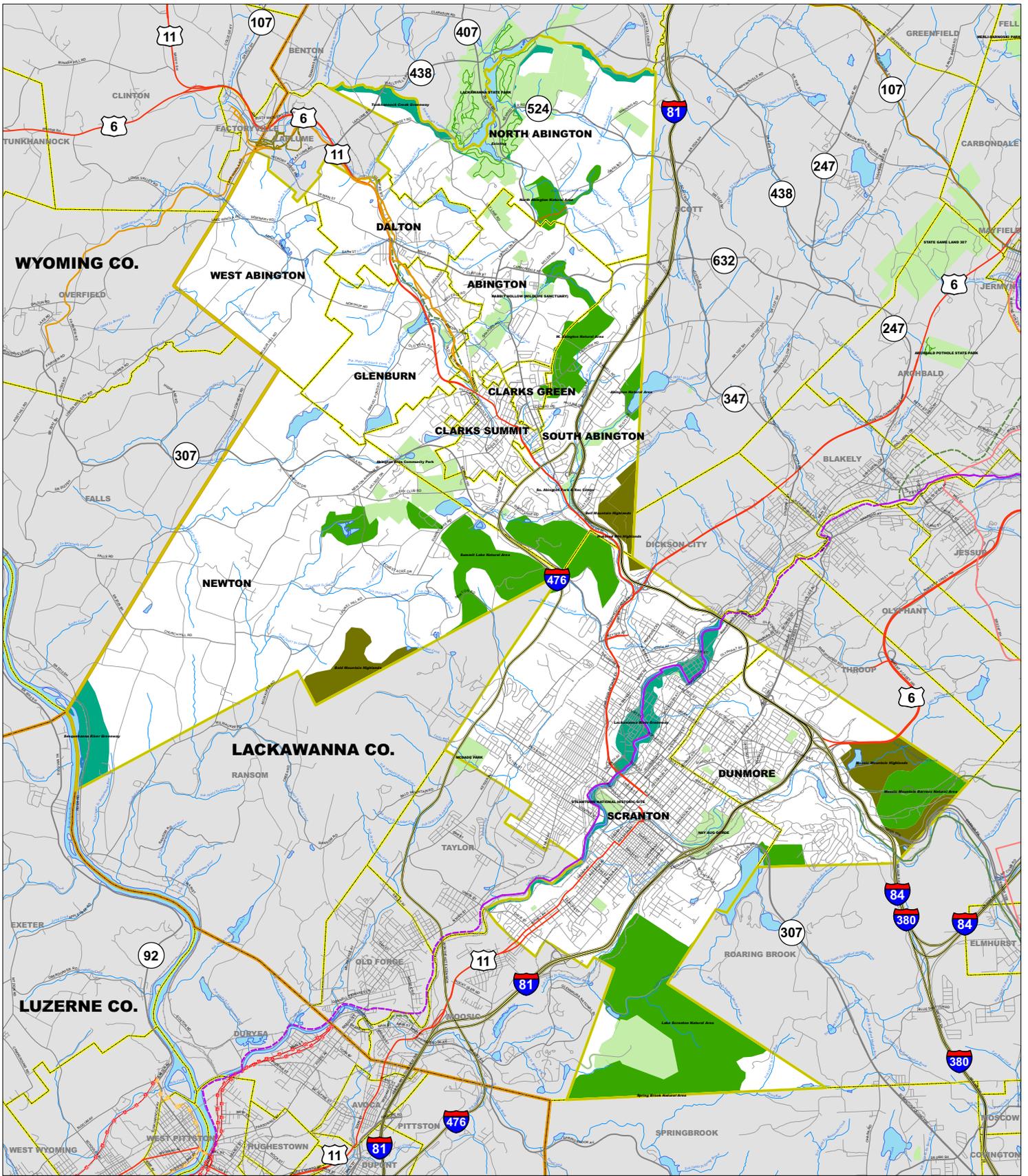
Large parcels of land are not required to add civic or private open space. The Land Use Plan promotes a network of interconnected open space areas. SAPA should consider using a number of means for preserving open space, including the following:

1. Outright purchase by a municipality or multi-municipal consortium, or county, or by a private, not-for-profit organization among whose purpose is the conservation of open space land and/or operation of park and recreation facilities;
2. Dedication of property to a municipality through the land development process;
3. Acquisition of an easement for open space and/or park and recreation uses by a municipality or multi-municipal consortium or county or by a private, not-for-profit organization; or
4. Donation of property or easement to a municipality or county or to a private, not-for-profit organization.

Chapter Three: Growth Management Plan

PARKS, RECREATION AND OPEN SPACE PLAN

The SAPA area is fortunate to have substantial remaining open lands. The challenge for the planning period ahead is to determine which lands and resources to make the highest priorities to conserve and preserve and to proceed to implement programs for conservation and preservation in a fiscally responsible manner.

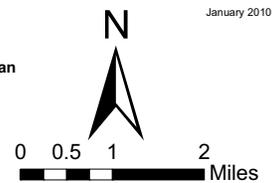


Scranton-Abingtons Planning Association

Comprehensive Plan

**FIGURE 3.7.1
PARKS, RECREATION
AND OPEN SPACE**

- | | | |
|--|----------------------------------|---|
| — Keystone College Trail | — Westside Bike Trail (Current) | Bi-County Proposed Open Space Plan |
| — Trolley Trail | — Westside Bike Trail (Proposed) | Existing |
| Lackawanna River Heritage Trail | — Route L | Greenways |
| — Existing Trail | — Route Y | High Lands |
| — Proposed Trail | — State Park Trails | Natural Areas |
| Other Area Trails | | |
| — Existing Trail | | |
| — Proposed Trail | | |



January 2010

Chapter Three: Growth Management Plan
PARKS, RECREATION AND OPEN SPACE PLAN

Chapter Three: Growth Management Plan

COMMUNITY FACILITIES & UTILITIES PLAN

SECTION 3.8: COMMUNITY FACILITIES & UTILITIES PLAN

GOAL:

Provide public services, facilities, and utilities in the most cost effective and environmentally-sensitive manner, taking into account the existing and future residential and non-residential needs of the SAPA area.

OBJECTIVES:

1. Locate community facilities such as libraries, parks, and emergency service providers at strategic locations within the SAPA area to meet existing and future needs.
2. Direct more intensive development to areas that currently receive central water and sewer service.
3. Upgrade central sewer systems in order to eliminate combined sewer overflow problems and to minimize the effect of infiltration and inflow of stormwater into the collection systems.

Public Schools

The four school districts that cover the SAPA area will continue to monitor anticipated enrollment increases in order to ensure that existing facilities will remain viable through the planning period. Should a new school be required, the SAPA area member municipalities will direct, to the extent possible, that it be located in close proximity to urbanized areas to promote the opportunity for students to walk or bike to school, and to allow the school to become a centerpiece of community life. SAPA member municipalities should expect the continued maintenance, renovation, and some expansion of area schools.

The SAPA area should consider developing recommendations and strategies as part of the *Open Space, Greenways, & Outdoor Recreation Master Plan* to

Chapter Three: Growth Management Plan

COMMUNITY FACILITIES & UTILITIES PLAN

consider how to install or improve sidewalks adjacent to the elementary, middle and high schools. The goal is to provide a safe route for students to walk to school without using private property or unsafe road crossings. The plans should include developing new sidewalks where none exist, making improvements to the current sidewalk network, and adding traffic calming elements to the surrounding streets to further improve pedestrian safety.

Libraries

The public libraries located in Scranton, Dalton, and Clarks Summit should be maintained and expanded to serve these Mixed-Use Centers as the population grows. As these settings grow, they should consider expanding their facilities and/or providing additional branch libraries to serve as a strong civic/community component for key areas within the Mixed-Use Centers and some of the more downtown-like parts of the Mixed-Use Corridors. Like schools, it is critical that libraries be highly accessible by means other than the automobile, to promote the opportunity for users to walk or bike to the facility and to allow it to be a center for civic life.

Emergency Services

SAPA member municipalities currently collaborate to provide emergency services. As development continues, the need for additional personnel and equipment will be monitored. In addition, the member municipalities will consider strategies for sharing additional emergency services in order to provide for the health and safety of the public in a fiscally responsible manner. The SAPA area will continue to make sure that emergency service providers are in the right position and have the resources to meet the needs of its residents.

Chapter Three: Growth Management Plan

COMMUNITY FACILITIES & UTILITIES PLAN

Scranton-Abingtons Planning Association is served by five major hospitals located in Scranton (3), Carbondale (1), and Peckville (1). These hospitals have the current capacity to serve the local population but as the median age of the SAPA area continues to rise, SAPA will encourage the development of additional health care facilities within the community.

Emergency service planning for all types of emergencies is important for the future of the SAPA area. SAPA participated in the development of the Lackawanna-Luzerne Hazard Mitigation Plan. This plan looks at the potential for natural and technological hazards and considers projects that can mitigate or prevent those hazardous conditions.

Wastewater Disposal

Careful sewage planning as part of subdivision regulation, and system construction and maintenance are critical to protecting surface and groundwater quality. Improperly functioning on-lot sewage disposal systems can affect both surface and groundwater quality. The SAPA municipalities apply state regulations through the local sewage enforcement program to ensure new on-lot disposal systems are installed properly.

However, maintenance of on-lot systems is also critical and SAPA municipalities will consider an on-lot sewage management program to extend the useful life of systems and protect water quality. Homeowners, via municipally-licensed contractors, would be required to pump septic tanks and conduct periodic system inspections, and submit a confirmation to the municipality. The program could be operated directly by the municipality or by a municipal authority, and a cooperative effort among the SAPA municipalities would be a good approach.

Chapter Three: Growth Management Plan

COMMUNITY FACILITIES & UTILITIES PLAN

The problem of failing on-lot sewer systems will need to be addressed to ensure public health and safety and to protect the entire community from the possible environmental impacts that contaminated soil and groundwater might pose. However, in general, the Scranton-Abingtons Planning Association plans to improve and maintain its existing sewer systems and does not wish to extend central sewage (or water) to areas that are not currently served or are not designated for future development. New development will be focused in areas described by this plan and where these services are currently available.

SAPA will consider the possibility of creating a larger area-wide sewer authority in order to establish and implement a plan for meeting the long-term wastewater treatment needs of the SAPA member municipalities.

Water Supply

The majority of the SAPA area population is served by large regional providers that draw upon both surface and groundwater sources. In addition, some water needs are met through private wells. The system of piped and on-site wells has the capacity to serve the future needs of the SAPA area. Although the capacity should suffice, monitoring the usage and amount of development occurring in the SAPA area will make sure the community does not run into future problems.

One concern regarding property owners who have on-site wells is the potential for groundwater contamination. In particular, some of the wells in SAPA member municipalities are older and past their life expectancy or they may be negatively affected by contamination from failing on-lot wastewater disposal systems. SAPA will encourage property owners that use well water to periodically monitor their water quality.

Chapter Three: Growth Management Plan

COMMUNITY FACILITIES & UTILITIES PLAN

Given this reliance on both surface water and groundwater for domestic purposes it is vital that water quality be carefully monitored. Proper siting, design, installation and maintenance of on-site disposal systems and water supply wells, and groundwater quality, must continue to be a municipal concern and proper land use controls must be applied to protect both the quantity and quality of supply.

The following are required local municipal actions:

Zoning

- Linking dwelling unit densities to the quality of the land by identifying environmentally-sensitive areas as part of the development process.
- Including standards for identification and protection of environmentally-sensitive areas – recharge areas, floodplains, steep slopes, wetlands, riparian buffers, etc. – and update as necessary.
- Providing incentives for conservation subdivision design where full development density is permitted, individual lot sizes are reduced, a certain percentage of open space is set aside, and sensitive natural areas are preserved.
- Allowing planned residential development and transfer of development rights as a way to shift development away from sensitive environmental areas.
- Requiring a hydrogeologic study for any proposed use which will withdraw large quantities of groundwater.
- Requiring detailed water quality protection plans for any commercial or manufacturing uses which have the potential for groundwater contamination.

Chapter Three: Growth Management Plan

COMMUNITY FACILITIES & UTILITIES PLAN

Sewage Enforcement

- Continuing the strict enforcement of the on-lot sewage disposal program.
- Evaluating the benefit of an on-lot sewage system management program.

Stormwater Management

- Requiring stormwater infiltration as the option of choice to maximize groundwater recharge.
- Addressing stormwater quality (nutrient and pollutant removal) along with quantity.

Well Construction and Protection

- Evaluating the need for a well siting and construction ordinances.
- As a means of building a data base, requiring well drillers to submit copies of the state Water Well Completion Report which includes details about new wells – depth, depth to water bearing zones, static level, yield, and type of aquifer.
- Requiring bacterial testing for all new wells with a report submitted to the municipality.
- Sponsoring an annual well water testing program and compiling and mapping the results.
- Adopting well head protection standards that limit potential contaminating activities in zones around community wells.

Chapter Three: Growth Management Plan

COMMUNITY FACILITIES & UTILITIES PLAN

Agriculture

- Encourage the use of best management practices to minimize contamination.

Alternate Energy Production

Wind turbine operators have expressed an interest in operating facilities on Bald Mountain in Newton Township and, over the planning period, increased energy costs may pique additional investor and operator interest in the SAPA area as a location for turbines. Newton Township has taken the initiative to devise and adopt an ordinance that regulates the height, placement, and operating characteristics of such equipment, and their experience should be useful to other members of the Scranton-Abingtons Planning Association. SAPA members should work together and respond appropriately to the prospect of alternate energy uses such as solar, methane, geothermal, and wind, as well as green building techniques.

Chapter Three: Growth Management Plan
COMMUNITY FACILITIES & UTILITIES PLAN



Scranton-Abingtons Planning Association (SAPA)

4. Implementation Plan



Chapter Four: Implementation Plan

GOAL:

Put in place a variety of approaches, mechanisms, and tools appropriate for dealing with the challenges and opportunities posed by growth, development, and redevelopment.

OBJECTIVES:

1. Objective: Continue to coordinate planning and development efforts among SAPA communities and with neighboring municipalities.
2. Objective: Continue to coordinate planning activities with Lackawanna County, the local school districts and State and Federal agencies.

SECTION 4.1: INTRODUCTION

The SAPA Comprehensive Plan is a blueprint for the future. The Plan provides an overall guide and framework for the future of the area, both anticipating and accommodating opportunities for focused growth in the area, while at the same time working to protect the area's sensitive natural features, open space, historic resources and local municipalities' character. The Plan designates appropriate locations for all land uses expected to be in the area over the next ten to twenty years. The Plan also sets the stage for the specific actions and collaborative work that will be required for the municipalities and their partners to implement the Plan's recommendations.

Coordinated planning efforts will make the most of opportunities to direct development, investment, and activity to specific areas and to ensure that initiatives occur in ways that support existing municipalities, districts, and neighborhoods. Deliberate, cooperative steps to implement this Plan's goals, objectives, and policies will propel the SAPA area forward.

This Plan will be used as a primary reference for evaluating and influencing future change in the SAPA area. The procedures and actions in this chapter provide guidance for the use of this Plan by the elected bodies, planning commissions, other advisory boards and commissions, and staff of the municipalities that make up the SAPA area.

Chapter Four: Implementation Plan

The SAPA Comprehensive Plan is a call to action. Chapter Four describes the Plan's implementation strategy.

SECTION 4.2: ADOPTION OF THE PLAN

The first and most basic step in the implementation of the SAPA Comprehensive Plan is its official adoption by the governing bodies of the municipalities that make up the Association. It is particularly important that the Plan be understood and endorsed by municipal elected officials. Without such understanding and support, the Plan will not be useful nor will it be followed. A prerequisite for Plan implementation is for the governing bodies, planning commissions, other advisory boards and commissions, and municipal staffs to advocate the recommendations in the Comprehensive Plan. If no one "signs on" to it, its recommendations cannot be put into effect.

The members of the SAPA Committee have an essential role in ensuring that local adoption of the Plan occurs. While many local elected and appointed officials are volunteers and may not have had the opportunity to become well versed in the latest planning concepts and tools, SAPA Committee members can help local officials obtain a working knowledge of the Plan.

SECTION 4.3: IMPLEMENTING THE PLAN

Immediately upon adoption of the SAPA Comprehensive Plan, its implementation will commence. There is plenty of work to be done. Actions are required by all those influencing the future direction of the SAPA area, including local municipalities and their elected representatives, the SAPA Committee, public agencies, private organizations, developers, investors, and others.

Following adoption, the Scranton-Abingtons Planning Association Comprehensive Plan becomes the day-to-day policy document of the municipalities in the SAPA area regarding development and redevelopment. The decisions of SAPA's constituent municipalities and any of its authorities will be consistent with the SAPA Comprehensive Plan.

Chapter Four: Implementation Plan

Unequivocal support from local public officials will make it easier to persuade other governmental officials, developers, and the public to take the Plan seriously. Professional staff of SAPA municipalities will integrate the Plan into their day-to-day work.

SAPA's municipalities will publicize the Plan and provide information to their public and private planning partners so they can take actions necessary to support Plan implementation. Municipalities will also work closely with their other partners, which will include federal, state, county and local agencies, authorities, institutions, and the private sector, to ensure their awareness and participation.

With the authorization of the SAPA constituent municipalities, the SAPA Committee will proceed with a number of implementation actions, including the preparation of an Open Space Plan for the area and draft zoning ordinance amendments.

SECTION 4.4: ADVANCING THE MAJOR PLANNING CONCEPTS – TOOLS & STRATEGIES

The major planning concepts of the Scranton-Abingtons Planning Association Comprehensive Plan are summarized in the Land Use Plan section of the Growth Management Plan. Chapter 3, Section 2 makes specific recommendations about where to focus new development and redevelopment (the targeted investment areas of Mixed-Use Centers, Mixed-Use Corridors, and Employment Centers) and where to minimize urban development and promote the conservation of natural resources. Within the areas for new development and for redevelopment, certain ideas are key, including that of mixing uses to provide livable, accessible areas for residences, offices, shopping, and recreation.

The Land Use Plan describes that the various Mixed-Use concepts can and should occur at different scales and intensities to be compatible with existing communities and to provide a range of environments consistent with the diverse group of municipalities that make up the SAPA area. Depending on the context, certain implementation tools and strategies may be more or less applicable.

Chapter Four: Implementation Plan

To help advance the Plan into implementation the major planning concepts of Mixed-Use Centers and Mixed-Use Corridors have been broken down into several discrete combinations of concepts and locations, based on the characteristics of the municipalities and, in some cases, of municipal sub-areas, as follows:

Mixed-Use Centers	Scranton City Center & Extension
Mixed-Use Centers	Dunmore
Mixed-Use Centers	Clarks Summit
Mixed-Use Centers	Clarks Green, Dalton
Village Centers	Abington (Waverly), Newton (Red Barn)
Mixed-Use Corridors	Scranton
Mixed-Use Corridors	South Abington, Clarks Summit (south)
Mixed-Use Corridors	Glenburn, South Abington (north), Clarks Summit (north)

Consistent with the above approach, the other major planning concepts, namely Employment Centers; Agricultural, Open Space and Limited, Very Low Density Residential; and Resource Conservation may be similarly described, as follows:

Employment Centers	Scranton, Dunmore
Agricultural, Open Space and Limited, Very Low Density Residential	North Abington, West Abington, Newton, Abington, Dalton, Glenburn, South Abington, Scranton, Dunmore
Resource Conservation	[Within all municipalities]

Chapter Four: Implementation Plan

The Major Planning Concepts & Implementation Strategies Matrix (Table 4.1) provides a number of implementation strategies and tools for the Scranton-Abingtons Planning Association Comprehensive Plan and indicates which ones are highly applicable to the major planning concept/location combinations described above. The implementation strategies and tools are also described below. The Matrix and descriptions present a menu of strategies and tools from which the communities can choose.

1. New Development & Redevelopment. Mixed-Use Centers, Village Centers, Mixed-Use Corridors, and Employment Centers are designated growth areas where most residential, commercial, industrial, and institutional development will occur. These uses are not intended for Agricultural, Open Space and Limited, Very Low Density Residential areas nor for Resource Conservation areas.

2. New & Upgraded Infrastructure is intended for Mixed-Use Centers, Village Centers, Mixed-Use Corridors, and Employment Centers. Agricultural, Open Space and Limited, Very Low Density Residential areas, along with Resource Conservation areas, are generally outside the limits for most new roads and sewer and water systems.

3. Adaptive Reuse & Building Restoration recognizes the large number of existing buildings in urban areas that represent a potential “found” asset for future residential, office, retail, and institutional uses. Tax abatement could help to make adaptive reuse and restoration financially feasible. Some funding may be possible through the Pennsylvania Historical and Museum Commission (PHMC), the Industrial Sites Reuse Program, and the United States Environmental Protection Agency (USEPA) for brownfield assessment and remediation.

4. Transit-Oriented Development (TOD) provides for the combining of offices, stores and shops, hotels and inns, higher-intensity residential uses, and civic, public, and semi-public uses in a closely-knit walking precinct at transit stations. Convenient transit service provides market support for TOD uses and TOD uses provide market support for transit service. The inclusion of Transit-Oriented Development in the list of implementation tools and strategies is a response in part to positive market interest in TOD;

Chapter Four: Implementation Plan

the current office market is generally weak in the northeast United States, except when office use is part of TOD, in which case the market is relatively strong. A concentration and mix of uses in TOD can generate activity and create a center in urban and suburban settings. Uses must be close to station; office within 1/8-mile, residential within 1/4-mile.

5. Mixed-Use Zoning will be required to establish mixed uses in Mixed-Use Centers, Village Centers, and Mixed-Use Corridors. The development standards for each type of location will be different, tailored to the character of and intention for that major planning concept/location combination.

6. Overlay Zoning applies regulations to a location where certain criteria have been met, and in addition to the regulations that already apply to that location based on the districts delineated on a zoning map. Overlay zoning can be an effective “placemaking” tool for suburban and urban areas, where the goal is to create mixed-use corridors with a concentration of residents, employees, shoppers, and eaters and drinkers in walkable settings.

7. Access Management Regulations control conditions of access to properties bordering a thoroughfare, with a view to maintaining free-flowing traffic and reducing vehicle-vehicle and vehicle-pedestrian collisions by limiting the frequency of driveways and/or intersecting streets. Often access management regulations are applied through a zoning overlay (see #6, above). In this instance, the overlay might apply to any location within a long, narrow strip of land that would include a thoroughfare and the area of a certain dimension on either side of it (60, 75, or 100 feet, as may be appropriate). Access management regulations are most applicable to the US Route 6/11 corridor and Employment Centers in the SAPA area.

8. Natural Resources Protection Regulations are designed to limit adverse impacts on resources and can cover traditional areas of concern, such as floodplains and wetlands, but can also cover other realms, such as steep slopes, riparian zones, and woodlands. These regulations are appropriate in all settings – rural, suburban, or urban – where natural resources are found.

Chapter Four: Implementation Plan

9. Historic Resources Protection Regulations are described in Chapter 3, Section 6, and are linked to the Adaptive Reuse & Building Restoration implementation strategy, above.

10. Reduced Off-Street Parking Requirements recognizes that in mixed-use settings the rate of auto trip generation will be lower than for conventional, single-use settings. A corresponding reduction in required off-street parking spaces should accompany mixed-use development, making it more compact and pedestrian-friendly and reducing the costs of development – an incentive to investors.

11. Property Tax Abatement/Incentives are successfully used by many municipalities to attract development and property improvement. The City of Philadelphia has used 10-year waivers of property tax to attract investment in new residential development. The Borough of Flemington, New Jersey has used 5-year abatements of homeowner property taxes that would have resulted from reassessment based on property capital improvements to provide incentive for property owners to upgrade dwellings.

12. Density Bonuses/TDR Receiving. Offering density bonuses for development can provide financial incentives to attract investors, but the incentive must be “real”. The area where the density bonus is offered must already be under greater development pressure than existing zoning or other regulations allow. Otherwise, the bonus gives little benefit to the developer (also see Transfer of Development Rights, below).

13. Development Rights Purchase/Conservation Easements. These techniques are applicable in areas where the intention is to minimize urban development and promote the conservation of natural resources. Property owners may continue to use their land for agricultural, open space, and very low density residential purposes as they do now, but gain a monetary benefit from separating the use of the property in its present form from the rights to develop the property. Purchasers of development rights or conservation easements have an interest in land preservation and may include public entities, such as a municipality, or private organizations, such as the Nature Conservancy, Countryside Conservancy, or Lackawanna Valley Conservancy.

Chapter Four: Implementation Plan

13a. Transfer of Development Rights (TDR) is a zoning technique that allows for the sale of development rights in areas intended for conservation and the purchase of those rights by developers intending to use those rights in areas where there are financial incentives to do so.

TDR includes “sending” areas and “receiving” areas for development rights, but it is fundamentally market-driven: There must be willing sellers and willing buyers of development rights. The implications of this demand-driven character for TDR cannot be underestimated. TDRs do not create demand for development, and so by themselves cannot revitalize urban areas. People must *want* to move to receiving areas. Likewise, there must be incentives for owners in sending areas to sell TDRs. Such owners must want to go through the hassles of selling a TDR rather than using it themselves.

Another implication of TDR is scarcity. A designated receiving area must already be under greater development pressure than existing zoning or other regulations allow. Otherwise, TDR gives little benefit to the developer. For the SAPA area, “sending” areas are likely to be rural. “Receiving” areas are likely to be suburban townships or attractive and desirable boroughs and villages. Areas of Scranton and Dunmore may also be viable receiving areas -- if the conditions are right. In Scranton, this may occur in any existing built (urban) area, provided that historic properties are not jeopardized.

14. Agricultural Zoning is an optional tool for preserving farmland. For this tool to be used, farmers would need to gather to discuss it. Only the farmers that support it would use this tool and the municipality would assist by making zoning changes to support it. It is intended to limit land uses to agriculture and related uses with residential development restricted as determined by individual municipalities. To learn more about this tool, a suggested booklet is: *Planning for Agriculture*, by the Pennsylvania Governor’s Center for Local Government Services.

The advantage of agricultural zoning for farmers is that it protects their investment in farmland as farmland. If one farmer in an area sells to a developer, dwellings would likely be built near other farms. The new residents would probably be unfamiliar with the practice of agriculture and would likely complain about dust, odors, and other byproducts of farming.

Chapter Four: Implementation Plan

Farmers' livelihoods can be threatened by such circumstances; to avoid this some farmers might want to form a contiguous group of farms where special zoning would ensure that agriculture would remain the main activity.

Agricultural zoning should have an *area-based allocation* of residential units, limiting the area of disturbance for residential unit construction to 1 acre per unit. For example, on a 100-acre tract, total dwelling units permitted would be 4, and the total area disturbed would be 4 acres, leaving a total area undisturbed of 96 acres.

Desirably, it should be the *sliding scale* form of area-based allocation zoning. The sliding scale form allows somewhat higher densities of development for smaller parcels than for larger ones. Sliding scale zoning has a 25-year history in Pennsylvania and has been upheld in Pennsylvania court decisions. If agricultural zoning would be employed within a community, a sliding scale table could be tailored within that community for the applicable grouping of contiguous farms.

15. Open Space Acquisition. Open space can be acquired or merely eased. If the ultimate goal is publicly-usable open space, acquisition may make sense. If open space protection is the ultimate goal, then easements will likely be sufficient (and may be much cheaper than acquisition). Acquisition can be outright purchase, but may also be a result of land donation or dedication as part of land development approvals. Open space acquisition is appropriate in all settings -- rural, suburban, and urban.

16. Open Space Easements. See Open Space Acquisition, above. For the SAPA area, open space easements are most applicable to Agricultural, Open Space and Limited, Very Low Density Residential areas, along with Resource Conservation areas.

17. Civic Squares & Neighborhood Parks. These are most appropriate for Mixed-Use Centers, Village Centers, Mixed-Use Corridors, and Employment Centers.

18. Regional Parks. Significantly-sized parks are most appropriate for Agricultural, Open Space and Limited, Very Low Density Residential areas.

Chapter Four: Implementation Plan

19. Greenways. While greenways containing trail elements that connect into Mixed-Use Centers, Village Centers, Mixed-Use Corridors, and Employment Centers are appropriate to support a network for non-motorized vehicles connecting residents to jobs, schools, shopping, and recreation, major greenway elements will be predominantly within Resource Conservation areas and Agricultural, Open Space and Limited, Very Low Density Residential areas.

20. Design Guidelines. Design standards may be codified through a zoning ordinance, but it is also possible to achieve desirable traits in new developments through a set of guidelines that augment zoning regulations. In Pennsylvania, zoning typically controls use, bulk, setback, and heights, but not materials, architectural features, and aesthetics generally. Design guidelines go beyond zoning codes and, through a document that contains narrative, tables, and ample photos and drawings, demonstrate the appearance and character desired by the community in new construction (and adaptive re-use as well). While lacking the legal underpinnings of a zoning ordinance, design guidelines can go a long way toward making landowners and developers aware of a desired result before design commences.

SECTION 4.5: ADVANCING OTHER PLANNING CONCEPTS – TOOLS & STRATEGIES

Other implementation tools and strategies are relevant to the Scranton-Abingtons Planning Association Comprehensive Plan. These are summarized below:

21. Stormwater Management. The documentation of problem areas undertaken as part of the Comprehensive Plan preparation provides a database that can be used for future projects and the review of existing local ordinances has determined opportunities for updates to strengthen ordinances. New ordinances will help municipalities incorporate the latest in stormwater management regulations into their own ordinances and targeted engineering studies will determine the source of specific stormwater problems and identify solutions. All of the local stormwater management planning will be used when planning at the watershed and county level.

Chapter Four: Implementation Plan

22. Park, Recreation, and Open Space Plan. A Park, Recreation, and Open Space (PROS) Plan for the SAPA area will be a more-focused and detailed plan for these elements than the Comprehensive Plan. Such a PROS Plan can focus on planning of specific sites and projects and also look at programming and operations. Typically funded through DCNR and DCED grants, the SAPA PROS Plan will build on a framework of the Bi-County PROS Plan and SAPA Area Comprehensive Plan. Implementation of projects identified in the SAPA PROS Plan can be funded through DCNR, DEP, and local foundations.

23. Official Map. An Official Map is authorized by the Commonwealth's Municipalities Planning Code. An Official Map for SAPA, which will include the entire area, would establish the location of existing and proposed streets, waterways, parks, and other public lands and facilities in the area. Private and public lands in which the municipalities have a future need or interest, including parcels or easements associated with the open space network recommended by the Park, Recreation, and Open Space Plan and the Comprehensive Plan, would be identified on the map to give notification to land owners and potential developers concerning the location of future public improvements or special considerations. The Official Map would be derived from and be entirely consistent with the land use, historic and cultural resources, circulation, community facilities, open space and recreation, and environmental protection elements of the new Comprehensive Plan.

24. Targeted Transportation Projects will be identified by the Transportation Master Plan. Responsive to the recommendations of the SAPA Comprehensive Plan and the Bi-County Long-range Transportation Plan, a set of new roadway linkages, intersection and segment upgrades, transit services and infrastructure, and pedestrian and bicycle facilities will be identified. Emphasis will be on connections to jobs, schools, recreation, shopping and on achieving multi-modal corridors, especially US Route 6/11.

25. Conservation Subdivision Zoning is appropriate for maximizing protection of natural features and open space in the context of "greenfield" residential development. This kind of zoning yields a similar number of units to conventional development, but less land is disturbed and the development of residential units leads to permanent protection of natural resource and open space. In addition, more compact development decreases development costs and, potentially, public costs.

Chapter Four: Implementation Plan

Conservation subdivision zoning has the potential to produce a dedication of natural resource and/or open space areas to municipality, other community entity, or conservancy and there is the potential too of linking natural resource/open space areas for higher ecological value.

Conservation subdivision zoning is appropriate in suburban areas and, if development occurs in rural areas, for those areas too. However, many impacts (auto trip generation, water/sewer service, school-age children) are the same as for conventional development.

26. Traditional Neighborhood Development (TND), a tool for suburban areas, has specific recognition by the Pennsylvania Municipalities Planning Code. TND responds to recent market interest in new development that has village- or small-town-like appearance and layout and TND projects have smaller lots and yard setbacks than the common forms of post-World War II single-family detached residential development. These developments typically feature sidewalks, relatively narrow residential streets, front porches on houses, and often alley access to garages at rear of lots. TND offers the prospect of a mixing of uses and the ability of residents to walk to commercial services from dwellings.

SECTION 4.6: AMENDMENTS TO LAND DEVELOPMENT REGULATIONS

The SAPA Comprehensive Plan's recommendations with respect to land use, transportation, housing, community facilities, open space, historic and cultural resources, natural features, and other elements provide a basis for changes to the development regulations for the municipalities that make up the area. Zoning ordinance and subdivision and land development ordinance changes are among the most significant implementing tools for the Plan, translating its sometimes broad concepts into specific regulations with which to guide future development.

Zoning of land use is the single most important legal tool available to municipalities for management of growth and development. Updated zoning ordinances is the most efficient and effective way for ensuring that re-zonings and subdivision and land development approvals are in conformance with the Comprehensive Plan.

Chapter Four: Implementation Plan

SAPA area zoning ordinances will be updated and revised to reflect the goals, objectives, and policies of the Comprehensive Plan, and to effect its implementation.

To ensure that the coordinated planning that has gone into devising the policy recommendations of the SAPA Comprehensive Plan is carried through into the application of these policies through zoning, SAPA municipalities will work cooperatively on updating zoning regulations.

Revisions to current zoning ordinances are required in particular to advance the Land Use Plan's recommendations with respect to *Mixed-Use Centers and Corridors*. These settings are intended to be attractive, economically-viable, mixed-use settings for living, working, shopping, and recreating. They are intended to be clearly identifiable and recognizable places that can act as a focus for community life, including locally-oriented businesses and community institutions.

Key to the success of these Centers and Corridors are regulations that explicitly endorse the mixing of retail, office, residential, community, and open space components and support a pedestrian-oriented physical structure. Bulk and setback standards, access conditions, on- and off-street parking provisions, and landscaping requirements will determine whether the vision endorsed by the Growth Management Plan for these areas may be realized.

As has been pointed out in the Land Use Plan section (Chapter 3, Section 2), there is a clear difference in the scale of City Center in Scranton versus the Waverly Village Center in Abington Township. Each Mixed-Use Center requires regulations that support a scale of development that is consistent with the character of the Center.

SECTION 4.7: ACTION PLAN

Table 4.1 shows Major Planning Concepts & Implementation Strategies. Table 4.2 describes critical actions needed to implement the Comprehensive Plan.

Chapter Four: Implementation Plan

Major Planning Concepts & Implementation Strategies Matrix

Table 4.1

<i>Major Planning Concepts</i>	Mixed-Use Centers	Mixed-Use Centers	Mixed-Use Centers	Mixed-Use Centers	Village Centers	Mixed-Use Corridors	Mixed-Use Corridors	Mixed-Use Corridors	Employment Centers	Agriculture, Open Space, Limited, Very Low Density Residential	Resource Conservation
<i>Relevant Location(s)</i>	Scranton City Cntr. Scranton CC Extn.	Dunmore	Clarks Summit	Clarks Green Dalton	Abington Newton	Scranton	South Abington Clarks Summit (s.)	Glenburn South Abington (n.) Clarks Summit (n.)	Scranton Dunmore	North Abington West Abington Newton Abington Dalton Glenburn South Abington Scranton Dunmore	[Within all municipalities]
<i>Implementation Strategies</i>											
1. New Development & Redevelopment	X	X	X	X	X	X	X	X	X		
2. New & Upgraded Infrastructure	X	X	X	X	X	X	X	X	X		
3. Adaptive Reuse & Bldg. Restoration	X	X	X	X	X	X			X		
4. Transit-Oriented Development	X	X	X			X	X	X	X		
5. Mixed-Use Zoning	X	X	X	X	X	X	X	X			
6. Overlay Zoning						X	X	X			
7. Access Management Regulations							X	X	X		
8. Natural Resources Protection Regulations											X
9. Historic Resources Protection Regulations	X	X	X	X	X	X					
10. Reduced Off-Street Pkg. Requiremnts	X	X	X	X	X	X	X	X	X		
11. Property Tax Abatement/Incentives	X	X	X	X		X	X	X	X		
12. Density Bonuses/TDR Receiving	X		X	X	X	X	X	X	X		
13. Development Rights Purchase/ Conservation Easements/ TDR Sending Areas										X	X
14. Agricultural Zoning										X	
15. Open Space Acquisition	X	X	X	X	X	X	X	X	X	X	X
16. Open Space Easements										X	X
17. Civic Squares & Neighborhood Parks	X	X	X	X	X	X	X	X	X		
18. Regional Parks										X	
19. Greenways										X	X
20. Design Guidelines	X	X	X	X	X	X	X	X	X		
Traditional neighborhood development and conservation subdivision are other tools, for residential or perhaps mixed-use areas.											

Chapter Four: Implementation Plan

TABLE 4.2
Timetable for Implementation of the Comprehensive Plan

	<u>Action</u>	<u>Timing</u>	<u>Primary Responsible Parties</u>
1	Adopt the SAPA Comprehensive Plan	Immediate	<ul style="list-style-type: none"> • Elected Officials
2	Prepare and Adopt Stormwater Ordinance Amendments	1-2 yrs.	<ul style="list-style-type: none"> • SAPA Committee/ Subcommittee • Elected Officials
3	Prepare and Adopt a SAPA Park, Recreation, & Open Space Plan	1-2 yrs.	<ul style="list-style-type: none"> • SAPA Committee/ Subcommittee • Elected Officials
4	Prepare and Adopt High-Priority Zoning Amendments	1-3 yrs.	<ul style="list-style-type: none"> • SAPA Committee/ Subcommittee • Elected Officials
5	Prepare and Adopt High-Priority Mixed-Use Centers, Village Centers, & Mixed-Use Corridors Master Plans	2-4 yrs.	<ul style="list-style-type: none"> • Local Task Forces, SAPA Committee • Elected Officials
6	Complete Historic Sites Survey, Prepare and Adopt Historic Resources Protection Ordinance	4-5 yrs.	<ul style="list-style-type: none"> • Local Task Forces, SAPA Committee • Elected Officials
7	Prepare and Adopt a Transportation Master Plan	5-6 yrs.	<ul style="list-style-type: none"> • SAPA Committee/ Subcommittee • Elected Officials
8	Prepare and Adopt an Official Map	5-6 yrs.	<ul style="list-style-type: none"> • SAPA Committee/ Subcommittee • Elected Officials
9	Implement a Trail System	6 yrs.	<ul style="list-style-type: none"> • SAPA Committee/ Subcommittee
10	Review the Comprehensive Plan, Consider an Update	10 yrs.	<ul style="list-style-type: none"> • SAPA Committee/ Subcommittee • Elected Officials

Chapter Four: Implementation Plan

SECTION 4.8: LIST OF POTENTIAL FUNDING PROGRAMS

A funding source section within this chapter lists programs that may be pursued in assisting residents, businesses, and government entities interested in environmentally-sustainable practices. Funding sources include federal and state programs related to alternative energy sources, greenhouse gas reduction and green construction. Available programs may vary in type, eligibility and amount annually (For more detailed information please see Appendix 4).

Pennsylvania Funding Specific Programs

A. General Planning and Implementation

1. Environmental Education Grants
2. Community Watershed Education Grants (WREN)
3. Coldwater Heritage Partnership (CHP)
4. Rivers, Trails and Conservation Assistance
5. Pennsylvania Energy Development Authority
6. Boating Facility Grant Program
7. Smart Communities
8. The Community Development Block Grant (CDBG)
9. Smart Growth America
10. William Penn Foundation
11. Heinz Foundation

B. Green Building and Infrastructure

1. Green Building Alliance
2. Pennsylvania Department of Environmental Protection (PADEP)
 - a. Growing Greener
 - b. Pennsylvania Energy Harvest
 - c. Growing Greener Watershed
3. High Performance Buildings Programs
4. Small Business Advantage Grant Program
5. U.S. Green Building Council
6. Energy Tax Incentives
7. National Association of State Energy Officials
8. The Kresge Foundation

Chapter Four: Implementation Plan

C. Greenhouse Gas Reduction

1. Local Government Greenhouse Gas Pilot Grant Program
2. Pennsylvania Energy Development Authority (PEDA)
3. Pennsylvania Alternative Fuels Incentive Grant (AFIG) Program
4. Weatherization Works! Commission on Economic Opportunity
5. Database of State Incentives for Renewables & Efficiency (DSIRE)

D. Alternative Energy Sources

1. Alternative and Clean Energy Program
2. Alternative Fuels Incentive Grant (AFIG)
3. Alternative Energy Production Tax Credit
4. Commonwealth Financing Authority (CFA) Solar Program
5. Energy Efficient Mortgages (EEMs)
6. Green Energy Works! Solar
7. HUD Title I Loans (Residential and Small Business Projects)
8. Keystone HELP Residential Energy Efficiency Program
9. Pennsylvania Energy Development Authority (PEDA)
10. Renewable Energy Program - Geothermal and Wind Projects
11. Small Business Energy Efficiency Grant Program
12. Sunshine Program
 - a. Pennsylvania Sunshine Program Installer Registration
13. Sustainable Energy Funds (SEF)
14. Pennsylvania State of Innovation
15. PENN Future
16. SOLARenewenergy
17. PRLOG

Chapter Four: Implementation Plan

Federal Funding Programs

A. General Planning and Implementation

1. American Recovery and Reinvestment Act (ARRA) Programs
2. Emergency Economic Stabilization Act of 2008 Clean Energy Incentives
3. Conservation Innovation Grants (CIG)
4. Rural Energy for America Program (REAP)
5. Tax Incentives Assistance Project (TIAP)
6. USDA Small Business Innovation Research Program

B. Green Building and Infrastructure

1. Enterprise Community Partner's Green Communities
2. Energy-Efficient New Homes Tax Credit for Home Builders
3. Energy Efficient Commercial Buildings Tax Deduction
4. Federal Residential Tax Credit

C. Greenhouse Gas Reduction

1. Community Action Renewed Environment (CARE)
2. Federal Scenic By-Ways Grants
3. Community Recreation and Conservation grants (C2P2)

D. Alternative Energy Sources

1. U.S. Department of Energy
 - a. Energy Efficiency and Renewable Energy financing,
 - b. Industrial Technologies Program
 - c. Small Business Innovation Research program
 - d. Loan Guarantee Program
2. Federal Renewable Energy Incentives
3. Renewable Electricity Production Tax Credit (PTC) and Business Energy Investment Tax Credit (ITC)
4. Residential Renewable Energy Tax Credit
5. Sustainable Energy Fund

Appendices

Appendix One

Stormwater Ordinance Recommendations

SCRANTON-ABINGTONS PLANNING ASSOCIATION COMPREHENSIVE PLAN

APPENDIX I: STORMWATER ORDINANCE RECOMMENDATIONS

In the past, DEP Act 167 Stormwater Management Plans were developed on a watershed basis based on the condition of a watershed. This methodology resulted in the preparation of the Lackawanna River Watershed Stormwater Management plan (1991), which does not contain the entire County, nor does it contain all of the SAPA area. Of the eleven (11) municipalities comprising SAPA, seven (7) are located within or partially within the Lackawanna River watershed. The remainder of the SAPA area, outside of the Lackawanna River watershed, does not have a Stormwater Management plan. A hydrologic features map that presents the watershed boundaries is provided in Chapter 2.

The Lackawanna River Act 167 was adopted in 1991 and has not been updated since its adoption. For these municipalities located wholly or partially within this DEP Act 167 Watershed, recommendations are presented to modify the existing Stormwater Ordinance. For the remaining SAPA area located outside of the Lackawanna River watershed it is recommended to adopt the existing DEP Model Ordinance (March, 2008) since no existing Ordinance is available for updating. The current DEP Model Ordinance is provided with this Comprehensive Plan as Appendix 2.

It should be noted that a DEP Act 167 Stormwater Management Plan is anticipated to be complete by 2011 for all of Lackawanna County. This county-wide approach will allow for a detailed investigation of all the watersheds in Lackawanna County, and will serve as a mechanism for all municipal officials and watershed stakeholders to provide input on stormwater management. The result will be a comprehensive Stormwater Management Plan for the county. In the interim, however, it is recommended that municipal officials of SAPA municipalities in the Lackawanna River watershed review the recommendations for stormwater management presented in this document. These recommendations are based on incorporating updated stormwater management criteria from the current DEP Model Ordinance into the existing Lackawanna River Stormwater Management Plan and Ordinance.

The Lackawanna River Stormwater Ordinance produced in 1991 focused on several stormwater management techniques:

- Control accelerated runoff;
- Utilize and preserve existing natural drainage;
- Encourage recharge of groundwater;
- Maintain existing flows and water quality of streams;
- Preserve and restore the flood carrying capacity of streams;
- Provide for proper maintenance of all stormwater management structures.

Act 167 Plans in the past have been directed towards water *quantity* control thereby focusing on release rates for specific management districts in order to minimize flooding. The purpose of future plans is still to minimize flooding through 100% Post-Construction to Pre-Construction release rate methodology but also to improve water *quality*. The minimum Water Quality Volume (WQV) which is the amount of runoff to be mitigated to protect water quality was determined by the DEP to be $WQV = \frac{1}{2}$ inch (at the time of the Lackawanna River Stormwater Management Plan adoption). The DEP has now determined the minimum WQV to be 1 inch in order to mitigate pollutants generated by new impervious surfaces. However, the Lackawanna River Stormwater Management Plan requires 1.5 inches of runoff to be infiltrated, which is more stringent than the new requirements. Therefore, the recommendations presented in this document will utilize some criteria from the existing Lackawanna River Stormwater Management Plan in order to not reduce existing standards that may supersede new regulations. This logic is also true of the Stormwater Management Districts that were developed for the Lackawanna River Stormwater Management Plan; these districts for release rate control will continue to be used through the recommended update, and future Plan updates.

The process of developing a Stormwater Ordinance requires certain minimum standards to be met as set forth by the DEP. Once these standards are met, the Municipality can decide to adopt more stringent standards based on the specific needs of the area.

RECOMMENDATIONS FOR THE LACKAWANNA RIVER STORMWATER ORDINANCE

The following are recommended changes to be made to the existing Stormwater Ordinance included in the Lackawanna River Stormwater Management Plan. Each municipality may pursue any of the recommendations, and make changes to the recommendations to create a practical and implementable Ordinance. To readopt a Stormwater Ordinance, a public hearing must be held in each municipality that chooses to do so.

The recommendations presented here follow the general methodology: **BOLD TEXT** refers to the section of the **EXISTING** Lackawanna River Stormwater Ordinance (1991). The *RECOMMENDATION* following each section is from the current DEP Model Stormwater Ordinance (March, 2008) or from a recently completed Stormwater Management Plan that incorporates criteria suitable for use in the Lackawanna River watershed.

TABLE OF CONTENTS

RECOMMENDATION –

Add the following Articles to the Table of Contents and revise the Article numbering scheme to be consistent (i.e. in the proper order, as Article VIII is currently Adoption):

Article VIII - Prohibitions

Section 801.	Prohibited Discharges and Connections
Section 802.	Roof Drains
Section 803.	Alteration of SWM BMPs

Article IX - Enforcement and Penalties

Section 901.	Right-of-Entry
Section 902.	Inspection
Section 903.	Enforcement
Section 904.	Suspension and Revocation
Section 905.	Penalties
Section 906.	Appeals

Change **Article VIII Adoption** to *Article X Adoption*

Article X - Adoption

Section 1001.	Adoption
Section 1002.	Public Hearing
Section 1003.	Adoption Date

ARTICLE I – GENERAL PROVISIONS

SECTION 101. STATEMENT OF FINDINGS

RECOMMENDATION –

Replace with the following:

Section 101. Statement of Findings

The governing body of the Municipality finds that:

- A. Inadequate management of accelerated runoff of stormwater resulting from development throughout a watershed increases flows and velocities, contributes to erosion and sedimentation, overtaxes the carrying capacity of streams and storm sewers, greatly increases the cost of public facilities to carry and control stormwater, undermines floodplain management and flood control efforts in downstream communities, reduces groundwater recharge, threatens public health and safety, and increases non-point source pollution of water resources.
- B. A comprehensive program of stormwater management, including reasonable regulation of development and activities causing accelerated runoff, is fundamental to the public health,

safety and welfare and the protection of people of the Commonwealth, their resources and the environment.

- C. Stormwater is an important water resource, which provides groundwater recharge for water supplies and base flow of streams, which also protects and maintains surface water quality.
- D. Federal and state regulations require certain municipalities to implement a program of stormwater controls. These municipalities are required to obtain a permit for stormwater discharges from their separate storm sewer systems under the NPDES.

SECTION 102. PURPOSE

RECOMMENDATION –

Replace with the following:

Section 102. Purpose

The purpose of this Ordinance is to promote health, safety, and welfare within the Lackawanna River Watershed by minimizing the damages described in Section 101(A) of this Ordinance by provisions designed to:

- A. Meet legal water quality requirements under state law, including regulations at 25 Pa. Code Chapter 93 to protect, maintain, reclaim and restore the existing and designated uses of the waters of this Commonwealth.
- B. Conserve the natural drainage systems as much as possible.
- C. Manage stormwater runoff close to the source.
- D. Provide procedures and performance standards for stormwater planning and management.
- E. Maintain groundwater recharge, to prevent degradation of surface and groundwater quality and to otherwise protect water resources.
- F. Prevent scour and erosion of stream banks and streambeds.
- G. Provide proper operation and maintenance of all permanent Stormwater Management (SWM) Best Management Practices (BMPs) that are implemented within the Municipality.
- H. Provide standards to meet NPDES permit requirements.

SECTION 103. STATUTORY AUTHORITY

RECOMMENDATION –

Section 103 should read as follows:

Section 103. Statutory Authority

A. Primary Authority

The [municipality] is empowered to regulate these activities by the authority of the Act of October 4, 1978, P.L. 864 (Act 167), the “Storm Water Management Act” and the [appropriate municipal code].

B. Secondary Authority

The Municipality also is empowered to regulate land use activities that affect runoff by the authority of the Act of July 31, 1968, P.L. 805, No. 247, The Pennsylvania Municipalities Planning Code, as amended.

SECTION 104. APPLICABILITY

RECOMMENDATION –

The 4th Paragraph of Section 104 should read as follows:

The following activities are defined as Regulated Activities and shall be regulated by this Ordinance.

RECOMMENDATION –

The last two sentences of the last paragraph in Section 104 should be removed:

“Any areas...” and “No waiver...”

SECTION 105. EXEMPTIONS

RECOMMENDATION –

Replace entire section with the following:

Section 105. Exemptions

- A. Regulated Activities that create Disconnected Impervious Areas smaller than (x) sq. ft. are exempt from the Peak Rate Control and the SWM Site Plan preparation requirement of this Ordinance.
- B. Regulated Activities that create Disconnected Impervious Areas equal to or greater than (x) sq. ft. and less than (y) sq. ft. are exempt only from the peak rate control requirement of this Ordinance.
- C. Agricultural plowing and tilling are exempt from the rate control and SWM Site Plan preparation requirements of this Ordinance provided the activities are performed according to the requirements of 25 Pa. Code Chapter 102.

- D. Forest management and timber operations are exempt from the rate control and SWM Site Plan preparation requirements of this ordinance provided the activities are performed according to the requirements of 25 Pa. Code Chapter 102.
- E. Exemptions from any provisions of this Ordinance shall not relieve the applicant from the requirements in Sections 301.D. through L.

**NOTE: Values of 250 to 1,000 are recommended for “x” and values of 1,000 to 5,000 are recommended for “y”.

ARTICLE II - DEFINITIONS

RECOMMENDATION –

It is recommended that all of Article II be replaced with Article II from the current (2008) DEP Model Stormwater Ordinance. Careful attention should be paid to the terms used in the Ordinance, and any extemporaneous terms should be removed from the Definitions. Replace Article II as follows:

For the purposes of this Ordinance, certain terms and words used herein shall be interpreted as follows:

- A. Words used in the present tense include the future tense; the singular number includes the plural, and the plural number includes the singular; words of masculine gender include feminine gender; and words of feminine gender include masculine gender.
- B. The word “includes” or “including” shall not limit the term to the specific example but is intended to extend its meaning to all other instances of like kind and character.
- C. The words “shall” and “must” are mandatory; the words “may” and “should” are permissive.

Agricultural Activity - The work of producing crops including tillage, land clearing, plowing, disking, harrowing, planting, harvesting crops, or pasturing and raising of livestock and installation of conservation measures. Construction of new buildings or impervious area is not considered an Agricultural Activity.

Applicant - A landowner, developer or other person who has filed an application to the Municipality for approval to engage in any Regulated Activity at a project site in the Municipality.

Best Management Practice (BMP) - Activities, facilities, designs, measures or procedures used to manage stormwater impacts from Regulated Activities, to meet State Water Quality Requirements, to promote groundwater recharge and to otherwise meet the purposes of this Ordinance. Stormwater BMPs are commonly grouped into one of two broad categories or measures: “structural” or “non-structural”. In this ordinance, non-structural BMPs or measures refer to operational and/or behavior-related practices that attempt to minimize the contact of

pollutants with stormwater runoff whereas structural BMPs or measures are those that consist of a physical device or practice that is installed to capture and treat stormwater runoff. Structural BMPs include, but are not limited to, a wide variety of practices and devices, from large-scale retention ponds and constructed wetlands, to small-scale underground treatment systems, infiltration facilities, filter strips, low impact design, bioretention, wet ponds, permeable paving, grassed swales, riparian or forested buffers, sand filters, detention basins, and manufactured devices. Structural Stormwater BMPs are permanent appurtenances to the project site.

Cistern – An underground reservoir or tank for storing rainwater.

Conservation District - A conservation district, as defined in section 3(c) of the Conservation District Law (3 P. S. § 851(c)), which has the authority under a delegation agreement executed with the Department to administer and enforce all or a portion of the erosion and sediment control program in this Commonwealth.

Culvert – A pipe, conduit, or similar structure including appurtenant works which carries surface water.

Design Storm - The magnitude and temporal distribution of precipitation from a storm event measured in probability of occurrence (e.g. a 5-year-storm) and duration (e.g. 24 hours), used in the design and evaluation of stormwater management systems. Also see Return Period.

Detention - The volume of runoff that is captured and released into the waters of this Commonwealth at a controlled rate.

DEP - The Pennsylvania Department of Environmental Protection.

DER - The Pennsylvania Department of Environmental Resources.

Detailed Study Area – Study areas outside of the Lackawanna River Boundaries themselves for which plans have been prepared previously by The United States Army Corps of Engineers and/or DER. Modeling for these areas was undertaken with the Penn State Runoff Model.

Detention Basin – A basin designed to retard storm water runoff by temporarily storing the runoff and releasing it at a predetermined rate.

Development Plan – A detailed narrative with related mapping outlining the proposed project along with the storm water runoff measures proposed to comply with this ordinance.

Development Site (Site) - See Project Site.

Developer – A person, partnership, association, corporation or other entity, or any responsible person therein or agent thereof, that undertakes any Regulated Activity of this Ordinance.

Disconnected Impervious Area (DIA) - An impervious or impermeable surface which is disconnected from any stormwater drainage or conveyance system and is redirected or directed to a pervious area which allows for infiltration, filtration, and increased time of concentration.

Disturbed Area - An unstabilized land area where an Earth Disturbance is occurring or has occurred.

Drainage Easement – A right granted by a land owner to a grantee, allowing the use of private land for stormwater purposes.

Earth Disturbance Activity - A construction or other human activity which disturbs the surface of the land, including, but not limited to, clearing and grubbing; grading; excavations; embankments; road maintenance; building construction; the moving, depositing, stockpiling, or storing of soil, rock or earth materials.

Erosion - The natural process by which the surface of the land is worn away by water, wind or chemical action.

Existing Condition - The dominant land cover during the 5-year period immediately preceding a proposed Regulated Activity.

FEMA - Federal Emergency Management Agency.

Floodplain - Any land area susceptible to inundation by water from any natural source or delineated by applicable FEMA maps and studies as being a special flood hazard area. Included are lands adjoining a river or stream that have been or may be expected to be inundated by a 100-year flood. Also included are areas that comprise Group 13 Soils, as listed in Appendix A of the Pennsylvania DEP Technical Manual for Sewage Enforcement Officers (as amended or replaced from time to time by PADEP).

Floodway - The channel of the watercourse and those portions of the adjoining floodplains that are reasonably required to carry and discharge the 100-year flood. Unless otherwise specified, the boundary of the floodway is as indicated on maps and flood insurance studies provided by FEMA. In an area where no FEMA maps or studies have defined the boundary of the 100-year floodway, it is assumed -- absent evidence to the contrary -- that the floodway extends from the stream to 50 feet from the top of the bank of the stream.

Freeboard – The incremental depth in a storm water management structure, provided as a safety factor of design, above that required to convey the design runoff event.

Forest Management/Timber Operations - Planning and activities necessary for the management of forestland. These include conducting a timber inventory, preparation of forest management plans, silvicultural treatment, cutting budgets, logging road design and construction, timber harvesting, site preparation and reforestation.

Governing Body – The municipal entity empowered to review and/or approve of storm water management plans, development site plans, facilities and maintenance agreements. The governing body may authorize at the municipal planning commission or other appropriate body to undertake any or all of the above responsibilities.

Groundwater Recharge – Replenishment of existing natural underground water supplies.

Hydrologic Soil Group (HSG) - Infiltration rates of soils vary widely and are affected by subsurface permeability as well as surface intake rates. Soils are classified into four HSG's (A, B, C, and D) according to their minimum infiltration rate, which is obtained for bare soil after prolonged wetting. The NRCS defines the four groups and provides a list of most of the soils in the United States and their group classification. The soils in the area of the development site may be identified from a soil survey report that can be obtained from local NRCS offices or conservation district offices. Soils become less pervious as the HSG varies from A to D (NRCS^{3,4}).

Impervious Surface (Impervious Area) - A surface that prevents the infiltration of water into the ground. Impervious surfaces (or areas) shall include, but not be limited to, roofs, additional indoor living spaces, patios, garages, storage sheds and similar structures, and any new streets or sidewalks. Decks, parking areas, and driveway areas are not counted as impervious areas if they do not prevent infiltration.

Infiltration Structure – A structure designed to direct runoff into the ground, e.g. French drain, seepage pit or seepage trench.

Karst - A type of topography or landscape characterized by surface depressions, sinkholes, rock pinnacles/uneven bedrock surface, underground drainage and caves. Karst is formed on carbonate rocks, such as limestone or dolomite.

Land Development (Development) - Inclusive of any or all of the following meanings: (i) the improvement of one lot or two or more contiguous lots, tracts, or parcels of land for any purpose involving (a) a group of two or more buildings, or (b) the division or allocation of land or space between or among two or more existing or prospective occupants by means of, or for the purpose of streets, common areas, leaseholds, condominiums, building groups, or other features; (ii) any subdivision of land; (iii) development in accordance with Section 503(1.1) of the PA Municipalities Planning Code.

LCRPC – The Lackawanna County Regional Planning Commission

Mainstem (main channel) – Any stream segment or other runoff conveyance facility used as a reach in the Lackawanna River hydrologic model.

Manning Equation (Manning formula) – A method for calculation of velocity of flow (e.g. feet per second) and flow rate (e.g. cubic feet per second) in open channels based upon channel shape,

roughness, depth of flow and slope. “Open channels” may include closed conduits so long as the flow is not under pressure.

Municipality - (municipality name), (county name) County, Pennsylvania.

Municipal Engineer - Person or firm engaged by municipality to undertake engineering type reviews for projects within the municipal boundaries.

Municipal Planning Commission - That body charged with planning related functions on the municipal level as defined in Act 247, the Pennsylvania Municipalities Code.

NRCS - USDA Natural Resources Conservation Service (previously SCS).

Peak Discharge - The maximum rate of stormwater runoff from a specific storm event.

Penn State Runoff Model (calibrated) – The computer-based hydrologic modeling technique adapted to the Lackawanna River Watershed for the Act 167 Plan. The model has been “calibrated” to reflect actual recorded flow values by adjusting key model input parameters.

Pervious Area - Any area not defined as impervious.

Project Site - The specific area of land where any Regulated Activities in the Municipality are planned, conducted or maintained.

Qualified Professional - Any person licensed by the Pennsylvania Department of State or otherwise qualified by law to perform the work required by the Ordinance.

Rational Method – A method of peak runoff calculation using a standardized runoff coefficient (rational ‘C’), acreage of tract and rainfall intensity determined by return period and by the time necessary for the entire tract to contribute runoff. The rational formula is stated as follows: $Q = CIA$, where “Q” is the calculated peak flow rate in cubic feet per second, “C” is the dimensionless runoff coefficient (see Appendix B under separate cover), “I” is the rainfall intensity in inches per hour, and “A” is the area of the tract in acres.

Reach - Any of the natural or man-made runoff conveyance channels used for modeling purposes to connect the subareas and transport flows downstream.

Regulated Activities - Any Earth Disturbances Activities or any activities that involve the alteration or development of land in a manner that may affect stormwater runoff.

Regulated Earth Disturbance Activity - Activity involving Earth Disturbance subject to regulation under 25 Pa. Code Chapters 92, Chapter 102, or the Clean Streams Law.

Release Rate – The percentage of the predevelopment peak rate of runoff for a development site to which the post-development peak rate of runoff must be controlled to protect downstream areas.

Retention/Removed Runoff - The volume of runoff that is captured and not released directly into the surface waters of this Commonwealth during or after a storm event.

Return Period - The average interval, in years, within which a storm event of a given magnitude can be expected to occur one time. For example, the 25-year return period rainfall would be expected to occur on average once every 25 years. The probability of a 25-year storm occurring in any one year is 0.04 (i.e. a 4% chance).

Runoff - Any part of precipitation that flows over the land.

Seepage Pit/Seepage Trench – An area of excavated earth filled with loose stone or similar material and into which surface water is directed for infiltration into the ground.

SCS –Soil Conservation Service, U.S. Department of Agriculture.

Sediment - Soils or other materials transported by surface water as a product of erosion.

Soil-Cover-Complex Method –A method of runoff computation developed by SCS which is based upon relating soil type and land use / cover to a runoff parameter called a Curve Number.

State Water Quality Requirements - The regulatory requirements to protect, maintain, reclaim, and restore water quality under Pennsylvania Code Title 25 and the Clean Streams Law.

Storage Indication Method – A reservoir routing procedure based on solution of the continuity equation (inflow minus outflow equals the change in storage for a given time interval) and based on outflow being a unique function of storage volume.

Stormwater - Drainage runoff from the surface of the land resulting from precipitation or snow or ice melt.

Stormwater Management Facility - Any structure, natural or man-made, that, due to its condition, design, or construction, conveys, stores, or otherwise affects stormwater runoff. Typical stormwater management facilities include, but are not limited to, detention and retention basins, open channels, storm sewers, pipes, and infiltration facilities.

Stream – A watercourse.

Stormwater Management Plan - The (name of stormwater management plan) for managing stormwater runoff adopted by the County of (county name) as required by the Act of October 4, 1978, P.L. 864, (Act 167), as amended, and known as the “Storm Water Management Act”.

Stormwater Management Best Management Practices - Is abbreviated as **SWM BMPs** throughout this Ordinance.

Stormwater Management Site Plan - The plan prepared by the Developer or his representative indicating how storm water runoff will be managed at the development site in accordance with this Ordinance. **Stormwater Management Site Plan** will be designated as **SWM Site Plan** throughout this Ordinance.

Storm Sewer – A system of pipes or other conduits which carries intercepted surface runoff, street water and other wash waters, or drainage, but excludes domestic sewage and industrial wastes.

Subarea – The smallest unit of watershed breakdown for hydrologic modeling purposes for which the runoff control criteria have been established in the Storm Water Management Plan.

Subdivision - As defined in The Pennsylvania Municipalities Planning Code, Act of July 31, 1968, P.L. 805, No. 247.

USDA - United States Department of Agriculture.

Waters of this Commonwealth - Rivers, streams, creeks, rivulets, impoundments, ditches, watercourses, storm sewers, lakes, dammed water, wetlands, ponds, springs and other bodies or channels of conveyance of surface and underground water, or parts thereof, whether natural or artificial, within or on the boundaries of this Commonwealth.

Watershed - Region or area drained by a river, watercourse or other surface water of the Commonwealth.

Wetland - Those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions, including swamps, marshes, bogs, fens, and similar areas.

ARTICLE III – STORMWATER MANAGEMENT REQUIREMENTS

SECTION 301. GENERAL REQUIREMENTS

RECOMMENDATION –

Replace with the following:

Section 301. General Requirements

- A. For all Regulated Activities, unless preparation of an SWM Site Plan is specifically exempted in Section 302:

1. Preparation and implementation of an approved SWM Site Plan is required.
 2. No Regulated Activities shall commence until the municipality issues written approval of an SWM Site Plan, which demonstrates compliance with the requirements of this Ordinance.
- B. SWM Site Plans approved by the Municipality, in accordance with Section 406, shall be on site throughout the duration of the Regulated Activity.
- C. The Municipality may, after consultation with DEP, approve measures for meeting the State Water Quality Requirements other than those in this Ordinance, provided that they meet the minimum requirements of, and do not conflict with, State law including but not limited to the Clean Streams Law.
- D. For all Regulated Earth Disturbance Activities, erosion and sediment control BMPs shall be designed, implemented, operated, and maintained during the Regulated Earth Disturbance Activities (e.g., during construction) to meet the purposes and requirements of this Ordinance and to meet all requirements under the Pennsylvania Code Title 25 and the Clean Streams Law. Various BMPs and their design standards are listed in the *Erosion and Sediment Pollution Control Program Manual (E&S Manual)*², Commonwealth of Pennsylvania, Department of Environmental Protection, No. 363-2134-008, as amended and updated.
- E. For all Regulated Activities, implementation of the Volume Controls in Section 303 is required.
- F. Impervious Areas:
 1. The measurement of impervious areas shall include all of the impervious areas in the total proposed development even if development is to take place in stages.
 2. For development taking place in stages, the entire development plan must be used in determining conformance with this Ordinance.
 3. For projects that add impervious area to a parcel, the total impervious area on the parcel is subject to the requirements of this ordinance.
- G. Stormwater flows onto adjacent property shall not be created, increased, decreased, relocated, or otherwise altered without permission of the adjacent property owner(s). Such stormwater flows shall be subject to the requirements of this Ordinance.
- H. All regulated activities shall include such measures as necessary to:
 1. Protect health, safety, and property;
 2. Meet State Water Quality Requirements as defined in Article II;

3. Meet the water quality goals of this ordinance by implementing measures to:
 - a. Minimize disturbance to floodplains, wetlands, natural slopes over 8%, and existing native vegetation.
 - b. Preserve and maintain trees and woodlands. Maintain or extend riparian buffers and protect existing forested buffer. Provide trees and woodlands adjacent to impervious areas whenever feasible.
 - c. Establish and maintain non-erosive flow conditions in natural flow pathways.
 - d. Minimize soil disturbance and soil compaction. Cover disturbed areas and replace topsoil to a minimum depth equal to the original depth or 4 inches, whichever is greater. Use tracked equipment for grading when feasible.
 - e. Disconnect impervious surfaces by directing runoff to pervious areas, wherever possible.
4. To the maximum extent practicable, incorporate the techniques for Low Impact Development Practices described in “The Pennsylvania Stormwater Best Management Practices Manual” (SWM Manual)¹.
 - I. The design of all facilities over Karst shall include an evaluation of measures to minimize adverse effects.
 - J. Infiltration BMPs should be spread out, made as shallow as practicable, and located to maximize use of natural on-site infiltration features while still meeting the other requirements of this Ordinance.
 - K. Storage facilities should completely drain both the volume control and rate control capacities over a period of time not less than 24 and not more than 72 hours from the end of the design storm.
 - L. For all Regulated Activities, SWM BMPs shall be designed, implemented, operated, and maintained to meet the purposes and requirements of this Ordinance and to meet all requirements under Pennsylvania Code Title 25, the Clean Streams Law, and the Storm Water Management Act.
 - M. The design storm volumes to be used in the analysis of peak rates of discharge should be obtained from the Precipitation-Frequency Atlas of the United States, Atlas 14, Volume 2, U.S. Department of Commerce, National Oceanic and Atmospheric Administration (NOAA), National Weather Service, Hydrometeorological Design Studies Center, Silver Spring, Maryland, 20910. NOAA’s Atlas 14⁵ can be accessed at Internet address: <http://hdsc.nws.noaa.gov/hdsc/pfds/>.

N. Various BMPs and their design standards are listed in the SWM Manual.¹

SECTION 303. STORMWATER MANAGEMENT DISTRICT IMPLEMENTATION PROVISIONS

RECOMMENDATION –

Replace with the following:

Section 303. Volume Controls

The low impact development practices provided in the SWM Manual¹ shall be utilized for all Regulated Activities to the maximum extent practicable.

Water volume controls shall be implemented using the *Design Storm Method* in Subsection 1 or the *Simplified Method* in Subsection 2 below. For Regulated Activity areas equal or less than one (1) acre that do not require hydrologic routing to design the stormwater facilities, this Ordinance establishes no preference for either methodology; therefore, the applicant may select either methodology on the basis of economic considerations, the intrinsic limitations on applicability of the analytical procedures associated with each methodology, and other factors.

- I. *The Design Storm Method* (CG-1 in the SWM Manual¹) is applicable to any size of Regulated Activity. This method requires detailed modeling based on site conditions.
 - a. Do not increase the post-development total runoff volume for all storms equal to or less than the 2-year 24-hour duration precipitation.
 - b. For modeling purposes:
 - i. Existing (pre-development) non-forested pervious areas must be considered meadow or its equivalent.
 - ii. Twenty (20) percent of existing impervious area, when present, shall be considered meadow in the model for existing conditions.
2. *The Simplified Method* (CG-2 in the SWM Manual¹) provided below is independent of site conditions and should be used if the Design Storm Method is not followed. This method is not applicable to Regulated Activities greater than one (1) acre or for projects that require detailed design of stormwater storage facilities. For new impervious surfaces:
 - a. Stormwater facilities shall capture at least the first two inches (2”) of runoff from all new impervious surfaces.
 - b. At least the first one inch (1.0”) of runoff from new impervious surfaces shall be permanently removed from the runoff flow -- i.e. it shall not be released into the

surface waters of this Commonwealth. Removal options include reuse, evaporation, transpiration, and infiltration.

- c. Wherever possible, infiltration facilities should be designed to accommodate infiltration of the entire permanently removed runoff; however, in all cases at least the first one-half inch (0.5”) of the permanently removed runoff should be infiltrated.
- d. This method is exempt from the requirements of Section 304, Rate Controls.

SECTION 304. CALCULATION METHODOLOGY

RECOMMENDATION –

Replace w/ the following:

Section 304. Calculation Methodology

Stormwater runoff from all development sites shall be calculated using either the rational method or a soil-cover-complex methodology.

- A. Any stormwater runoff calculations shall use generally accepted calculation technique that is based on the NRCS soil cover complex method. Table 304-I summarizes acceptable computation methods. It is assumed that all methods will be selected by the design professional based on the individual limitations and suitability of each method for a particular site.

The Municipality will allow the use of the Rational Method to estimate peak discharges from drainage areas that contain less than 200 acres. The Soil Complex Method is recommended for drainage areas greater than 200 acres.

**TABLE 304-I
Acceptable Computation Methodologies For
Stormwater Management Plans**

<u>METHOD</u>	<u>METHOD DEVELOPED BY</u>	<u>APPLICABILITY</u>
TR-20 (or commercial computer package based on TR-20)	USDA NRCS	Applicable where use of full hydrology computer model is desirable or necessary.
TR-55 (or commercial computer package based on TR-55)	USDA NRCS	Applicable for land development plans within limitations described in TR-55.
HEC-I / HEC-HMS	US Army Corps of Engineers	Applicable where use of full hydrologic computer model is desirable or necessary.

PSRM	Penn State University	Applicable where use of a hydrologic computer model is desirable or necessary; simpler than TR-20 or HEC-1.
Rational Method or commercial computer package based on Rational Method)	Emil Kuichling(1889)	For sites less than 200 acres and with time of concentration less than 60 minutes ($t_c < 60$ min), and with time of concentration less than 60 minutes ($t_c < 60$ min.), or as approved by the Municipality.
Other Methods such as SWMM, HEC-HMD, WinTR20, and successors	Various	Other computation methodologies approved by the Municipality.

- B. All calculations consistent with this Ordinance using the soil cover complex method shall use the appropriate design rainfall depths for the various return period storms according to the region for which they are located as presented in the current PennDOT Drainage Manual. If a hydrologic computer model such as PSRM or HEC-1/ HEC-HMS is used for stormwater runoff calculations, then the duration of rainfall shall be 24 hours. The rainfall distribution should reference to NOAA Atlas 14.
- C. For the purposes of existing conditions flow rate determination, undeveloped land shall be considered as "meadow" in good condition, unless the natural ground cover generates a lower curve number or Rational 'C' value (i.e., forest), as listed in Table E-1 or E-2 in Appendix E of this document.
- D. All calculations using the Rational Method shall use rainfall intensities consistent with appropriate times-of-concentration for overland flow and return periods presented in the NOAA Atlas 14 or the PA Storm-Duration-Frequency charts from PennDOT Drainage Manual Chapter 7. Times-of-concentration for overland flow shall be calculated using the methodology presented in Chapter 3 of *Urban Hydrology for Small Watersheds*, NRCS, TR-55 (as amended or replaced from time to time by NRCS). Times-of-concentration for channel and pipe flow shall be computed using Manning's equation. Times-of-concentration in undeveloped areas using the NCRS lag equation divided by 0.6 is also acceptable.
- E. Runoff Curve Numbers (CN) for both existing and proposed conditions to be used in the soil cover complex method shall be obtained from Table E-1 in Appendix E of this Ordinance.
- F. Runoff coefficients (c) for both existing and proposed conditions for use in the Rational method shall be obtained from Table E-2 in Appendix E of this Ordinance.
- G. Where uniform flow is anticipated, the Manning equation shall be used for hydraulic computations, and to determine the capacity of open channels, pipes, and storm sewers. Values for Manning's roughness coefficient (n) shall be consistent with Table E-3 in Appendix E of this Ordinance.

- H. Outlet structures for stormwater management facilities shall be designed to meet the performance standards of this Ordinance using any generally accepted hydraulic analysis technique or method.
- I. The design of any stormwater detention facilities intended to meet the performance standards of this Ordinance shall be verified by routing the design storm hydrograph through these facilities using the Storage-Indication Method. For drainage areas greater than 200 acres in size, the design storm hydrograph shall be computed using a calculation method that produces a full hydrograph. The municipality may approve the use of any generally accepted full hydrograph approximation technique that shall use a total runoff volume that is consistent with the volume from a method that produces a full hydrograph.

ARTICLE IV – DRAINAGE PLAN REQUIREMENTS

RECOMMENDATION –

It is recommended all of Article IV be replaced with the current Stormwater Management Site Plan Requirements in the 2008 DEP Model Stormwater Ordinance:

ARTICLE IV - STORMWATER MANAGEMENT (SWM) SITE PLAN REQUIREMENTS

Section 401. Plan Contents

The following items shall be included in the SWM Site Plan:

- A. Appropriate sections from the Municipal Subdivision and Land Development Ordinance, and other applicable local ordinances, shall be followed in preparing the SWM Site Plans. In instances where the Municipality lacks Subdivision and Land Development regulations, the content of SWM Site Plans shall follow the County's Subdivision and Land Development Ordinance.
- B. The Municipality shall not approve any SWM Site Plan that is deficient in meeting the requirements of this Ordinance. At its sole discretion and in accordance with this Article, when a SWM Site Plan is found to be deficient, the Municipality may either disapprove the submission and require a resubmission, or in the case of minor deficiencies the Municipality may accept submission of modifications.
- C. Provisions for permanent access or maintenance easements for all physical SWM BMPs, such as ponds and infiltration structures, as necessary to implement the operation and maintenance plan discussed in item E.9 below.
- D. The following signature block for the Municipality:

“(Municipal Official or designee), on this date (date of signature), has reviewed and hereby certifies that the SWM Site Plan meets all design standards and criteria of the Municipal Ordinance No. (Number assigned to the Ordinance).”

- E. The SWM Site Plan shall provide the following information:
1. The overall stormwater management concept for the project.
 2. A determination of Site Conditions in accordance with the SWM Manual¹. A detailed site evaluation shall be completed for projects proposed in areas of carbonate geology or karst topography, and other environmentally sensitive areas such as brownfields.
 3. Stormwater runoff design computations, and documentation as specified in this Ordinance, or as otherwise necessary to demonstrate that the maximum practicable measures have been taken to meet the requirements of this Ordinance, including the recommendations and general requirements in Section 301.
 4. Expected project time schedule.
 5. A soil erosion and sediment control plan, where applicable, as prepared for and approved by the approval authority.
 6. The effect of the project (in terms of runoff volumes, water quality, and peak flows) on surrounding properties and aquatic features and on any existing stormwater conveyance system that may be affected by the project.
 7. Plan and profile drawings of all SWM BMPs including open channel structures, pipes, open channels, and swales.
 8. SWM Site Plan shall show the locations of existing and proposed on-lot wastewater facilities and water supply wells.
 9. The SWM Site Plan shall include an operation and maintenance (O&M) plan for all existing and proposed physical stormwater management facilities. This plan shall address long-term ownership and responsibilities for operation and maintenance as well as schedules and costs for O&M activities.

Section 402. Plan Submission

- A. ____ (Typically Five (5)) copies of the SWM Site Plan shall be submitted as follows:
1. ____ (Typically Two (2)) copies to the Municipality.
 2. ____ (Typically One (1)) copy to the Municipal Engineer (when applicable).
 3. ____ (Typically One (1)) copy to the County Conservation District.

4. _____ (Typically One (1)) copy to the County Planning Commission/Office.
- B. Additional copies shall be submitted as requested by the Municipality or DEP.

Section 403. Plan Review

- A. The SWM Site Plan shall be reviewed by a Qualified Professional for the Municipality for consistency with the provisions of this ordinance. After review, the Qualified Professional shall provide a written recommendation for the municipality to approve or disapprove the SWM Site Plan. If it is recommended to disapprove the SWM Site Plan, the Qualified Professional shall state the reasons for the disapproval in writing. The Qualified Professional also may recommend approval of the SWM Site Plan with conditions and, if so, shall provide the acceptable conditions for approval in writing. The SWM Site Plan review and recommendations shall be completed within the time allowed by the Municipalities Planning Code for reviewing subdivision plans.
- B. The Municipality shall notify the applicant in writing within 45 calendar days whether the SWM Site Plan is approved or disapproved. If the SWM Plan involves a Subdivision and Land Development Plan, the notification period is 90 days. If a longer notification period is provided by other statute, regulation, or ordinance, the applicant will be so notified by the Municipality. If the Municipality disapproves the SWM Plan, the Municipality shall cite the reasons for disapproval in writing.

Section 404. Modification of Plans

A modification to a submitted SWM Site Plan that involves a change in SWM BMPs or techniques, or that involves the relocation or redesign of SWM BMPs, or that is necessary because soil or other conditions are not as stated on the SWM Site Plan as determined by the Municipality, shall require a resubmission of the modified SWM Site Plan in accordance with this Article.

Section 405. Resubmission of Disapproved Storm Water Management Site Plans

A disapproved SWM Site Plan may be resubmitted, with the revisions addressing the Municipality's concerns, to the Municipality in accordance with this Article. The applicable review fee must accompany a resubmission of a disapproved SWM Site Plan.

Section 406. Authorization to Construct and Term of Validity

The Municipality's approval of an SWM Site Plan authorizes the Regulated Activities contained in the SWM Site Plan for a maximum term of validity of five years following the date of approval. The Municipality may specify a term of validity shorter than five years in the approval for any specific SWM Site Plan. Terms of validity shall commence on the date the Municipality signs the approval for an SWM Site Plan. If an approved SWM Site Plan is not completed according to Section 407 within the term of validity, then the Municipality may consider the SWM Site Plan disapproved and

may revoke any and all permits. SWM Site Plans that are considered disapproved by the Municipality shall be resubmitted in accordance with Section 405 of this Ordinance.

Section 407. As-Built Plans, Completion Certificate and Final Inspection

- A. The Developer shall be responsible for providing as-built plans of all SWM BMPs included in the approved SWM Site Plan. The as-built plans and an explanation of any discrepancies with the construction plans shall be submitted to the Municipality.
- B. The as-built submission shall include a certification of completion signed by a Qualified Professional verifying that all permanent SWM BMPs have been constructed according to the approved plans and specifications. If any licensed Qualified Professionals contributed to the construction plans, then a licensed Qualified Professional must sign the completion certificate.
- C. After receipt of the completion certification by the Municipality, the Municipality may conduct a final inspection.

APPENDICES

RECOMMENDATION –

The following Appendices are recommended to be added as Appendices to the Stormwater Ordinance:

ORDINANCE APPENDIX A

**STORMWATER CONTROLS AND BEST MANAGEMENT PRACTICES
OPERATIONS AND MAINTENANCE AGREEMENT**

THIS AGREEMENT, made and entered into this _____ day of _____, 200__, by and between _____, (hereinafter the “Landowner”), and _____, _____ County, Pennsylvania, (hereinafter “Municipality”);

WITNESSETH

WHEREAS, the Landowner is the owner of certain real property as recorded by deed in the land records of _____ County, Pennsylvania, Deed Book _____ at Page _____, (hereinafter “Property”).

WHEREAS, the Landowner is proceeding to build and develop the Property; and

WHEREAS, the Stormwater Controls and BMP Operations and Maintenance Plan approved by the Municipality (hereinafter referred to as the “Plan”) for the property identified herein, which is attached hereto as Appendix A and made part hereof, as approved by the Municipality, provides for management of stormwater within the confines of the Property through the use of Best Management Practices (BMPs); and

WHEREAS, the Municipality, and the Landowner, his successors and assigns, agree that the health, safety, and welfare of the residents of the Municipality and the protection and maintenance of water quality require that on-site stormwater Best Management Practices be constructed and maintained on the Property; and

WHEREAS, for the purposes of this agreement, the following definitions shall apply:

BMP – “Best Management Practice;” activities, facilities, designs, measures or procedures used to manage stormwater impacts from land development, to protect and maintain water quality and groundwater recharge and to otherwise meet the purposes of the Municipal Stormwater Management Ordinance, including but not limited to infiltration trenches, seepage pits, filter strips, bioretention, wet ponds, permeable paving, rain gardens, grassed swales, forested buffers, sand filters and detention basins.

Infiltration Trench – A BMP surface structure designed, constructed, and maintained for the purpose of providing infiltration or recharge of stormwater into the soil and/or groundwater aquifer,

Seepage Pit – An underground BMP structure designed, constructed, and maintained for the purpose of providing infiltration or recharge of stormwater into the soil and/or groundwater aquifer,

Rain Garden – A BMP overlain with appropriate mulch and suitable vegetation designed, constructed, and maintained for the purpose of providing infiltration or recharge of stormwater into the soil and/or underground aquifer, and

WHEREAS, the Municipality requires, through the implementation of the Plan, that stormwater management BMPs as required by said Plan and the Municipal Stormwater Management Ordinance be constructed and adequately operated and maintained by the Landowner, his successors and assigns. and

NOW, THEREFORE, in consideration of the foregoing promises, the mutual covenants contained herein, and the following terms and conditions, the parties hereto agree as follows:

1. The BMPs shall be constructed by the Landowner in accordance with the plans and specifications identified in the Plan.
2. The Landowner shall operate and maintain the BMP(s) as shown on the Plan in good working order acceptable to the Municipality and in accordance with the specific maintenance requirements noted on the Plan.
3. The Landowner hereby grants permission to the Municipality, its authorized agents and employees, to enter upon the property, at reasonable times and upon presentation of proper identification, to inspect the BMP(s) whenever it deems necessary. Whenever possible, the Municipality shall notify the Landowner prior to entering the property.
4. In the event the Landowner fails to operate and maintain the BMP(s) as shown on the Plan in good working order acceptable to the Municipality, the Municipality or its representatives may enter upon the Property and take whatever action is deemed necessary to maintain said BMP(s). This provision shall not be construed to allow the Municipality to erect any permanent structure on the land of the Landowner. It is expressly understood and agreed that the Municipality is under no obligation to maintain or repair said facilities, and in no event shall this Agreement be construed to impose any such obligation on the Municipality.
5. In the event the Municipality, pursuant to this Agreement, performs work of any nature, or expends any funds in performance of said work for labor, use of equipment, supplies, materials, and the like, the Landowner shall reimburse the Municipality for all expenses (direct and indirect) incurred within 10 days of receipt of invoice from the Municipality.
6. The intent and purpose of this Agreement is to ensure the proper maintenance of the onsite BMP(s) by the Landowner; provided, however, that this Agreement shall not be deemed to create or effect any additional liability of any party for damage alleged to result from or be caused by stormwater runoff.

7. The Landowner, its executors, administrators, assigns, and other successors in interests, shall release the Municipality's employees and designated representatives from all damages, accidents, casualties, occurrences or claims which might arise or be asserted against said employees and representatives from the construction, presence, existence, or maintenance of the BMP(s) by the Landowner or Municipality. In the event that a claim is asserted against the Municipality, its designated representatives or employees, the Municipality shall promptly notify the Landowner and the Landowner shall defend, at his own expense, any suit based on the claim. If any judgment or claims against the Municipality's employees or designated representatives shall be allowed, the Landowner shall pay all costs and expenses regarding said judgment or claim.
8. The Municipality shall inspect the BMP(s) at a minimum of once every three years to ensure their continued functioning.

This Agreement shall be recorded at the Office of the Recorder of Deeds of _____ County, Pennsylvania, and shall constitute a covenant running with the Property and/or equitable servitude, and shall be binding on the Landowner, his administrators, executors, assigns, heirs and any other successors in interests, in perpetuity.

ATTEST:

WITNESS the following signatures and seals:

(SEAL)

For the Municipality:

(SEAL)

For the Landowner:

ATTEST:

_____ (City, Borough, Township)

County of _____, Pennsylvania

I, _____, a Notary Public in and for the County and State aforesaid, whose commission expires on the _____ day of _____, 20__, do hereby certify that _____ whose name(s) is/are signed to the

foregoing Agreement bearing date of the _____ day of _____, 20__, has
acknowledged the same before me in my said County and State.

GIVEN UNDER MY HAND THIS _____ day of _____, 200_.

NOTARY PUBLIC

(SEAL)

ORDINANCE APPENDIX B-I

SAMPLE DRAINAGE PLAN APPLICATION AND FEE SCHEDULE

(To be attached to the "land subdivision plan or development plan review application or "minor land subdivision plan review application")

Application is hereby made for review of the Stormwater Management and Erosion and Sedimentation Control Plan and related data as submitted herewith in accordance with the _____
_____ Township Stormwater Management and Earth Disturbance Ordinance.

_____ Final Plan _____ Preliminary Plan _____ Sketch Plan

Date of Submission _____ Submission No. _____

1. Name of subdivision or development _____

2. Name of applicant _____ Telephone No. _____

(if corporation, list the corporation's name and the names of two officers of the corporation)

_____ Officer 1

_____ Officer 2

Address _____

Zip _____

Applicants interest in subdivision or development

(if other than property owner give owners name and address)

3. Name of property owner _____ Telephone No. _____

Address _____

Zip _____

4. Name of engineer or surveyor _____ Telephone No. _____

Address _____

Zip _____

5. Type of subdivision or development proposed:

____ Single-Family Lots ____ Townhouses ____ Commercial (Multi-Lot)
____ Two Family Lots ____ Garden Apartments ____ Commercial (One-Lot)
____ Multi-Family Lots ____ Mobile-Home Park ____ Industrial (Multi-Lot)
____ Cluster Type Lots ____ Campground ____ Industrial (One-Lot)
____ Planned Residential ____ Other (_____
Development

6. Lineal feet of new road proposed? _____ L.F.

7. Area of proposed and existing impervious area on entire tract.

a. Existing (to remain) _____ S.F. _____ % of Property
b. Proposed _____ S.F. _____ % of Property

8. Stormwater

a. Does the peak rate of runoff from proposed conditions exceed that flow which occurred for existing conditions for the designated design storm? _____

b. Design storm utilized (on-site conveyance systems) (24 hr.) _____

No. of Subarea _____

Watershed Name _____

Explain: _____

c. Does the submission and/or district meet the release rate criteria for the applicable subarea? _____

d. Number of subarea(s) from Ordinance Appendix D of the Stonycreek River Watershed Stormwater Management Plan Update. _____

e. Type of proposed runoff control _____

f. Does the proposed stormwater control criteria meet the requirement/guidelines of the Stormwater Ordinances? _____

If not, what variances/waivers are requested? _____

Reasons _____

g. Does the plan meet the requirements of Article iii of the Stormwater Ordinances? _____

If not, what variances/waivers are requested? _____

Reasons Why _____

h. Was TR-55, June 1986 utilized in determining the time of concentration? _____

i. What hydrologic method was used in the stormwater computations? _____

j. Is a hydraulic routing through the stormwater control structure submitted? _____

k. Is a construction schedule or staging attached? _____

l. Is a recommended maintenance program attached? _____

9. Erosion and Sediment Pollution Control (E&S):

a. Has the stormwater management and E&S plan, supporting documentation and narrative been submitted to the [County Name] County Conservation District? _____

b. Total area of earth disturbance _____ S.F.

10. Wetlands

a. Have the wetlands been delineated by someone trained in wetland delineation? _____

b. Have the wetland lines been verified by a state or federal permitting authority? _____

c. Have the wetland lines been surveyed? _____

d. Total acreage of wetland within the property _____

e. Total acreage of wetland disturbed _____

f. Supporting documentation _____

11. Filing

a. Has the required fee been submitted? _____
Amount _____

b. Has the proposed schedule of construction inspection to be performed by the applicant's engineer been submitted? _____

c. Name of individual who will be making the inspections _____

d. General comments about stormwater management at development _____

CERTIFICATE OF OWNERSHIP AND ACKNOWLEDGMENT OF APPLICATION:

COMMONWEALTH OF PENNSYLVANIA

COUNTY OF [County Name] .

On this the _____ day of _____, 20____, before me, the undersigned officer, personally appeared _____ who being duly sworn, according to law, deposes and says that owners of the property described in this application and that the application was made with knowledge and/or direction and does hereby agree with the said application and to the submission of the same.

_____ Property Owner

My Commission Expires _____ 20_____

Notary Public _____

THE UNDERSIGNED HEREBY CERTIFIES THAT TO THE BEST OF HIS KNOWLEDGE AND BELIEF THE INFORMATION AND STATEMENTS GIVEN ABOVE ARE TRUE AND CORRECT.

SIGNATURE OF APPLICANT _____



(Information Below This Line To Be Completed By The Municipality)

_____ Township official submission receipt:

Date complete application received _____ Plan Number _____

Fees _____ date fees paid _____ received by _____

Official submission receipt date _____

Received by _____

Township

Drainage Plan
Proposed Schedule Of Fees

Subdivision name _____ Submittal No. _____

Owner _____ Date _____

Engineer _____

1. Filing fee \$ _____

2. Land use

2a. Subdivision, campgrounds, mobile home parks, and
multi-family dwelling where the units are located
in the same local watershed. \$ _____

2b. Multi-family dwelling where the designated open
space is located in a different local watershed from
the proposed units. \$ _____

2c. Commercial/industrial. \$ _____

3. Relative amount of earth disturbance

3a. Residential

road <500 l.f. \$ _____

road 500-2,640 l.f. \$ _____

road >2,640 l.f. \$ _____

3b. Commercial/industrial and other

impervious area <3,500 s.f. \$ _____

impervious area 3,500-43,460 s.f. \$ _____

impervious area >43,560 s.f. \$ _____

4. Relative size of project

4a. Total tract area <1 ac \$ _____

1-5 ac	\$ _____
5-25 ac	
25-100 ac	\$ _____
100-200 ac	\$ _____
>200 ac	\$ _____

5. Stormwater control measures

5a. Detention basins & other controls which require a review of hydraulic routings (\$ per control). \$ _____

5b. Other control facilities which require storage volume calculations but no hydraulic routings. (\$ per control) \$ _____

6. Site inspection (\$ per inspection) \$ _____

Total \$ _____

All subsequent reviews shall be 1/4 the amount of the initial review fee unless a new application is required as per Section 406 of the stormwater ordinance. A new fee shall be submitted with each revision in accordance with this schedule.

ORDINANCE APPENDIX B – 2

DRAINAGE PLAN CHECKLIST



Address:

-
-

Phone:

Fax:

Project: _____

Municipality: _____

Engineer: _____

Submittal No: _____

Date: _____

Project ID: _____ (for County use ONLY)

ARTICLE I: GENERAL PROVISIONS

- 1. Is the Proposed Project within the Lackawanna River Watershed? Yes No
- 2. Does the Proposed Project meet the definition of a "Regulated Activity"? Yes No

STOP – If you have checked NO for either of the above questions, you are not required to submit a Stormwater Management Plan under the Lackawanna River Watershed Stormwater Management Ordinance.

ARTICLE I: GENERAL PROVISIONS

Note: Parent Tract refers to the total parcel configuration on (DATE) and includes any subdivision of lands which may have occurred after than date.

Parent Tract Area: _____ acres

Total Existing Impervious Area (DATE) : _____ acres

Total New Impervious Area (all Phases): _____ acres

Parcel IS Exempt

Parcel IS NOT Exempt

ARTICLE III: STORMWATER MANAGMENT

1. Are any of the following Environmentally Sensitive areas identified on site?

- | | | | | | | |
|-------------------------------|--------------------------|-----|--------------------------|----|--------------------------|---------|
| Steep Slopes | <input type="checkbox"/> | Yes | <input type="checkbox"/> | No | <input type="checkbox"/> | Unknown |
| Ponds / Lakes / Vernal Pools | <input type="checkbox"/> | Yes | <input type="checkbox"/> | No | <input type="checkbox"/> | Unknown |
| Streams | <input type="checkbox"/> | Yes | <input type="checkbox"/> | No | <input type="checkbox"/> | Unknown |
| Wetlands | <input type="checkbox"/> | Yes | <input type="checkbox"/> | No | <input type="checkbox"/> | Unknown |
| Hydric Soils | <input type="checkbox"/> | Yes | <input type="checkbox"/> | No | <input type="checkbox"/> | Unknown |
| Flood plains | <input type="checkbox"/> | Yes | <input type="checkbox"/> | No | <input type="checkbox"/> | Unknown |
| Stream Buffer Zones | <input type="checkbox"/> | Yes | <input type="checkbox"/> | No | <input type="checkbox"/> | Unknown |
| Hydrologic Soil Groups A or B | <input type="checkbox"/> | Yes | <input type="checkbox"/> | No | <input type="checkbox"/> | Unknown |
| Recharge Areas | <input type="checkbox"/> | Yes | <input type="checkbox"/> | No | <input type="checkbox"/> | Unknown |
| Others: _____ | <input type="checkbox"/> | Yes | <input type="checkbox"/> | No | <input type="checkbox"/> | Unknown |

2. Does the site layout plan avoid Environmentally Sensitive Areas identified on site?

- Yes No, Explain _____

3. Has a stream buffer been established?

- Yes No, Explain _____

ARTICLE III: STORMWATER MANAGEMENT

1. Is the proposed activity considered a "Stormwater Hotspot"? Yes No

2. Have provisions been installed to promote groundwater recharge on site?

- Yes No, Explain _____

3. Total Recharge Volume Required: _____ cubic feet

4. How is the Required Recharge Volume being addressed?

- | | | | |
|--------------------------|---------------------|--------------------------|--------------|
| <input type="checkbox"/> | Infiltration Trench | <input type="checkbox"/> | Dry Swales |
| <input type="checkbox"/> | Infiltration Basin | <input type="checkbox"/> | Other: _____ |
| <input type="checkbox"/> | Bioretention | | |

ARTICLE III: STORMWATER MANAGEMENT

1. Have provisions been installed to address stormwater runoff water quality on site?

Yes No, Explain _____

2. Total Water Quality Volume Required: _____ acre feet

3. Is the site in a Special Protection watershed which includes Exceptional Value (EV) of High Quality (HQ) waters? Yes No

4. How is the Required Water Quality Volume being addressed?

- | | |
|---|---|
| <input type="checkbox"/> Wet Detention Basin | <input type="checkbox"/> Sand Filter |
| <input type="checkbox"/> Extended Dry Detention Basin | <input type="checkbox"/> Constructed Wetlands |
| <input type="checkbox"/> Bioretention | <input type="checkbox"/> Other: _____ |

ARTICLE III: STORMWATER MANAGMENT

1. Has the 2-year proposed conditions flow been reduced to the 1-year existing conditions flow?

Yes No, Explain _____

2. Does the proposed conditions 1-year storm drain over a minimum 24-hour period?

Yes No, Explain _____

ARTICLE III: STORMWATER MANAGEMENT

1. In which of the following Stormwater Management District(s) is the site located?

- | | |
|----------------------------|----------------------------|
| <input type="checkbox"/> A | <input type="checkbox"/> C |
| <input type="checkbox"/> B | |

2. Does the Proposed Conditions Runoff meet the Criteria established for the Management District?

Yes No, if you answered Yes proceed next page.

ARTICLE III: STORMWATER MANAGEMENT

1. Which method(s) are utilized in the site stormwater management plan for computing stormwater runoff rates and volumes?

- | | |
|--|--|
| <input type="checkbox"/> TR-20 | <input type="checkbox"/> PSRM |
| <input type="checkbox"/> TR-55 | <input type="checkbox"/> Rational Method |
| <input type="checkbox"/> HEC-1 / HEC-HMS | <input type="checkbox"/> Other: _____ |

2. Was NOAA Atlas 14 utilized in rainfall determination?

Yes No, Explain _____

3. Was Table E-2 (Runoff Curve Numbers) or Table E-3 in the Appendix E (Rational Runoff Coefficients) utilized in calculations for runoff?

Yes No, Explain _____

4. For any proposed stormwater detention facility, were the appropriate design storms routed through the facility using the Storage-Indication Method?

Yes No, Explain _____

ARTICLE III: STORMWATER MANAGEMENT

1. Is this project subject to PENNDOT approval?

Yes No

a. If "YES" have these plans been forwarded to PENNDOT for review?

Yes No, Explain _____

2. Are any proposed stormwater facilities subject to PADEP Chapter 105 permitting?

Yes No

a. If "YES" have these plans been forwarded to PADEP for review?

Yes No, Explain _____

ARTICLE VII: MAINTENANCE RESPONSIBILITIES

1. Has a Stormwater Control and BMP Operations and Maintenance Plan been approved by the Municipality?

Yes No, Explain _____

2. Who shall assume responsibility for implementing the Stormwater Control and BMP Operations and Maintenance Plan?

Municipality Homeowner Association
 Private Owner Other _____

ORDINANCE APPENDIX C

STORMWATER MANAGEMENT DISTRICT WATERSHED MAP

The Stormwater Management District Watershed Map developed for the 1994 Lackawanna River Stormwater Management Plan may remain as-is for use in the recommended update to the Plan. It is recommended that this map now be moved to Appendix C.

ORDINANCE APPENDIX D

LOW IMPACT DEVELOPMENT (LID) PRACTICES

ALTERNATIVE APPROACH FOR MANAGING STORMWATER RUNOFF

Natural hydrologic conditions may be altered radically by poorly planned development practices, such as introducing unneeded impervious surfaces, destroying existing drainage swales, constructing unnecessary storm sewers, and changing local topography. A traditional drainage approach of development has been to remove runoff from a site as quickly as possible and capture it in a detention basin. This approach leads ultimately to the degradation of water quality as well as expenditure of additional resources for detaining and managing concentrated runoff at some downstream location.

The recommended alternative approach is to promote practices that will minimize post-development runoff rates and volumes, which will minimize needs for artificial conveyance and storage facilities. To simulate pre-development hydrologic conditions, forced infiltration is often necessary to offset the loss of infiltration by creation of impervious surfaces. The ability of the ground to infiltrate depends upon the soil types and its conditions.

Preserving natural hydrologic conditions requires careful alternative site design considerations. Site design practices include preserving natural drainage features, minimizing impervious surface area, reducing the hydraulic connectivity of impervious surfaces, and protecting natural depression storage. A well-designed site will contain a mix of all those features. The following describes various techniques to achieve the alternative approach:

Preserving Natural Drainage Features. Protecting natural drainage features, particularly vegetated drainage swales and channels, is desirable because of their ability to infiltrate and attenuate flows and to filter pollutants. However, this objective is often not accomplished in land development. In fact, commonly held drainage philosophy encourages just the opposite pattern -- streets and adjacent storm sewers typically are located in the natural headwater valleys and swales, thereby replacing natural drainage functions with a completely impervious system. As a result, runoff and pollutants generated from impervious surfaces flow directly into storm sewers with no opportunity for attenuation, infiltration, or filtration. Developments designed to fit site topography also minimizes the amount of grading on site.

Protecting Natural Depression Storage Areas. Depressional storage areas have no surface outlet, or drain very slowly following a storm event. They can be commonly seen as ponded areas in farm fields during the wet season or after large runoff events. Traditional development practices eliminate these depressions by filling or draining, thereby obliterating their ability to reduce surface

runoff volumes and trap pollutants. The volume and release-rate characteristics of depressions should be protected in the design of the development site. The depressions can be protected by simply avoiding the depression or by incorporating its storage as additional capacity in required detention facilities.

Avoiding introduction of impervious areas. Careful site planning should consider reducing impervious coverage to the maximum extent possible. Building footprints, sidewalks, driveways and other features producing impervious surfaces should be evaluated to minimize impacts on runoff.

Reducing the Hydraulic Connectivity of Impervious Surfaces. Impervious surfaces are significantly less of a problem if they are not directly connected to an impervious conveyance system (such as storm sewer). Two basic ways to reduce hydraulic connectivity are routing of roof runoff over lawns and reducing the use of storm sewers. Site grading should promote increasing travel time of stormwater runoff, and should help reduce concentration of runoff to a single point in the development.

Routing Roof Runoff Over Lawns. Roof runoff can be easily routed over lawns in most site designs. The practice discourages direct connections of downspouts to storm sewers or parking lots. The practice also discourages sloping driveways and parking lots to the street. By routing roof drains and crowning the driveway to run off to the lawn, the lawn is essentially used as a filter strip.

Reducing the Use of Storm Sewers. By reducing use of storm sewers for draining streets, parking lots, and back yards, the potential for accelerating runoff from the development can be greatly reduced. The practice requires greater use of swales and may not be practical for some development sites, especially if there are concerns for areas that do not drain in a “reasonable” time. The practice requires educating local citizens and public works officials, who expect runoff to disappear shortly after a rainfall event.

Reducing Street Widths. Street widths can be reduced by either eliminating on-street parking or by reducing roadway widths. Municipal planners and traffic designers should encourage narrower neighborhood streets which ultimately could lower maintenance.

Limiting Sidewalks to One Side of the Street. A sidewalk on one side of the street may suffice in low-traffic neighborhoods. The lost sidewalk could be replaced with bicycle/recreational trails that follow back-of-lot lines. Where appropriate, backyard trails should be constructed using pervious materials.

Using Permeable Paving Materials. These materials include permeable interlocking concrete paving blocks or porous bituminous concrete. Such materials should be considered as alternatives to conventional

pavement surfaces, especially for low use surfaces such as driveways, overflow parking lots, and emergency access roads.

Reducing Building Setbacks. Reducing building setbacks reduces driveway and entry walks and is most readily accomplished along low-traffic streets where traffic noise is not a problem.

Constructing Cluster Developments. Cluster developments can also reduce the amount of impervious area for a given number of lots. The biggest savings is in street length, which also will reduce costs of the development. Cluster development clusters the construction activity onto less-sensitive areas without substantially affecting the gross density of development.

In summary, a careful consideration of the existing topography and implementation of a combination of the above mentioned techniques may avoid construction of costly stormwater control measures. Other benefits include reduced potential of downstream flooding, water quality degradation of receiving streams/water bodies and enhancement of aesthetics and reduction of development costs. Beneficial results include more stable baseflows in receiving streams, improved groundwater recharge, reduced flood flows, reduced pollutant loads, and reduced costs for conveyance and storage.

ORDINANCE APPENDIX E

STORMWATER MANAGEMENT DESIGN CRITERIA

TABLE E-1

RUNOFF CURVE NUMBERS

Source: NRCS (SCS) TR-55

TABLE E-2

RATIONAL RUNOFF COEFFICIENTS

TABLE E-3

MANNING ROUGHNESS COEFFICIENTS

TABLE E-4

NONSTRUCTURAL STORMWATER MANAGEMENT MEASURES

TABLE E-1
Runoff Curve Numbers
(From NRCS (SCS) TR-55)

LAND USE DESCRIPTION		HYDROLOGIC SOIL GROUP			
		A	B	C	D
Open Space		44	65	77	82
Meadow / Orchard		30	58	71	78
Agricultural		59	71	79	83
Forest		36	60	73	79
Commercial	(85% Impervious)	89	92	94	95
Industrial	(72% Impervious)	81	88	91	93
Institutional (50% Impervious)		71	82	88	90
Residential					
Average Lot Size	% impervious				
1/8 acre or less*	65	77	85	90	92

1/8 - 1/3 acre	34	59	74	82	87
1/3 - 1 acre	23	53	69	80	85
1 - 4 acres	12	46	66	78	82
Farmstead		59	74	82	86
Smooth Surfaces (Concrete, Asphalt, Gravel or Bare Compacted Soil)		98	98	98	98
Water		98	98	98	98
Mining/Newly Graded Areas (Pervious Areas Only)		77	86	91	94

* Includes Multi-Family Housing unless justified lower density can be provided.

Note: Existing site conditions of bare earth or fallow ground shall be considered as meadow when choosing a CN value.

TABLE E-2

RATIONAL RUNOFF COEFFICIENTS

By Hydrologic Soils Group and Overland Slope (%)

Land Use	A			B			C			D		
	0-2%	2-6%	6%+	0-2%	2-6%	6%+	0-2%	2-6%	6%+	0-2%	2-6%	6%+
Cultivated Land	0.08 ^a	0.13	0.16	0.11	0.15	0.21	0.14	0.19	0.26	0.18	0.23	0.31
	0.14 ^b	0.18	0.22	0.16	0.21	0.28	0.20	0.25	0.34	0.24	0.29	0.41
Pasture	0.12	0.20	0.30	0.18	0.28	0.37	0.24	0.34	0.44	0.30	0.40	0.50
	0.15	0.25	0.37	0.23	0.34	0.45	0.30	0.42	0.52	0.37	0.50	0.62
Meadow	0.10	0.16	0.25	0.14	0.22	0.30	0.20	0.28	0.36	0.24	0.30	0.40
	0.14	0.22	0.30	0.20	0.28	0.37	0.26	0.35	0.44	0.30	0.40	0.50
Forest	0.05	0.08	0.11	0.08	0.11	0.14	0.10	0.13	0.16	0.12	0.16	0.20
	0.08	0.11	0.14	0.10	0.14	0.18	0.12	0.16	0.20	0.15	0.20	0.25
Residential												
Lot Size 1/8 Acre	0.25	0.28	0.31	0.27	0.30	0.25	0.30	0.33	0.38	0.33	0.36	0.42
	0.33	0.37	0.40	0.35	0.39	0.44	0.38	0.42	0.49	0.41	0.45	0.54
Lot Size 1/4 Acre	0.22	0.26	0.29	0.24	0.29	0.33	0.27	0.31	0.36	0.30	0.34	0.40
	0.30	0.34	0.37	0.33	0.37	0.42	0.36	0.40	0.47	0.38	0.42	0.52
Lot Size 1/3 Acre	0.19	0.23	0.26	0.22	0.26	0.30	0.25	0.29	0.34	0.28	0.32	0.39
	0.28	0.32	0.35	0.30	0.35	0.39	0.33	0.38	0.45	0.36	0.40	0.50
Lot Size 1/2 Acre	0.16	0.20	0.24	0.19	0.23	0.28	0.22	0.27	0.32	0.26	0.30	0.37
	0.25	0.29	0.32	0.28	0.32	0.36	0.31	0.35	0.42	0.34	0.38	0.48
Lot Size 1 Acre	0.14	0.19	0.22	0.17	0.21	0.26	0.20	0.25	0.31	0.24	0.29	0.35
	0.22	0.26	0.29	0.24	0.28	0.34	0.28	0.32	0.40	0.31	0.35	0.46
Industrial	0.67	0.68	0.68	0.68	0.68	0.69	0.68	0.69	0.69	0.69	0.69	0.70
	0.85	0.85	0.86	0.85	0.86	0.86	0.86	0.86	0.87	0.86	0.86	0.88
Commercial	0.71	0.71	0.72	0.71	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72
	0.88	0.88	0.89	0.89	0.89	0.89	0.89	0.89	0.90	0.89	0.89	0.90
Streets	0.70	0.71	0.71	0.71	0.72	0.74	0.72	0.73	0.76	0.73	0.75	0.78
	0.76	0.77	0.79	0.80	0.82	0.84	0.84	0.85	0.89	0.89	0.91	0.95
Open Space	0.05	0.10	0.14	0.08	0.13	0.19	0.12	0.17	0.24	0.16	0.21	0.28
	0.11	0.16	0.20	0.14	0.19	0.26	0.18	0.23	0.32	0.22	0.27	0.39
Parking	0.85	0.86	0.87	0.85	0.86	0.87	0.85	0.86	0.87	0.85	0.86	0.87
	0.95	0.96	0.97	0.95	0.96	0.97	0.95	0.96	0.97	0.95	0.96	0.97

^a Runoff coefficients for storm recurrence intervals less than 25 years.

^b Runoff coefficients for storm recurrence intervals of 25 years or more.

Source : Rawls, W.J., S.L. Wong and R.H. McCuen, 1981, "Comparison of Urban Flood Frequency Procedures", Preliminary Draft, U.S. Department of Agriculture, Soil Conservation Service, Baltimore, MD.

TABLE E-3

**Roughness Coefficients (Manning's "n") For Overland Flow
(U.S. Army Corps Of Engineers, HEC-1 Users Manual)**

Surface Description	n		
_____		-	
Dense Growth	0.4	-	0.5
Pasture	0.3	-	0.4
Lawns	0.2	-	0.3
Bluegrass Sod	0.2	-	0.5
Short Grass Prairie	0.1	-	0.2
Sparse Vegetation	0.05	-	0.13
Bare Clay-Loam Soil (eroded)	0.01	-	0.03
Concrete/Asphalt			
very shallow depths			
(less than 1/4 inch)	0.10	-	0.15
small depths			
(1/4 inch to several inches)	0.05	-	0.10

Roughness Coefficients (Manning's "n") For Channel Flow

Reach Description**n**

Natural stream, clean, straight, no rifts or pools	0.03
Natural stream, clean, winding, some pools or shoals	0.04
Natural stream, winding, pools, shoals, stony with some weeds	0.05
Natural stream, sluggish deep pools and weeds	0.07
Natural stream or swale, very weedy or with timber underbrush	0.10
Concrete pipe, culvert or channel	0.012
Corrugated metal pipe	0.012-0.027 ⁽¹⁾
High Density Polyethylene (HDPE) Pipe	
Corrugated	0.021-0.029 ⁽²⁾
Smooth Lined	0.012-0.020 ⁽²⁾

(1) Depending upon type, coating and diameter

(2) Values recommended by the American Concrete Pipe Association, check Manufacturer's recommended value.

TABLE E-4

NONSTRUCTURAL STORMWATER MANAGEMENT MEASURES

Nonstructural Stormwater Measure	Description
Natural Area Conservation	Conservation of natural areas such as forest, wetlands, or other sensitive areas in a protected easement, thereby retaining their existing hydrologic and water quality characteristics.
Disconnection of Rooftop Runoff	Rooftop runoff is disconnected and then directed over a pervious area where it may either infiltrate into the soil or filter over it. This is typically obtained by grading the site to promote overland flow or by providing bioretention on single-family residential lots.
Disconnection of Nonrooftop Runoff	Disconnect surface impervious cover by directing it to pervious areas where it is either infiltrated or filtered through the soil.
Buffers	Buffers effectively treat stormwater runoff. Effective treatment constitutes capturing runoff from pervious and impervious areas adjacent to the buffer and treating the runoff through overland flow across a grassy or forested area.
Grass Channel (Open Section Roads)	Open grass channels are used to reduce the volume of runoff and pollutants during smaller storms.
Environmentally Sensitive Rural Development	Environmental site design techniques are applied to low-density or rural residential development.

Source: Maryland Department of the Environment, "Maryland Stormwater Design Manual," Baltimore, MD, 2000

ORDINANCE APPENDIX G

BMP MANUAL REFERENCES

California

California Stormwater BMP Handbook: New Development and Redevelopment (January 2003) – separate file available at <http://www.cabmphandbooks.org/Development.asp>

Georgia

Georgia Stormwater Management Manual Volume 2: Technical Handbook (August 2001) separate file (<http://www.georgiastormwater.com/>)

Maryland

2000 Maryland Stormwater Design Manual –
http://www.mde.state.md.us/Programs/Waterprograms/SedimentandStormwater/stormwater_design/index.asp

Massachusetts

Stormwater Management, Volume Two: Stormwater Technical Handbook (Massachusetts, 1997) – separate file available at <http://www.state.ma.us/dep/brp/stormwtr/stormpub.htm>

Minnesota

Minnesota Urban Small Sites BMP Manual: Stormwater Best Management Practices for Cold Climates (July 2001) – <http://www.metrocouncil.org/environment/Watershed/BMP/manual.htm>

New Jersey

Revised Manual for New Jersey: Best Management Practices for Control of Non-point Source Pollution from Stormwater (Fifth Draft May 2000) –
<http://www.state.nj.us/dep/watershedmgt/bmpmanual.htm>

New York

New York State Stormwater Management Design Manual (2001) –
<http://www.dec.state.ny.us/website/dow/swmanual/swmanual.html>

Pennsylvania

PA DEP Stormwater Best Management Practices Manual, December, 2006.

<http://164.156.71.80/WXOD.aspx?fs=2087d8407c0e00008000071900000719&ft=1>

Washington

Stormwater Management Manual for Western Washington (August 2001) –

<http://www.ecy.wa.gov/programs/wq/stormwater/manual.html>

Federal

Stormwater Best Management Practices in an Ultra-Urban Setting: Selection and Monitoring (FHWA) –

<http://www.fhwa.dot.gov/environment/ultraurb/3fs1.htm>

USEPA Infiltration Trench Fact Sheet (September 1999) –

<http://cfpub.epa.gov/npdes/stormwater/menuofbmps/post.cfm>

Appendix Two

DEP Model Stormwater Management Ordinance

DEPARTMENT OF ENVIRONMENTAL PROTECTION
Bureau of Watershed Management

DOCUMENT NUMBER: 363-0300-003

TITLE: Pennsylvania Model Stormwater Management Ordinance

EFFECTIVE DATE: Upon final publication in the *Pennsylvania Bulletin*.

AUTHORITY: Stormwater Management Act, October 4, 1978, P.L. 864 (Act 167), 32 P.S. Section 680.1, et. seq., as amended.

POLICY: The Department of Environmental Protection, with assistance from others, recommends use of this model ordinance. Counties should use this ordinance as a template for preparing municipal stormwater management ordinances when preparing Act 167 stormwater management plans. Municipalities without an otherwise suitable stormwater management ordinance should adapt and enact this model ordinance to meet National Pollutant Discharge Elimination System (NPDES) Municipal Separate Storm Sewer System (MS4) permitting requirements. Other municipalities may adapt and enact this ordinance.

PURPOSE: The purposes of this ordinance are: to provide a template for developing municipal stormwater management ordinances in watershed stormwater management plans prepared under the Pennsylvania Storm Water Management Act (1978 Act 167); to be the model ordinance for enactment or amendment of ordinances by municipalities designated as urbanized under the federal NPDES Phase II rule (i.e. MS4 Municipalities); and to provide a template for any other municipality engaged in preparation and enactment or amendment of a stormwater management ordinance. Enactment of the Model Ordinance establishes municipal authority to administer, regulate, and enforce proper implementation and maintenance of stormwater management Best Management Practices (BMPs) and design standards such as the ones presented in the *Pennsylvania Stormwater Best Management Practices Manual* No. 363-0300-002. This Model Ordinance combines and supersedes previous model municipal ordinances for stormwater management published by DEP in documents 392-0300-001 and 392-0300-003.

APPLICABILITY: This document applies to any person, county or municipality involved with the Storm Water Management Act, the Stormwater Planning and Management Program, or the NPDES MS4 Permitting Program.

DISCLAIMER: The policies and procedures outlined in this guidance are intended to supplement existing requirements. Nothing in the policies or procedures shall affect regulatory or statutory requirements.

The policies and procedures herein are not an adjudication or a regulation. There is no intent on the part of DEP to give the rules in these policies that weight or deference. This document establishes the framework within which DEP will exercise its administrative discretion in the future. DEP reserves the discretion to deviate from this policy statement if circumstances warrant.

PAGE LENGTH: 33 Pages

LOCATION: Volume 34, Tab 25

**INSTRUCTIONS FOR MUNICIPALITIES IMPLEMENTING A
STORMWATER ORDINANCE WITHOUT A
STORMWATER MANAGEMENT PLAN PURSUANT TO 1978 ACT 167**

When the Model Stormwater Management Ordinance is implemented other than through an approved Act 167 Storm Water Management Plan, the following suggestions apply:

- A. Section 104, Statutory Authority. The secondary authority should be cited as the authority for implementing the ordinance requirements. The primary authority is not applicable and should be deleted. In addition, this section should cite the applicable municipal class code for enforcement purposes.
- B. Article II - Definitions
 - Municipality. Insert municipal name and county, as indicated.
 - Stormwater Management Plan. Delete, definition not applicable.
- C. Article III - Stormwater Management Standards should be used as an example of performance standards that will help the municipality to: properly manage stormwater runoff, meet state water quality requirements, meet state and federal anti-degradation requirements, improve impaired waters, meet Total Maximum Daily Loads (TMDL's), and meet state water quality requirements for special protection designated watersheds. In Section 302, Exemptions, the blanks labeled "x" and "y" must be replaced by numerical values. Values from 250 to 1,000 are suggested for "x", and values from 1,000 to 5,000 are suggested for "y".
- D. The municipal solicitor should review Article VIII-Enforcement and Penalties, and make any additions necessary to ensure effective enforcement is provided commensurate with the applicable municipal code.
- E. The municipality may revise other articles or sections of this ordinance as it deems appropriate; however, enacting a modified version of this ordinance will make a municipality ineligible for the NPDES general permit (PAG-13) for stormwater discharges from small MS4s.

**INSTRUCTIONS FOR MUNICIPALITIES IMPLEMENTING
STORMWATER PLANS PURSUANT TO 1978 ACT 167**

When the Model Stormwater Management Ordinance is enacted as part of the implementation of an approved Act 167 Stormwater Management Plan, the following suggestions apply:

- A. The municipal solicitor should review Article VIII - Enforcement and Penalties, and make any additions as necessary to ensure that effective enforcement can be provided commensurate with the applicable municipal code.

(This page intentionally left blank)

STORMWATER MANAGEMENT ORDINANCE

ORDINANCE NO. _____

MUNICIPALITY OF

_____ COUNTY, PENNSYLVANIA

Adopted at a Public Meeting Held on

_____, 20__

Article I - General Provisions

Section 101.	Short Title
Section 102.	Statement of Findings
Section 103.	Purpose
Section 104.	Statutory Authority
Section 105.	Applicability
Section 106.	Repealer
Section 107.	Severability
Section 108.	Compatibility with Other Requirements

Article II - Definitions

Article III - Stormwater Management Standards

Section 301.	General Requirements
Section 302.	Exemptions
Section 303.	Volume Controls
Section 304.	Rate Controls

Article IV - Stormwater Management (SWM) Site Plan Requirements

Section 401.	Plan Contents
Section 402.	Plan Submission
Section 403.	Plan Review
Section 404.	Modification of Plans
Section 405.	Resubmission of Disapproved Stormwater Management Site Plans
Section 406.	Authorization to Construct and Term of Validity
Section 407.	As-Built Plans, Completion Certificate and Final Inspection

Article V - Operation and Maintenance

Section 501.	Responsibilities of Developers and Landowners
Section 502.	Operation and Maintenance Agreements

Article VI - Fees and Expenses

Section 601.	General
--------------	---------

Article VII - Prohibitions

Section 701.	Prohibited Discharges and Connections
Section 702.	Roof Drains
Section 703.	Alteration of SWM BMPs

Article VIII - Enforcement and Penalties

Section 801.	Right-of-Entry
Section 802.	Inspection

Section 803.	Enforcement
Section 804.	Suspension and Revocation
Section 805.	Penalties
Section 806.	Appeals

Article IX - References

Appendix A:	Operation and Maintenance Agreement
Appendix B:	Disconnected Impervious Area (DIA)

ARTICLE I - GENERAL PROVISIONS

Section 101. Short Title

This Ordinance shall be known and may be cited as the “(Name of municipality and watershed plan, if applicable) Stormwater Management Ordinance.”

Section 102. Statement of Findings

The governing body of the Municipality finds that:

- A. Inadequate management of accelerated runoff of stormwater resulting from development throughout a watershed increases flows and velocities, contributes to erosion and sedimentation, overtaxes the carrying capacity of streams and storm sewers, greatly increases the cost of public facilities to carry and control stormwater, undermines flood plain management and flood control efforts in downstream communities, reduces groundwater recharge, threatens public health and safety, and increases non-point source pollution of water resources.
- B. A comprehensive program of stormwater management, including reasonable regulation of development and activities causing accelerated runoff, is fundamental to the public health, safety and welfare and the protection of people of the Commonwealth, their resources and the environment.
- C. Stormwater is an important water resource, which provides groundwater recharge for water supplies and base flow of streams, which also protects and maintains surface water quality.
- D. Federal and state regulations require certain municipalities to implement a program of stormwater controls. These municipalities are required to obtain a permit for stormwater discharges from their separate storm sewer systems under the NPDES.

Section 103. Purpose

The purpose of this Ordinance is to promote health, safety, and welfare within the Municipality and its watershed by minimizing the harms and maximizing the benefits described in Section 102 of this Ordinance, through provisions designed to:

- A. Meet legal water quality requirements under state law, including regulations at 25 Pa. Code Chapter 93 to protect, maintain, reclaim and restore the existing and designated uses of the waters of this Commonwealth.
- B. Conserve the natural drainage systems as much as possible.
- C. Manage stormwater runoff close to the source.
- D. Provide procedures and performance standards for stormwater planning and management.
- E. Maintain groundwater recharge, to prevent degradation of surface and groundwater quality and to otherwise protect water resources.

- F. Prevent scour and erosion of stream banks and streambeds.
- G. Provide proper operation and maintenance of all permanent Stormwater Management (SWM) Best Management Practices (BMPs) that are implemented within the Municipality.
- H. Provide standards to meet NPDES permit requirements.

Section 104. Statutory Authority

A. Primary Authority:

The municipality is empowered to regulate these activities by the authority of the Act of October 4, 1978, P.L. 864 (Act 167), 32 P.S. Section 680.1, et seq., as amended, the “Storm Water Management Act” and the (appropriate municipal code).

B. Secondary Authority:

The Municipality also is empowered to regulate land use activities that affect runoff by the authority of the Act of July 31, 1968, P.L. 805, No. 247, The Pennsylvania Municipalities Planning Code, as amended.

Section 105. Applicability

All Regulated Activities and all activities that may affect stormwater runoff, including Land Development and Earth Disturbance Activity, are subject to regulation by this Ordinance.

Section 106. Repealer

Any other ordinance provision(s) or regulation of the Municipality inconsistent with any of the provisions of this Ordinance is hereby repealed to the extent of the inconsistency only.

Section 107. Severability

In the event that a court of competent jurisdiction declares any section or provision of this Ordinance invalid, such decision shall not affect the validity of any of the remaining provisions of this Ordinance.

Section 108. Compatibility with Other Requirements

Approvals issued and actions taken under this Ordinance do not relieve the Applicant of the responsibility to secure required permits or approvals for activities regulated by any other code, law, regulation or ordinance.

ARTICLE II - DEFINITIONS

For the purposes of this Ordinance, certain terms and words used herein shall be interpreted as follows:

- A. Words used in the present tense include the future tense; the singular number includes the plural, and the plural number includes the singular; words of masculine gender include feminine gender; and words of feminine gender include masculine gender.
- B. The word “includes” or “including” shall not limit the term to the specific example but is intended to extend its meaning to all other instances of like kind and character.
- C. The words “shall” and “must” are mandatory; the words “may” and “should” are permissive.

Agricultural Activity - The work of producing crops including tillage, land clearing, plowing, disking, harrowing, planting, harvesting crops, or pasturing and raising of livestock and installation of conservation measures. Construction of new buildings or impervious area is not considered an Agricultural Activity.

Applicant - A landowner, developer or other person who has filed an application to the Municipality for approval to engage in any Regulated Activity at a project site in the Municipality.

Best Management Practice (BMP) - Activities, facilities, designs, measures or procedures used to manage stormwater impacts from Regulated Activities, to meet State Water Quality Requirements, to promote groundwater recharge and to otherwise meet the purposes of this Ordinance. Stormwater BMPs are commonly grouped into one of two broad categories or measures: “structural” or “non-structural”. In this ordinance, non-structural BMPs or measures refer to operational and/or behavior-related practices that attempt to minimize the contact of pollutants with stormwater runoff whereas structural BMPs or measures are those that consist of a physical device or practice that is installed to capture and treat stormwater runoff. Structural BMPs include, but are not limited to, a wide variety of practices and devices, from large-scale retention ponds and constructed wetlands, to small-scale underground treatment systems, infiltration facilities, filter strips, low impact design, bioretention, wet ponds, permeable paving, grassed swales, riparian or forested buffers, sand filters, detention basins, and manufactured devices. Structural Stormwater BMPs are permanent appurtenances to the project site.

Conservation District - A conservation district, as defined in section 3(c) of the Conservation District Law (3 P. S. § 851(c)), which has the authority under a delegation agreement executed with the Department to administer and enforce all or a portion of the erosion and sediment control program in this Commonwealth.

Design Storm - The magnitude and temporal distribution of precipitation from a storm event measured in probability of occurrence (e.g. a 5-year-storm) and duration (e.g. 24 hours), used in the design and evaluation of stormwater management systems. Also see Return Period.

Detention - The volume of runoff that is captured and released into the waters of this Commonwealth at a controlled rate.

DEP - The Pennsylvania Department of Environmental Protection.

Development Site (Site) - See Project Site.

Disconnected Impervious Area (DIA) - An impervious or impermeable surface which is disconnected from any stormwater drainage or conveyance system and is redirected or directed to a pervious area which allows for infiltration, filtration, and increased time of concentration as specified in Appendix B, Disconnected Impervious Area.

Disturbed Area - An unstabilized land area where an Earth Disturbance is occurring or has occurred.

Earth Disturbance Activity - A construction or other human activity which disturbs the surface of the land, including, but not limited to, clearing and grubbing; grading; excavations; embankments; road maintenance; building construction; the moving, depositing, stockpiling, or storing of soil, rock or earth materials.

Erosion - The natural process by which the surface of the land is worn away by water, wind or chemical action.

Existing Condition - The dominant land cover during the 5-year period immediately preceding a proposed Regulated Activity.

FEMA - Federal Emergency Management Agency.

Floodplain - Any land area susceptible to inundation by water from any natural source or delineated by applicable FEMA maps and studies as being a special flood hazard area. Included are lands adjoining a river or stream that have been or may be expected to be inundated by a 100-year flood. Also included are areas that comprise Group 13 Soils, as listed in Appendix A of the Pennsylvania DEP Technical Manual for Sewage Enforcement Officers (as amended or replaced from time to time by PADEP).

Floodway - The channel of the watercourse and those portions of the adjoining floodplains that are reasonably required to carry and discharge the 100-year flood. Unless otherwise specified, the boundary of the floodway is as indicated on maps and flood insurance studies provided by FEMA. In an area where no FEMA maps or studies have defined the boundary of the 100-year floodway, it is assumed -- absent evidence to the contrary -- that the floodway extends from the stream to 50 feet from the top of the bank of the stream.

Forest Management/Timber Operations - Planning and activities necessary for the management of forestland. These include conducting a timber inventory, preparation of forest management plans, silvicultural treatment, cutting budgets, logging road design and construction, timber harvesting, site preparation and reforestation.

Hydrologic Soil Group (HSG) - Infiltration rates of soils vary widely and are affected by subsurface permeability as well as surface intake rates. Soils are classified into four HSG's (A, B, C, and D) according to their minimum infiltration rate, which is obtained for bare soil after prolonged wetting. The NRCS defines the four groups and provides a list of most of the soils in the United States and their group classification. The soils in the area of the development site may be identified from a soil survey report that can be obtained from local NRCS offices or conservation district offices. Soils become less pervious as the HSG varies from A to D (NRCS ^{3,4}).

Impervious Surface (Impervious Area) - A surface that prevents the infiltration of water into the ground. Impervious surfaces (or areas) shall include, but not be limited to, roofs, additional indoor

living spaces, patios, garages, storage sheds and similar structures, and any new streets or sidewalks. Decks, parking areas, and driveway areas are not counted as impervious areas if they do not prevent infiltration.

Karst - A type of topography or landscape characterized by surface depressions, sinkholes, rock pinnacles/uneven bedrock surface, underground drainage and caves. Karst is formed on carbonate rocks, such as limestone or dolomite.

Land Development (Development) - Inclusive of any or all of the following meanings: (i) the improvement of one lot or two or more contiguous lots, tracts, or parcels of land for any purpose involving (a) a group of two or more buildings, or (b) the division or allocation of land or space between or among two or more existing or prospective occupants by means of, or for the purpose of streets, common areas, leaseholds, condominiums, building groups, or other features; (ii) any subdivision of land; (iii) development in accordance with Section 503(1.1) of the PA Municipalities Planning Code.

Municipality - (municipality name), (county name) County, Pennsylvania.

NRCS - USDA Natural Resources Conservation Service (previously SCS).

Peak Discharge - The maximum rate of stormwater runoff from a specific storm event.

Pervious Area - Any area not defined as impervious.

Project Site - The specific area of land where any Regulated Activities in the Municipality are planned, conducted or maintained.

Qualified Professional - Any person licensed by the Pennsylvania Department of State or otherwise qualified by law to perform the work required by the Ordinance.

Regulated Activities - Any Earth Disturbances Activities or any activities that involve the alteration or development of land in a manner that may affect stormwater runoff.

Regulated Earth Disturbance Activity - Activity involving Earth Disturbance subject to regulation under 25 Pa. Code Chapters 92, Chapter 102, or the Clean Streams Law.

Retention/Removed Runoff - The volume of runoff that is captured and not released directly into the surface waters of this Commonwealth during or after a storm event.

Return Period - The average interval, in years, within which a storm event of a given magnitude can be expected to occur one time. For example, the 25-year return period rainfall would be expected to occur on average once every 25 years. The probability of a 25-year storm occurring in any one year is 0.04 (i.e. a 4% chance).

Runoff - Any part of precipitation that flows over the land.

Sediment - Soils or other materials transported by surface water as a product of erosion.

State Water Quality Requirements - The regulatory requirements to protect, maintain, reclaim, and restore water quality under Pennsylvania Code Title 25 and the Clean Streams Law.

Stormwater - Drainage runoff from the surface of the land resulting from precipitation or snow or ice melt.

Stormwater Management Facility - Any structure, natural or man-made, that, due to its condition, design, or construction, conveys, stores, or otherwise affects stormwater runoff. Typical stormwater management facilities include, but are not limited to, detention and retention basins, open channels, storm sewers, pipes, and infiltration facilities.

Stormwater Management Plan - The (name of stormwater management plan) for managing stormwater runoff adopted by the County of (county name) as required by the Act of October 4, 1978, P.L. 864, (Act 167), as amended, and known as the “Storm Water Management Act”.

Stormwater Management Best Management Practices - Is abbreviated as **SWM BMPs** throughout this Ordinance.

Stormwater Management Site Plan - The plan prepared by the Developer or his representative indicating how storm water runoff will be managed at the development site in accordance with this Ordinance. **Stormwater Management Site Plan** will be designated as **SWM Site Plan** throughout this Ordinance.

Subdivision - As defined in The Pennsylvania Municipalities Planning Code, Act of July 31, 1968, P.L. 805, No. 247.

USDA - United States Department of Agriculture.

Waters of this Commonwealth - Rivers, streams, creeks, rivulets, impoundments, ditches, watercourses, storm sewers, lakes, dammed water, wetlands, ponds, springs and other bodies or channels of conveyance of surface and underground water, or parts thereof, whether natural or artificial, within or on the boundaries of this Commonwealth.

Watershed - Region or area drained by a river, watercourse or other surface water of the Commonwealth.

Wetland - Those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions, including swamps, marshes, bogs, fens, and similar areas.

ARTICLE III - STORMWATER MANAGEMENT STANDARDS

Section 301. General Requirements

- A. For all Regulated Activities, unless preparation of an SWM Site Plan is specifically exempted in Section 302:
 - 1. Preparation and implementation of an approved SWM Site Plan is required.
 - 2. No Regulated Activities shall commence until the municipality issues written approval of an SWM Site Plan, which demonstrates compliance with the requirements of this Ordinance.
- B. SWM Site Plans approved by the Municipality, in accordance with Section 406, shall be on site throughout the duration of the Regulated Activity.
- C. The Municipality may, after consultation with DEP, approve measures for meeting the State Water Quality Requirements other than those in this Ordinance, provided that they meet the minimum requirements of, and do not conflict with, State law including but not limited to the Clean Streams Law.
- D. For all Regulated Earth Disturbance Activities, erosion and sediment control BMPs shall be designed, implemented, operated, and maintained during the Regulated Earth Disturbance Activities (e.g., during construction) to meet the purposes and requirements of this Ordinance and to meet all requirements under the Pennsylvania Code Title 25 and the Clean Streams Law. Various BMPs and their design standards are listed in the *Erosion and Sediment Pollution Control Program Manual* (E&S Manual)², Commonwealth of Pennsylvania, Department of Environmental Protection, No. 363-2134-008, as amended and updated.
- E. For all Regulated Activities, implementation of the Volume Controls in Section 303 is required.
- F. Impervious Areas:
 - 1. The measurement of impervious areas shall include all of the impervious areas in the total proposed development even if development is to take place in stages.
 - 2. For development taking place in stages, the entire development plan must be used in determining conformance with this Ordinance.
 - 3. For projects that add impervious area to a parcel, the total impervious area on the parcel is subject to the requirements of this ordinance.
- G. Stormwater flows onto adjacent property shall not be created, increased, decreased, relocated, or otherwise altered without permission of the adjacent property owner(s). Such stormwater flows shall be subject to the requirements of this Ordinance.
- H. All regulated activities shall include such measures as necessary to:
 - 1. Protect health, safety, and property;

2. Meet State Water Quality Requirements as defined in Article II;
 3. Meet the water quality goals of this ordinance by implementing measures to:
 - a. Minimize disturbance to floodplains, wetlands, natural slopes over 8%, and existing native vegetation.
 - b. Preserve and maintain trees and woodlands. Maintain or extend riparian buffers and protect existing forested buffer. Provide trees and woodlands adjacent to impervious areas whenever feasible.
 - c. Establish and maintain non-erosive flow conditions in natural flow pathways.
 - d. Minimize soil disturbance and soil compaction. Cover disturbed areas and replace topsoil to a minimum depth equal to the original depth of 4 inches, whichever is greater. Use tracked equipment for grading when feasible.
 - e. Disconnect impervious surfaces by directing runoff to pervious areas, wherever possible.
 4. To the maximum extent practicable, incorporate the techniques for Low Impact Development Practices described in “The Pennsylvania Stormwater Best Management Practices Manual” (SWM Manual)¹.
- I. The design of all facilities over Karst shall include an evaluation of measures to minimize adverse effects.
 - J. Infiltration BMPs should be spread out, made as shallow as practicable, and located to maximize use of natural on-site infiltration features while still meeting the other requirements of this Ordinance.
 - K. Storage facilities should completely drain both the volume control and rate control capacities over a period of time not less than 24 and not more than 72 hours from the end of the design storm.
 - L. For all Regulated Activities, SWM BMPs shall be designed, implemented, operated, and maintained to meet the purposes and requirements of this Ordinance and to meet all requirements under Pennsylvania Code Title 25, the Clean Streams Law, and the Storm Water Management Act.
 - M. The design storm volumes to be used in the analysis of peak rates of discharge should be obtained from the Precipitation-Frequency Atlas of the United States, Atlas 14, Volume 2, U.S. Department of Commerce, National Oceanic and Atmospheric Administration (NOAA), National Weather Service, Hydrometeorological Design Studies Center, Silver Spring, Maryland, 20910. NOAA’s Atlas 14⁵ can be accessed at Internet address: <http://hdsc.nws.noaa.gov/hdsc/pfds/>.
 - N. Various BMPs and their design standards are listed in the SWM Manual.¹

Section 302. Exemptions

- A. Regulated Activities that create Disconnected Impervious Areas smaller than (x) sq. ft. are exempt from the Peak Rate Control and the SWM Site Plan preparation requirement of this Ordinance.
- B. Regulated Activities that create Disconnected Impervious Areas equal to or greater than (x) sq. ft. and less than (y) sq. ft. are exempt only from the peak rate control requirement of this Ordinance.
- C. Agricultural plowing and tilling are exempt from the rate control and SWM Site Plan preparation requirements of this Ordinance provided the activities are performed according to the requirements of 25 Pa. Code Chapter 102.
- D. Forest management and timber operations are exempt from the rate control and SWM Site Plan preparation requirements of this ordinance provided the activities are performed according to the requirements of 25 Pa. Code Chapter 102.
- E. Exemptions from any provisions of this Ordinance shall not relieve the applicant from the requirements in Sections 301.D. through L.

Section 303. Volume Controls

The low impact development practices provided in the SWM Manual¹ shall be utilized for all Regulated Activities to the maximum extent practicable.

Water volume controls shall be implemented using the *Design Storm Method* in Subsection 1 or the *Simplified Method* in Subsection 2 below. For Regulated Activity areas equal or less than one (1) acre that do not require hydrologic routing to design the stormwater facilities, this Ordinance establishes no preference for either methodology; therefore, the applicant may select either methodology on the basis of economic considerations, the intrinsic limitations on applicability of the analytical procedures associated with each methodology, and other factors.

- 1. *The Design Storm Method* (CG-1 in the SWM Manual¹) is applicable to any size of Regulated Activity. This method requires detailed modeling based on site conditions.
 - a. Do not increase the post-development total runoff volume for all storms equal to or less than the 2-year 24-hour duration precipitation.
 - b. For modeling purposes:
 - i. Existing (pre-development) non-forested pervious areas must be considered meadow or its equivalent.
 - ii. Twenty (20) percent of existing impervious area, when present, shall be considered meadow in the model for existing conditions.

2. *The Simplified Method* (CG-2 in the SWM Manual¹) provided below is independent of site conditions and should be used if the Design Storm Method is not followed. This method is not applicable to Regulated Activities greater than one (1) acre or for projects that require detailed design of stormwater storage facilities. For new impervious surfaces:
 - a. Stormwater facilities shall capture at least the first two inches (2") of runoff from all new impervious surfaces.
 - b. At least the first one inch (1.0") of runoff from new impervious surfaces shall be permanently removed from the runoff flow -- i.e. it shall not be released into the surface waters of this Commonwealth. Removal options include reuse, evaporation, transpiration, and infiltration.
 - c. Wherever possible, infiltration facilities should be designed to accommodate infiltration of the entire permanently removed runoff; however, in all cases at least the first one-half inch (0.5") of the permanently removed runoff should be infiltrated.
 - d. This method is exempt from the requirements of Section 304, Rate Controls.

Section 304. Rate Controls

- A. Areas not covered by a Release Rate Map from an approved Act 167 Stormwater Management Plan:

Post-development discharge rates shall not exceed the predevelopment discharge rates for the 1-, 2-, 5-, 10-, 25-, 50-, and 100-year storms. If it is shown that the peak rates of discharge indicated by the post-development analysis are less than or equal to the peak rates of discharge indicated by the pre-development analysis for 1-, 2-, 5-, 10-, 25-, 50-, and 100-year, 24-hour storms, then the requirements of this section have been met. Otherwise, the applicant shall provide additional controls as necessary to satisfy the peak rate of discharge requirement.

- B. Areas covered by a Release Rate Map from an approved Act 167 Stormwater Management Plan:

For the 1-, 2-, 5-, 10-, 25-, 50-, and 100-year storms, the post-development peak discharge rates will follow the applicable approved release rate map. For any areas not shown on the release rate map, the post-development discharge rates shall not exceed the predevelopment discharge rates.

ARTICLE IV - STORMWATER MANAGEMENT (SWM) SITE PLAN REQUIREMENTS

Section 401. Plan Contents

The following items shall be included in the SWM Site Plan:

- A. Appropriate sections from the Municipal Subdivision and Land Development Ordinance, and other applicable local ordinances, shall be followed in preparing the SWM Site Plans. In instances where the Municipality lacks Subdivision and Land Development regulations, the content of SWM Site Plans shall follow the County's Subdivision and Land Development Ordinance.
- B. The Municipality shall not approve any SWM Site Plan that is deficient in meeting the requirements of this Ordinance. At its sole discretion and in accordance with this Article, when a SWM Site Plan is found to be deficient, the Municipality may either disapprove the submission and require a resubmission, or in the case of minor deficiencies the Municipality may accept submission of modifications.
- C. Provisions for permanent access or maintenance easements for all physical SWM BMPs, such as ponds and infiltration structures, as necessary to implement the operation and maintenance plan discussed in item E.9 below.
- D. The following signature block for the Municipality:

“(Municipal Official or designee), on this date (date of signature), has reviewed and hereby certifies that the SWM Site Plan meets all design standards and criteria of the Municipal Ordinance No. (Number assigned to the Ordinance).”
- E. The SWM Site Plan shall provide the following information:
 - 1. The overall stormwater management concept for the project.
 - 2. A determination of Site Conditions in accordance with the SWM Manual¹. A detailed site evaluation shall be completed for projects proposed in areas of carbonate geology or karst topography, and other environmentally sensitive areas such as brownfields.
 - 3. Stormwater runoff design computations, and documentation as specified in this Ordinance, or as otherwise necessary to demonstrate that the maximum practicable measures have been taken to meet the requirements of this Ordinance, including the recommendations and general requirements in Section 301.
 - 4. Expected project time schedule.
 - 5. A soil erosion and sediment control plan, where applicable, as prepared for and approved by the approval authority.

6. The effect of the project (in terms of runoff volumes, water quality, and peak flows) on surrounding properties and aquatic features and on any existing stormwater conveyance system that may be affected by the project.
7. Plan and profile drawings of all SWM BMPs including open channel structures, pipes, open channels, and swales.
8. SWM Site Plan shall show the locations of existing and proposed on-lot wastewater facilities and water supply wells.
9. The SWM Site Plan shall include an operation and maintenance (O&M) plan for all existing and proposed physical stormwater management facilities. This plan shall address long-term ownership and responsibilities for operation and maintenance as well as schedules and costs for O&M activities.

Section 402. Plan Submission

- A. ____ (Typically Five (5)) copies of the SWM Site Plan shall be submitted as follows:
 1. ____ (Typically Two (2)) copies to the Municipality.
 2. ____ (Typically One (1)) copy to the Municipal Engineer (when applicable).
 3. ____ (Typically One (1)) copy to the County Conservation District.
 4. ____ (Typically One (1)) copy to the County Planning Commission/Office.
- B. Additional copies shall be submitted as requested by the Municipality or DEP.

Section 403. Plan Review

- A. The SWM Site Plan shall be reviewed by a Qualified Professional for the Municipality for consistency with the provisions of this ordinance. After review, the Qualified Professional shall provide a written recommendation for the municipality to approve or disapprove the SWM Site Plan. If it is recommended to disapprove the SWM Site Plan, the Qualified Professional shall state the reasons for the disapproval in writing. The Qualified Professional also may recommend approval of the SWM Site Plan with conditions and, if so, shall provide the acceptable conditions for approval in writing. The SWM Site Plan review and recommendations shall be completed within the time allowed by the Municipalities Planning Code for reviewing subdivision plans.
- B. The Municipality shall notify the applicant in writing within 45 calendar days whether the SWM Site Plan is approved or disapproved. If the SWM Plan involves a Subdivision and Land Development Plan, the notification period is 90 days. If a longer notification period is provided by other statute, regulation, or ordinance, the applicant will be so notified by the Municipality. If the Municipality disapproves the SWM Plan, the Municipality shall cite the reasons for disapproval in writing.

Section 404. Modification of Plans

A modification to a submitted SWM Site Plan that involves a change in SWM BMPs or techniques, or that involves the relocation or redesign of SWM BMPs, or that is necessary because soil or other conditions are not as stated on the SWM Site Plan as determined by the Municipality, shall require a resubmission of the modified SWM Site Plan in accordance with this Article.

Section 405. Resubmission of Disapproved Storm Water Management Site Plans

A disapproved SWM Site Plan may be resubmitted, with the revisions addressing the Municipality's concerns, to the Municipality in accordance with this Article. The applicable review fee must accompany a resubmission of a disapproved SWM Site Plan.

Section 406. Authorization to Construct and Term of Validity

The Municipality's approval of an SWM Site Plan authorizes the Regulated Activities contained in the SWM Site Plan for a maximum term of validity of five years following the date of approval. The Municipality may specify a term of validity shorter than five years in the approval for any specific SWM Site Plan. Terms of validity shall commence on the date the Municipality signs the approval for an SWM Site Plan. If an approved SWM Site Plan is not completed according to Section 407 within the term of validity, then the Municipality may consider the SWM Site Plan disapproved and may revoke any and all permits. SWM Site Plans that are considered disapproved by the Municipality shall be resubmitted in accordance with Section 405 of this Ordinance.

Section 407. As-Built Plans, Completion Certificate and Final Inspection

- A. The Developer shall be responsible for providing as-built plans of all SWM BMPs included in the approved SWM Site Plan. The as-built plans and an explanation of any discrepancies with the construction plans shall be submitted to the Municipality.
- B. The as-built submission shall include a certification of completion signed by a Qualified Professional verifying that all permanent SWM BMPs have been constructed according to the approved plans and specifications. If any licensed Qualified Professionals contributed to the construction plans, then a licensed Qualified Professional must sign the completion certificate.
- C. After receipt of the completion certification by the Municipality, the Municipality may conduct a final inspection.

ARTICLE V - OPERATION AND MAINTENANCE

Section 501. Responsibilities of Developers and Landowners

- A. The Municipality shall make the final determination on the continuing maintenance responsibilities prior to final approval of the SWM Site Plan. The Municipality may require a dedication of such facilities as part of the requirements for approval of the SWM Site Plan. Such a requirement is not an indication that the Municipality will accept the facilities. The Municipality reserves the right to accept or reject the ownership and operating responsibility for any portion of the stormwater management controls.
- B. Facilities, areas, or structures used as Stormwater Management BMPs shall be enumerated as permanent real estate appurtenances and recorded as deed restrictions or conservation easements that run with the land.
- C. The Operation and Maintenance Plan shall be recorded as a restrictive deed covenant that runs with the land.
- D. The Municipality may take enforcement actions against an owner for any failure to satisfy the provisions of this Article.

Section 502. Operation and Maintenance Agreements

The owner is responsible for Operation and Maintenance of the SWM BMPs. If the owner fails to adhere to the Operation and Maintenance Agreement, the Municipality may perform the services required and charge the owner appropriate fees. Non-payment of fees may result in a lien against the property.

ARTICLE VI - FEES AND EXPENSES

Section 601. General

The Municipality may include all costs incurred in the review fee charged to an applicant.

The review fee may include but not be limited to costs for the following:

- A. Administrative/clerical processing.
- B. Review of the SWM Site Plan.
- C. Attendance at meetings.
- D. Inspections.

ARTICLE VII - PROHIBITIONS

Section 701. Prohibited Discharges and Connections

- A. Any drain or conveyance, whether on the surface or subsurface, which allows any non-stormwater discharge including sewage, process wastewater, and wash water to enter the waters of this Commonwealth is prohibited.
- B. No person shall allow, or cause to allow, discharges into surface waters of this Commonwealth which are not composed entirely of stormwater, except (1) as provided in subsection C below, and (2) discharges allowed under a state or federal permit.
- C. The following discharges are authorized unless they are determined to be significant contributors to pollution to the waters of this Commonwealth:

- Discharges from fire fighting activities	- Flows from riparian habitats and wetlands
- Potable water sources including water line flushing	- Uncontaminated water from foundations or from footing drains
- Irrigation drainage	- Lawn watering
- Air conditioning condensate	- Dechlorinated swimming pool discharges
- Springs	- Uncontaminated groundwater
- Water from crawl space pumps	- Water from individual residential car washing
- Pavement wash waters where spills or leaks of toxic or hazardous materials have not occurred (unless all spill material has been removed) and where detergents are not used	- Routine external building wash down (which does not use detergents or other compounds)

- D. In the event that the Municipality or DEP determines that any of the discharges identified in Subsection C, significantly contribute to pollution of the waters of this Commonwealth, the Municipality or DEP will notify the responsible person(s) to cease the discharge.

Section 702. Roof Drains

Roof drains and sump pumps shall discharge to infiltration or vegetative BMPs and to the maximum extent practicable satisfy the criteria for Disconnected Impervious Areas.

Section 703. Alteration of SWM BMPs

No person shall modify, remove, fill, landscape, or alter any SWM BMPs, facilities, areas, or structures, without the written approval of the Municipality.

ARTICLE VIII - ENFORCEMENT AND PENALTIES

Section 801. Right-of-Entry

Upon presentation of proper credentials, the Municipality may enter at reasonable times upon any property within the Municipality to inspect the condition of the stormwater structures and facilities in regard to any aspect regulated by this Ordinance.

Section 802. Inspection

SWM BMPs should be inspected by the landowner, or the owner's designee (including the Municipality for dedicated and owned facilities) according to the following list of minimum frequencies:

1. Annually for the first 5 years.
2. Once every 3 years thereafter.
3. During or immediately after the cessation of a 10-year or greater storm.

Section 803. Enforcement

- A. It shall be unlawful for a person to undertake any Regulated Activity except as provided in an approved SWM Site Plan, unless specifically exempted in Section 302.
- B. It shall be unlawful to violate Section 703 of this Ordinance.
- C. Inspections regarding compliance with the SWM Site Plan are a responsibility of the Municipality.

Section 804. Suspension and Revocation

- A. Any approval or permit issued by the Municipality may be suspended or revoked for:
 1. Non-compliance with or failure to implement any provision of the approved SWM Site Plan or Operation and Maintenance Agreement.
 2. A violation of any provision of this Ordinance or any other applicable law, Ordinance, rule or regulation relating to the Regulated Activity.
 3. The creation of any condition or the commission of any act during the Regulated Activity which constitutes or creates a hazard or nuisance, pollution, or which endangers the life or property of others.
- B. A suspended approval may be reinstated by the Municipality when:
 1. The Municipality has inspected and approved the corrections to the violations that caused the suspension.
 2. The Municipality is satisfied that the violation has been corrected.

- C. An approval that has been revoked by the Municipality cannot be reinstated. The applicant may apply for a new approval under the provisions of this Ordinance.
- D. If a violation causes no immediate danger to life, public health, or property, at its sole discretion, the Municipality may provide a limited time period for the owner to correct the violation. In these cases, the Municipality will provide the owner, or the owner's designee, with a written notice of the violation and the time period allowed for the owner to correct the violation. If the owner does not correct the violation within the allowed time period, the Municipality may revoke or suspend any, or all, applicable approvals and permits pertaining to any provision of this Ordinance.

Section 805. Penalties

[Municipalities should ask their solicitors to provide appropriate wording for this section.]

- A. Anyone violating the provisions of this Ordinance shall be guilty of a summary offense, and upon conviction shall be subject to a fine of not more than \$_____ for each violation, recoverable with costs. Each day that the violation continues shall be a separate offense and penalties shall be cumulative.
- B. In addition, the Municipality, may institute injunctive, mandamus or any other appropriate action or proceeding at law or in equity for the enforcement of this Ordinance. Any court of competent jurisdiction shall have the right to issue restraining orders, temporary or permanent injunctions, mandamus or other appropriate forms of remedy or relief.

Section 806. Appeals

- A. Any person aggrieved by any action of the Municipality or its designee, relevant to the provisions of this Ordinance, may appeal to the Municipality within thirty (30) days of that action.
- B. Any person aggrieved by any decision of the Municipality, relevant to the provisions of this Ordinance, may appeal to the County Court Of Common Pleas in the county where the activity has taken place within thirty (30) days of the Municipality's decision.

ARTICLE IX - REFERENCES

1. Pennsylvania Department of Environmental Protection (DEP). No. 363-0300-002 (2006), as amended and updated. *Pennsylvania Stormwater Best Management Practices Manual*. Harrisburg, PA.
2. The Pennsylvania Department of Environmental Protection (DEP). 363-2134-008 (2000), as amended and updated. *Erosion and Sediment Pollution Control Program Manual*. Harrisburg, PA.
3. United States Department of Agriculture (USDA), National Resources Conservation Service (NRCS). *National Engineering Handbook*. Part 630: Hydrology, 1969-2001. Originally published as the *National Engineering Handbook*, Section 4: Hydrology. Available online at: <http://www.wcc.nrcs.usda.gov/hydro/hydro-techref-neh-630.html>.
4. United States Department of Agriculture (USDA), Natural Resources Conservation Service (NRCS). 1986. *Technical Release 55: Urban Hydrology for Small Watersheds*, 2nd Edition. Washington, D.C.
5. US Department of Commerce (USDC), National Oceanic and Atmospheric Administration (NOAA), National Weather Service (NWS), Hydrometeorological Design Studies Center. 2004-2006. *Precipitation-Frequency Atlas of the United States, Atlas 14, Volume 2*, Silver Spring, Maryland, 20910. Internet address: <http://hdsc.nws.noaa.gov/hdsc/pfds/>.

(Ordinance Name)

(Ordinance Number)

ENACTED and ORDAINED at a regular meeting of the

on this _____ day of _____, 20_____.

This Ordinance shall take effect immediately.

(Name)

(Title)

(Name)

(Title)

(Name)

(Title)

ATTEST:

Secretary

APPENDIX A

**OPERATION AND MAINTENANCE AGREEMENT
STORMWATER MANAGEMENT BEST MANAGEMENT PRACTICES (SWM BMPs)**

THIS AGREEMENT, made and entered into this _____ day of _____, 20____, by and between _____, (hereinafter the “Landowner”), and _____, _____ County, Pennsylvania, (hereinafter “Municipality”);

WITNESSETH

WHEREAS, the Landowner is the owner of certain real property as recorded by deed in the land records of _____ County, Pennsylvania, Deed Book _____ at Page _____, (hereinafter “Property”).

WHEREAS, the Landowner is proceeding to build and develop the Property; and

WHEREAS, the SWM BMP Operation and Maintenance Plan approved by the Municipality (hereinafter referred to as the “Plan”) for the property identified herein, which is attached hereto as Appendix A and made part hereof, as approved by the Municipality, provides for management of stormwater within the confines of the Property through the use of BMPs; and

WHEREAS, the Municipality, and the Landowner, his successors and assigns, agree that the health, safety, and welfare of the residents of the Municipality and the protection and maintenance of water quality require that on-site SWM BMPs be constructed and maintained on the Property; and

WHEREAS, the Municipality requires, through the implementation of the SWM Site Plan, that SWM BMPs as required by said Plan and the Municipal Stormwater Management Ordinance be constructed and adequately operated and maintained by the Landowner, successors and assigns.

NOW, THEREFORE, in consideration of the foregoing promises, the mutual covenants contained herein, and the following terms and conditions, the parties hereto agree as follows:

1. The Landowner shall construct the BMPs in accordance with the plans and specifications identified in the SWM Site Plan.
2. The Landowner shall operate and maintain the BMPs as shown on the Plan in good working order in accordance with the specific maintenance requirements noted on the approved SWM Site Plan.
3. The Landowner hereby grants permission to the Municipality, its authorized agents and employees, to enter upon the property, at reasonable times and upon presentation of proper credentials, to inspect the BMPs whenever necessary. Whenever possible, the Municipality shall notify the Landowner prior to entering the property.
4. In the event the Landowner fails to operate and maintain the BMPs per paragraph 2, the Municipality or its representatives may enter upon the Property and take whatever action is deemed necessary to maintain said BMP(s). It is expressly understood and agreed that the

Municipality is under no obligation to maintain or repair said facilities, and in no event shall this Agreement be construed to impose any such obligation on the Municipality.

5. In the event the Municipality, pursuant to this Agreement, performs work of any nature, or expends any funds in performance of said work for labor, use of equipment, supplies, materials, and the like, the Landowner shall reimburse the Municipality for all expenses (direct and indirect) incurred within 10 days of receipt of invoice from the Municipality.
6. The intent and purpose of this Agreement is to ensure the proper maintenance of the onsite BMPs by the Landowner; provided, however, that this Agreement shall not be deemed to create or effect any additional liability of any party for damage alleged to result from or be caused by stormwater runoff.
7. The Landowner, its executors, administrators, assigns, and other successors in interests, shall release the Municipality from all damages, accidents, casualties, occurrences or claims which might arise or be asserted against said employees and representatives from the construction, presence, existence, or maintenance of the BMP(s) by the Landowner or Municipality.
8. The Municipality shall inspect the BMPs at a minimum of once every three years to ensure their continued functioning.

This Agreement shall be recorded at the Office of the Recorder of Deeds of _____ County, Pennsylvania, and shall constitute a covenant running with the Property and/or equitable servitude, and shall be binding on the Landowner, his administrators, executors, assigns, heirs and any other successors in interests, in perpetuity.

ATTEST:

WITNESS the following signatures and seals:

(SEAL)

For the Municipality:

For the Landowner:

ATTEST:

_____ (City, Borough, Township)

County of _____, Pennsylvania

I, _____, a Notary Public in and for the County and State aforesaid, whose commission expires on the _____ day of _____, 20____, do hereby certify that _____ whose name(s) is/are signed to the foregoing Agreement bearing date of the _____ day of _____, 20____, has acknowledged the same before me in my said County and State.

GIVEN UNDER MY HAND THIS _____ day of _____, 20_____.

NOTARY PUBLIC

(SEAL)

APPENDIX B

DISCONNECTED IMPERVIOUS AREA (DIA)

B.1. Rooftop Disconnection

When rooftop downspouts are directed to a pervious area that allows for infiltration, filtration, and increased time of concentration, the rooftop may qualify as completely or partially Disconnected Impervious Area (DIA) and a portion of the impervious rooftop area may be excluded from the calculation of total impervious area.

A rooftop is considered to be completely or partially disconnected if it meets the requirements listed below:

- The contributing area of rooftop to each disconnected discharge is 500 square feet or less, and
- The soil, in proximity of the roof water discharge area, is not designated as HSG “D” or equivalent, and
- The overland flow path from roof water discharge area has a positive slope of 5% or less.

For designs that meet these requirements, the portion of the roof that may be considered disconnected depends on the length of the overland path as designated in Table B.1.

Table B.1: Partial Rooftop Disconnection	
Length of Pervious Flow Path *	Roof Area Treated as Disconnected
(ft)	(% of contributing area)
0 – 14	0
15 – 29	20
30 – 44	40
45 – 59	60
60 – 74	80
75 or more	100

* Flow path cannot include impervious surfaces and must be at least 15 feet from any impervious surfaces.

B.2. Pavement Disconnection

When pavement runoff is directed to a pervious area that allows for infiltration, filtration, and increased time of concentration, the contributing pavement area may qualify as a DIA that may be excluded from the calculation of total impervious area. This applies generally only to small or narrow pavement structures such as driveways and narrow pathways through otherwise pervious areas (e.g. a walkway or bike path through a park).

Pavement is disconnected if the pavement, or area adjacent to the pavement, meets the requirements below:

- The contributing flow path over impervious area is not more than 75 feet, and
- The length of overland flow is greater than or equal to the contributing length, and
- The soil is not designated as HSG “D” or equivalent, and

- The slope of the contributing impervious area is 5% or less, and
- The slope of the overland flow path is 5% or less.

If the discharge is concentrated at one or more discrete points, no more than 1,000 square feet may discharge to any one point. In addition, a gravel strip or other spreading device is required for concentrated discharges. For non-concentrated discharges along the edge of the pavement, this requirement is waived; however, there must be a provision for the establishment of vegetation along the pavement edge and temporary stabilization of the area until vegetation becomes stabilized.

REFERENCE

Philadelphia Water Department. 2006. *Stormwater Management Guidance Manual*. Section 4.2.2: ***Integrated Site Design***. Philadelphia, PA.

Appendix Three

Eligible Historic Properties

A	B	C	D	E	F	G	H	I	J	K	L
Key #	Inventory ID	Address	Municipality	County	Historic Name	National Register Status	Tax Parcel	Resource Category	Material	Date Built	
1	83662	83567 115 N. Abington Rd.	Abington Township	Lackawanna	Waverly Community House	Eligible		Building	Brick	1920 1	
2	105914	106438	Clarks Green Borough	Lackawanna	Clarks Green Historic District	Eligible		Building	Wood	1811 1	
3	102502	102401 S Turnpike Rd.	Dalton Borough	Lackawanna	Ackerly Creek Bridge	Eligible		Structure	Wood	1904 1	
4	95698	95602 Main St., Mill St., Turnpike Rd.	Dalton Borough	Lackawanna	Dalton Historic District	Eligible		District			
5	97817	97717 Dunham Rd.	Dunmore Borough	Lackawanna	Dunmore Reservoir No. 1	Eligible		Structure		1891 1	
6	143108	130022	Dunmore Borough	Lackawanna	Green Ridge and Sanderson Historic District	Eligible		Building	Brick	1865 1	
7	106438	106221 500 East Drinker St.	Dunmore Borough	Lackawanna	Temple Israel	Eligible		Building	Stucco	1924 1	
8	121449	112778 1800 N Washington Ave.	Dunmore Borough	Lackawanna	Scranton State School for the Deaf	Eligible	MAP 135.18, E Building	Building		1885 1	
9	97824	97724 Blakey & Warren Sts	Dunmore Borough	Lackawanna	Dunmore Cemetery	Eligible		Site		1860 1	
10	97540	97441	Multi-Municipals	Lackawanna	D.L.&W. Railroad Line	Eligible		District		N	
11	102247	102146	Multi-Municipals	Lackawanna	Delaware & Hudson Railroad	Eligible		District		0	
12		Wayne County line thru Carbondale									
13	97678	97578 to Scranton	Multi-Municipals	Lackawanna	Delaware & Hudson Canal Company Gravity Railroad	Eligible		District		1830 0	
14	112278	109474 1814 Newton Ransom Blvd.	Newton Township	Lackawanna	Newton Ransom School	Eligible		Building	Weatherboard	1	
15	101735	101635 722 Vine St.	Scranton City	Lackawanna	Accounting House	Eligible		Building	Wood	1920 1	
16	91948	91852 620 Madison Ave.	Scranton City	Lackawanna	Warren Home	Eligible		Building	Wood	1920 1	
17	104993	104892 546-548 Harrison Ave.	Scranton City	Lackawanna	North Scranton Bank & Trust	Eligible		Building	Wood	1926 1	
18	29553	29461 1902 N Main Ave.	Scranton City	Lackawanna	Peck, F.L., House	Eligible		Building	Brick	1901 1	
19	83666	83571 545 Jefferson Ave.	Scranton City	Lackawanna	Scranton Electric Building	Eligible		Building	Brick	1985 1	
20	29264	29172 507 Linden St.	Scranton City	Lackawanna	Horowitz, B. & Company	Eligible		Building	Stone	1910 1	
21	29230	29138 314 Penn Ave.	Scranton City	Lackawanna	Mertz Hardware	Eligible		Building	Asbestos	1900 1	
22	29228	29136 306 Penn Ave.	Scranton City	Lackawanna	Scranton School District Administration Building	Eligible		Building	Brick	1880 1	
23	29277	29185 425 N Washington Ave.	Scranton City	Lackawanna	Clark Property	Eligible		Building	Limestone	1907 1	
24	110432	108305 25 W Market St.	Scranton City	Lackawanna	Woolworth, Charles Sumner, House	Eligible		Building	Brick	1907 1	
25	83677	83682	Scranton City	Lackawanna	Miller, T.M., Building	Eligible		Building	Brick	1907 1	
26	29362	29270 520 Jefferson Ave.	Scranton City	Lackawanna	Hill Historic District	Eligible		District		1	
27	102409	102308 614 Wyoming Ave.	Scranton City	Lackawanna	Hill Historic District	Eligible		District		N	
28	112905	109784 St., Irving St.	Scranton City	Lackawanna	Green Ridge Historic District	Eligible		District		1891 1	
29	112903	109783 Washington St., Sunset St., Capouse Ave., Woodlawn St.	Scranton City	Lackawanna	Scranton Lace Curtain Company	Eligible		Building	Stone	1930 1	
30	96752	96653 Meylert Ave. & Glenn Ave.	Scranton City	Lackawanna	Scranton U.S. Post Office & Courthouse	Eligible		Building	Limestone	1930 1	
31	90827	90731 Washington Ave. & Linden St.	Scranton City	Lackawanna	Sanderson Avenue Historic District	Eligible		District		1915 1	
32	102382	102281 Green Ridge Ave & Sanderson Ave.	Scranton City	Lackawanna	Scranton Life Building	Eligible		Building	Stone	1915 1	
33	83659	83664 538 Spruce St.	Scranton City	Lackawanna	Catlin, George H., House	Eligible		Building	Brick	1911 1	
34	13901	13810 232 Monroe Ave.	Scranton City	Lackawanna	Goldsmith Bros. Inc.	Eligible		Building	Brick	1906 1	
35	29232	29140 318 Penn Ave.	Scranton City	Lackawanna	Hadden Craftsman Building	Eligible		Building	Brick	1906 1	
36	64399	64305	Scranton City	Lackawanna	Green Ridge Branch Library	Eligible		Building	Stone	1875 1	
37	115381	110620 Cedar Ave to Rocky Glenn Pond	Scranton City	Lackawanna	Niagara/Liberty Hose Company	Eligible		Building	Brick	1865 1	
38	29529	29437 1032 Green Ridge St.	Scranton City	Lackawanna	Green Ridge and Sanderson Historic District	Eligible		Building	Concrete	1903 1	
39	110430	108304 West Market St.	Scranton City	Lackawanna	District Reservoir No. 5	Eligible		District		1800 1	
40	143108	130022	Scranton City	Lackawanna	Central High School	Eligible		Building	Stone	1896 1	
41	96719	96620 Sanderson Ave.	Scranton City	Lackawanna	Scranton Silk Mill	Eligible		Building	Stone	1900 1	
42	105692	105590 Montage Mountain Rd.	Scranton City	Lackawanna	C.P. Railroad Bridge	Eligible		Structure	Brick	1909 1	
43	29280	29188 501 Vine St.	Scranton City	Lackawanna	Harriet Beecher Stowe School	Eligible	167.80-040-05 Building	Building	Brick	1908 1	
44	117472	11480 317 Poplar St.	Scranton City	Lackawanna	Peck Lumber Manufacturing Company	Eligible		Building	Brick	1880 0	
45	105693	105591	Scranton City	Lackawanna	International Correspondence Schools	Eligible		Building	Brick	1918 1	
46	143262	130288 830 Crown Ave.	Scranton City	Lackawanna	Scranton Railway Company (Trolley)	Eligible		Building	Brick	1901 1	
47	96758	96659 E Market St.	Scranton City	Lackawanna	Scranton Tribune Building	Eligible		District	Wood	1910 1	
48	96753	96654 Ash St.	Scranton City	Lackawanna	Hobart Company	Eligible		District		1	
49	96896	96897 801 Providence Rd.	Scranton City	Lackawanna	Nay Aug Park	Eligible		District	Stone	1875 0	
50	97307	97208 Clay Ave.	Scranton City	Lackawanna	Main Street Historic District	Eligible		District	Stone	1875 0	
51	29270	29178 334-336 N Washington Ave.	Scranton City	Lackawanna	Fulton, Robert, School	Eligible		District	Brick	N	
52	29227	29135 302-304 Penn Ave.	Scranton City	Lackawanna	Marvin Colliery	Eligible	14510050001	Building	Brick	1889 1	
53	97309	97210 Arthur Ave.	Scranton City	Lackawanna	Marshall, John, Elementary School	Eligible		Building	Stone	1935 1	
54	97306	97207 Main St.	Scranton City	Lackawanna	Marine Corps League Museum	Eligible		Building	Stone	1901 1	
55	141690	128450 959 Wyoming Ave.	Scranton City	Lackawanna	Scranton Technical High School	Eligible		Building	Stone	1901 1	
56	96852	96653 Boulevard Ave.	Scranton City	Lackawanna	New York, Ontario & Western Railroad	Eligible		Structure	Concrete	1899 1	
57	142998	129883	Scranton City	Lackawanna	Lackawanna County Prison	Eligible		Building	Sandstone/Brownstone	1887 1	
58	101694	101594 1340 Adams St.	Scranton City	Lackawanna	Lackawanna County Prison	Eligible		Building	Weatherboard	1903 1	
59	29349	29257 723 Adams St.	Scranton City	Lackawanna	Saint Lucy's Church	Eligible		Building	Brick	1928 1	
60	117486	111594 North side of Lackawanna River	Scranton City	Lackawanna	Lackawanna Steam Laundry (Grass-Grossinger Building)	Eligible		Building	Brick	1908 1	
61	117480	111476 N. Washington Ave. & New York St.	Scranton City	Lackawanna	Mercy Hospital, School of Nursing	Eligible		Building	Limestone	1907 1	
62	97228	97129 617-619 Madison Ave.	Scranton City	Lackawanna	N.Y. & O&W Railroad	Eligible		Building	Asphalt	1890 1	
63	29486	29394 947 Scranton St.	Scranton City	Lackawanna	Scranton Estate	Eligible		Building	Asphalt	1869 1	
64	29229	29137 308-312 Penn Ave.	Scranton City	Lackawanna							
65	29362	29270 520 Jefferson Ave.	Scranton City	Lackawanna							
66	110434	108306	Scranton City	Lackawanna							
67	13900	13809 Ridge Row, Univ. of Scranton	Scranton City	Lackawanna							

A	B	C	D	E	F	G	H	I	J	K	L
68	29234	29142 324-326 Penn Ave.	Scranton City	Lackawanna	Eison Company	Eligible					1
69	29233	29141 320-322 Penn Ave.	Scranton City	Lackawanna	Eisner & Sons Inc.	Eligible					1
70	29231	29139 316 Penn Ave.	Scranton City	Lackawanna		Eligible					1
71	64399	64305 Wyoming Ave. & Ash St.	Scranton City	Lackawanna	International Correspondence School - Printing & Binding	Eligible		Building		Brick	1906 1
72	114314	110202 128 Adams Ave.	Scranton City	Lackawanna	Casey Parkway	Eligible	069.SCF.7.14	Building		Brick	1927 1
73	117896	111594 Keyser Ave.	Scranton City	Lackawanna	Delaware, Lackawanna & Western Arch	Eligible		Structure		Concrete	1899 1
74	117472	111480 317 Poplar St.	Scranton City	Lackawanna	Scranton Book Center	Eligible		Building			1900 1
75	141690	128450 959 Wyoming Ave.	Scranton City	Lackawanna	Public School #9	Eligible		Structure		N	1909 1
76	105693	105591 crossing Keyser Ave (SR 0307)	Scranton City	Lackawanna	DL & W Railroad Bridge	Eligible		Building		Stone	1936 0
77	99806	99706	South Abington Township	Lackawanna	Leach Range-National Guard	Eligible					

Appendix Four

Potential Funding Sources

Appendix Four: Potential Funding Sources: Green Building/ Greenhouse Gas Reduction/Alternative Energy Sources

Pennsylvania Programs:

Alternative and Clean Energy Program:

Pennsylvania Department of Community & Economic Development provides financial assistance in the form of grant and loan funds that will be used by eligible applicants for the utilization, development and construction of alternative and clean energy projects in the Commonwealth. The Program is administered jointly by the Department of Community and Economic Development (DCED) and the Department of Environmental Protection (DEP), under the direction of the Commonwealth Financing Authority.

Loans: Loans for manufacturers of alternative and/or clean energy generation equipment or components shall not exceed \$35,000 for every new job created within three years after approval of the loan. Loans for any alternative energy production or clean energy project shall not exceed \$5 million or 50% of the total project cost, whichever is less. **Grants:** Grants for manufacturers of alternative and/or clean energy generation equipment or components shall not exceed \$10,000 for every job projected to be created by the business within three years after approval of the grant.

Grants for any alternative energy production or clean energy project shall not exceed \$2 million or 50% of the total project cost, whichever is less. The maximum grant amount for an Energy Savings Contract (ESCO). **Guarantees:** Grants shall not exceed \$5 million and have a term of not more than five years. In the event of a default, the grant will pay up to 75% of the deficiency.

Eligibility includes businesses; economic development organizations; or political subdivisions, such as municipalities, counties and school districts. As defined in Section II B, political subdivisions may not apply for loans for Alternative Energy Production Projects.

Alternative Energy Production Tax Credit

Business Projects Open for a Period of Time Each Year

PADEP, tax credit of 15 percent, up to \$1 million per applicant and \$5 million for program, of net cost of projects incurred between July 9 and Dec. 31, 2008.

Eligible project types: solar, wind, geothermal, biologically derived methane gas, fuel cells, biomass and coal methane; production or distribution of alternative energy, manufacture or production of products that provide alternative energy or alternative fuels, improvements in energy efficiency or energy conservation, research and develop technology to provide alternative energy sources or alternative fuels, development or enhancement of transportation of alternative fuels via rail, development of new, more efficient locomotives or enhancement of efficiency of existing locomotives.

Commonwealth Financing Authority (CFA) Solar Program

Business, Economic Development, Municipality, County, Research and Development and School Projects

Loan maximum of \$35,000 to manufacturers of solar equipment for every new job projected to be created within three years; loan maximum for solar-energy generation or distribution project is lesser of either \$5 million or \$2.25 per watt. Loan maximum of \$5 million for a solar research and development facility or a solar thermal project.

Grants of \$5,000 for solar-equipment manufacturers for every new job projected to be created within three years. Grant maximum for a solar energy generation or distribution project is lesser of either \$1 million or \$2.25 per watt. Grant maximum grant of \$1 million for a solar research and development facility or a solar thermal project.

Projects ranked on criteria to include level of matching funds (minimum of a one-to-one match requirement), technical and financial feasibility of project and number and quality of jobs to be created or preserved in Pennsylvania. 610-433-7486 or 888-AFC-FIRST (232-3477)

Energy Efficient Mortgages (EEMs)

Residential Projects

These mortgages can be used in new or existing homes to finance energy efficiency measures, including renewable energy technologies. The federal government supports the loans by insuring them through Federal Housing Administration (FHA) or Veterans Affairs (VA) programs. The program allows borrowers who might otherwise be denied loans to pursue energy efficient improvements, and secures lenders against loan default, by allowing lenders to approve customers who they might have otherwise denied.

Green Energy Works! Solar

Government, Authority, Business, College, University and Non-Profit Projects

Purchase and installation of photovoltaic equipment for at least 500 Kw of solar energy capacity. Maximum subsidy will be no more than \$2.25/Watt; installers must meet requirements of the PA Sunshine list and the system must have performance of at least 80 percent compared to optimal.

All projects must be able to start work within 6 months, and completed within 24 months.

High Performance Buildings Programs

Residential and Small Business Projects

The High Performance Building Program provides financial assistance in the forms of grants and loan funds to residents and small businesses to underwrite the cost premiums associated with the design and construction or major renovation of high performance buildings in the Commonwealth. The program is administered jointly by the Department of Community and Economic Development and the Department of Environmental Protection under the direction of the Commonwealth Financing Authority.

HUD Title I Loans (Residential and Small Business Projects)

Residential and Small Business Projects

This program provides a guarantee for loans to finance light or moderate rehabilitation of properties and construction of nonresidential buildings on the properties. The program may be used to insure loans for up to 20 years on single family or multifamily properties. Maximum loan amount is \$25,000 to improve a single family home or to improve or build a nonresidential structure; multifamily properties are eligible for insurance up to \$60,000.

Keystone HELP Residential Energy Efficiency Program

Residential Projects (offered in March 2009)

Provides low-interest rate loans and rebates to Pennsylvania residents for energy efficiency improvements to their homes, including the installation of energy-efficient heating and air conditioning systems, geothermal systems, insulation and air sealing, and more. The Department of Environmental Protection is offering the program with our partners, the Pennsylvania Treasury Department, the Pennsylvania Housing Finance Agency and AFC First Financial.

Department of Environmental Protection, Pennsylvania Treasury Department, Pennsylvania Housing Finance Agency and AFC First Financial offer the program.

Local Government Greenhouse Gas Pilot Grant Program

Residential, County and Municipal Projects

To provide PA municipalities with funding to develop greenhouse gas emissions inventories and emission reduction action plans.

Pennsylvania Alternative Fuels Incentive Grant (AFIG) Program

Small Business Projects

This program provides funding for construction of alternative fuel stations and research and development projects. The money can be used for purchase of hybrid and other cleaner vehicles and to cover the incremental cost of a biofuel. As support for biofuels continues to grow, this or similar funds are likely to grow. Since the program began in early 1990s, DEP has awarded almost \$30 million.

Pennsylvania Energy Development Authority (PEDA)

Business, Industry, School, Municipality and Nonprofit Projects

Under this program, approximately \$10 million for grants, loans and loan guarantees is made available annually. The program is administered by DEP Office of Energy and Technology Development and the Pennsylvania Department of Community and Economic Development (DCED). Both tax-exempt and taxable bond financing are also available through PEDA's partnership with the Pennsylvania Economic Development Financing Authority.

The most recent PEDA awards, (October 2007), provided \$6.4 million to 16 clean energy projects that will create 316 permanent, and up to 280 construction, jobs in the commonwealth and leverage more than \$38 million in private funds. Since 2005, PEDA has awarded \$21 million in grants and loans for 57 clean energy projects that will leverage another \$240 million in private investment.

Renewable Energy Program - Geothermal and Wind Projects

Business, Economic Development, Municipality, County, and School Projects

Grants and loans for wind energy facilities and geothermal technologies, including opportunities for wind energy and geothermal manufacturers. Eligible candidates include a business; an economic development organization; or a political subdivision, which includes municipalities, counties and school districts.

Renewable Energy Program

Commercial and Industrial Projects

Pennsylvania Department of Community & Economic Development offers a Renewable Energy Program that includes loans as well as grants. Loans are available for component manufacturers of renewable energy generation equipment up to \$35,000 for every new job created. Loans for geothermal systems or wind energy generation or distribution projects shall not exceed \$5 million.

Grants for component manufacturers of renewable energy generation equipment up to \$5,000 for every new job created. Grants for geothermal systems or wind energy generation or distribution projects up to \$1 million. Grants for planning and feasibility studies up to 50% of the total cost of the planning project or \$175,000, whichever is less.

Guarantees: Grants shall not exceed \$5 million and have a term of not more than five years. In the event of a default, the grant will pay up to 75% of the deficiency.

Small Business Advantage Grant Program

Small Business Program May reopen

DEP, the grant administrator, provides matching funds up to \$7,500 to businesses with a maximum of 100 full-time employees; the recipient must demonstrate at least a 10 percent annual economic gain or savings through energy conservation or pollution prevention as a direct result of the proposed project.

Small Business Energy Efficiency Grant Program

Commercial Projects

Provides a 25 percent reimbursement grant, up to a maximum of \$25,000, to enable Pennsylvania small businesses to acquire equipment or adopt processes that promote energy efficiency.

Weatherization Works! Commission on Economic Opportunity

Residential Projects

Program for low-income households installs insulation, weather stripping, heating modifications and offers energy consumption education. Also provides job-skill training to previously unemployed workers.

Sunshine Program

Small Business and Residential Projects

Program will provide \$100 million in rebates to help fund solar electric [solar photovoltaic (PV)] and solar hot water (solar thermal) projects. Rebates will be awarded on a first-

come first-served basis to approved applicants. Households may receive one solar PV rebate for up to 10 kilowatts (kW) of installed PV generating capacity plus one solar thermal rebate not to exceed \$2,000. Small businesses may only submit one PV and one solar thermal application at a time and must complete the project and rebate process prior to submitting another application.

Pennsylvania Sunshine Program Installer Registration

DEP is publishing applications for solar photovoltaic and solar thermal (hot water) installation contractors wishing to register to participate in the new Pennsylvania Sunshine Program. This new incentive program will be available later this spring for homeowners and small businesses undertaking solar energy projects. The Pennsylvania Sunshine Program will provide \$100 million in grants to Commonwealth homeowners and small businesses to purchase and install solar photovoltaic (PV) and solar hot water systems. All program applicants will be required to use an installer from the Department's approved list. Please use the links below to find solar photovoltaic (PV) and solar hot water installer application forms and instructions.

Sustainable Energy Funds (SEF)

Commercial, Industrial, Nonprofit, School, Local and State Government Projects

In 1998, as a result of the restructuring plans of five electric companies, the Pennsylvania Public Utility Commission (PUC) created four funds to promote development of renewable energy companies and projects and energy conservation. Funds have provided \$20 million+ in loans and \$1.8 million in grants to 100+ projects.

FEDERAL

American Recovery and Reinvestment Act (ARRA) Programs

Residential and Small Business Projects

On February 17, President Obama signed the ARRA into law to infuse the economy with \$787 billion. Pennsylvania is slated to receive \$16 billion in federal funds, with a portion dedicated to clean energy. The ARRA amends several clean energy tax credits and incentives to spur further development.

Conservation Innovation Grants (CIG)

Non-Federal Government or Non-Government Organizations or Individuals

This is a voluntary program to stimulate development and adoption of innovative conservation approaches and technologies. Projects must not exceed three years. Grant cannot exceed \$2 million; at least 50 percent of the total project cost must come from non-federal matching funds (cash and in-kind contributions) provided by the grantee.

Emergency Economic Stabilization Act of 2008 Clean Energy Incentives

Residential and Commercial Projects

When former President Bush signed Public Law No: 110-343, financial incentives to help the development of renewable energy and energy efficiency technologies that were included in the legislation also took effect.

**Energy Efficiency and Renewable Energy financing, U.S. Department of Energy
Business, Industry, University, Residential, Federal, State, Tribal and Inventor Projects**

Program offers grants, cooperative agreements, continuation and renewal awards for projects, research and development and procurement.

Energy Efficient Commercial Buildings Tax Deduction

Commercial Projects

The ARRA extends this tax deduction of \$1.80 per square foot for energy efficiency improvements.

Energy-Efficient New Homes Tax Credit for Home Builders

Commercial Projects

The ARRA creates a one-year extension of the new energy-efficient home tax credit, up to \$2,000 for builders.

Federal Residential Tax Credit

Residential Projects

A 30 percent tax credit is available for purchase and installation of solar electric and solar water heating systems. Consumers can qualify for two credits – one for a photovoltaic system and another for a solar water heating system.

Federal Renewable Energy Incentives

Residential, Business and Agricultural Projects

Various incentives, tax deductions, loans and grants are available for clean energy technologies.

Industrial Technologies Program, U.S. Department of Energy

Industrial Projects

This program works to improve energy efficiency and environmental performance by 1) investing in high-risk, high-value research and development projects and 2) conducting on-site energy efficiency assessments for U.S. companies and offering information about best practices in energy management.

Loan Guarantee Program, U.S. Department of Energy

Commercial Projects

Program is available for projects that "avoid, reduce or sequester air pollutants or anthropogenic emissions of greenhouse gases" and "employ new or significantly improved technologies as compared to technologies in service in the United States at the time the guarantee is issued." Application dates and deadlines are based on solicitations, for which prospects can register.

Renewable Electricity Production Tax Credit (PTC) and Business Energy Investment Tax Credit (ITC)

Commercial, Industrial, Utility Projects

Taxpayers eligible for the PTC can take the federal ITC or receive a grant from the U.S. Treasury Department instead of taking the PTC for new installations. The new law also

allows taxpayers eligible for the business ITC to receive a grant from the U.S. Treasury Department instead of taking the business ITC for new installations. It also extends the ITC for combined heat and power systems. These new provisions will provide funds to renewable energy companies that do not have enough tax liability to take the tax credit due to current market conditions, helping to keep the market moving forward.

Residential Energy Efficiency Tax Credit

Residential Projects

The ARRA triples tax credits available to homeowners for energy-efficient improvements from 10 percent to 30 percent of the cost, up to \$1,500 per household.

Residential Renewable Energy Tax Credit

Residential Projects

A 30-percent tax credit (with no cap) on installation of solar hot water heaters, photovoltaics, other solar electric technologies, small wind, fuel cells and geothermal heat pumps. This tax credit can be combined with Pennsylvania's Sunshine Program, the rebate from which is considered income. Because the state rebate is taxable, homeowners can take the federal credit based upon the full price of the solar system (without subtracting the rebate amount).

Rural Energy for America Program (REAP)

Agricultural Projects

Title IX of the 2008 United States Department of Agriculture (USDA) Farm Bill contains several funding options for renewable energy projects.

Small Business Innovation Research program, U.S. Department of Energy

Small Business Projects

Program provides funding for research and development on projects related to "clean" technology innovation.

Tax Incentives Assistance Project (TIAP)

Residential and Commercial Projects

This project is sponsored by a group of public interest nonprofit groups, government agencies and other organizations in the energy efficiency field. It gives consumers and businesses information about using federal income tax incentives for energy efficient products and technologies passed by Congress as part of the Energy Policy Act of 2005 and its amendments.

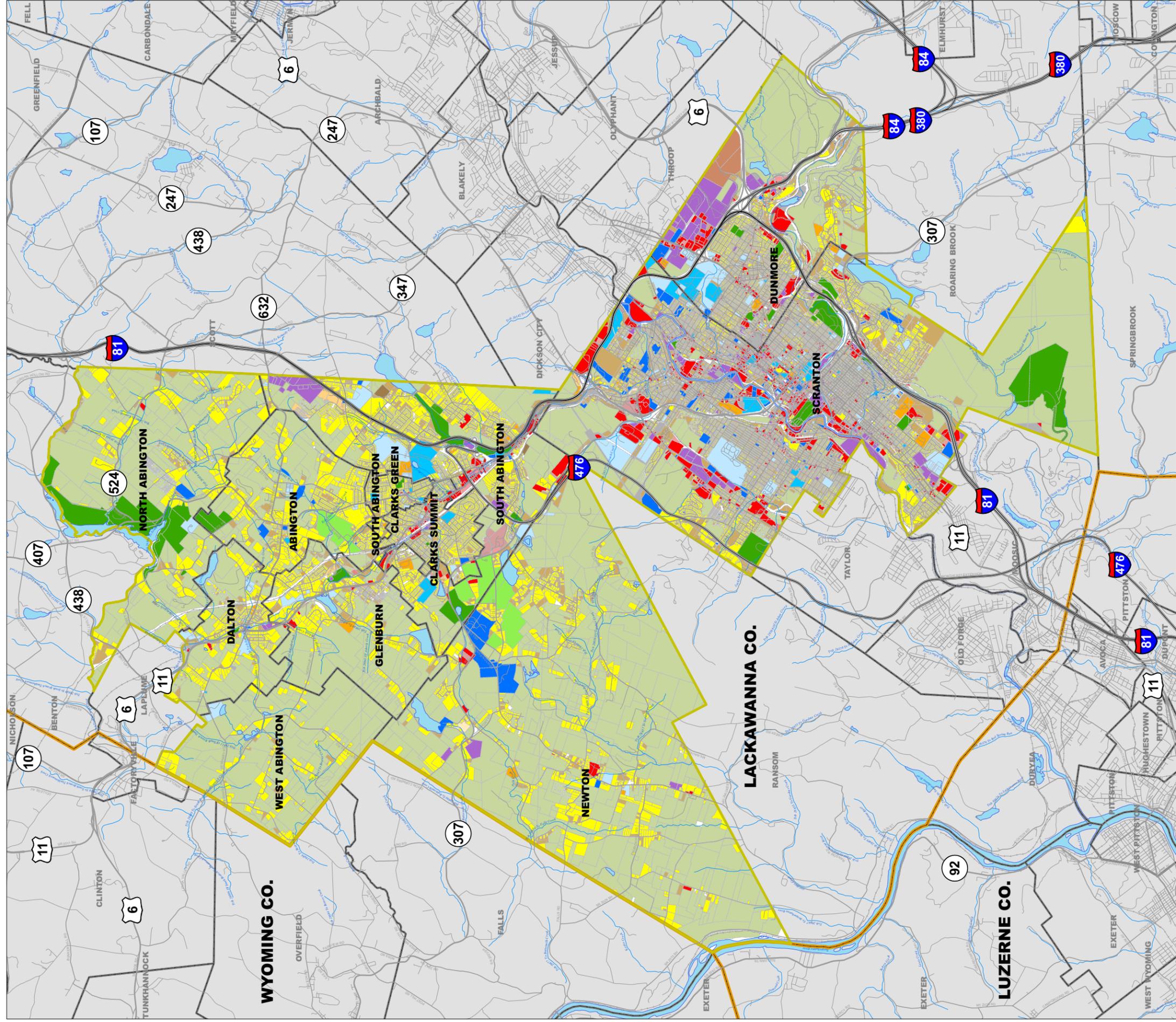
USDA Small Business Innovation Research Program

Small Business Projects

Research and development funding for alternative and renewable energy technology from the federal Department of Agriculture.

Appendix Five

Map Section



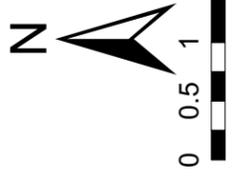
**Scranton-Abingtons Planning Association
Comprehensive Plan**

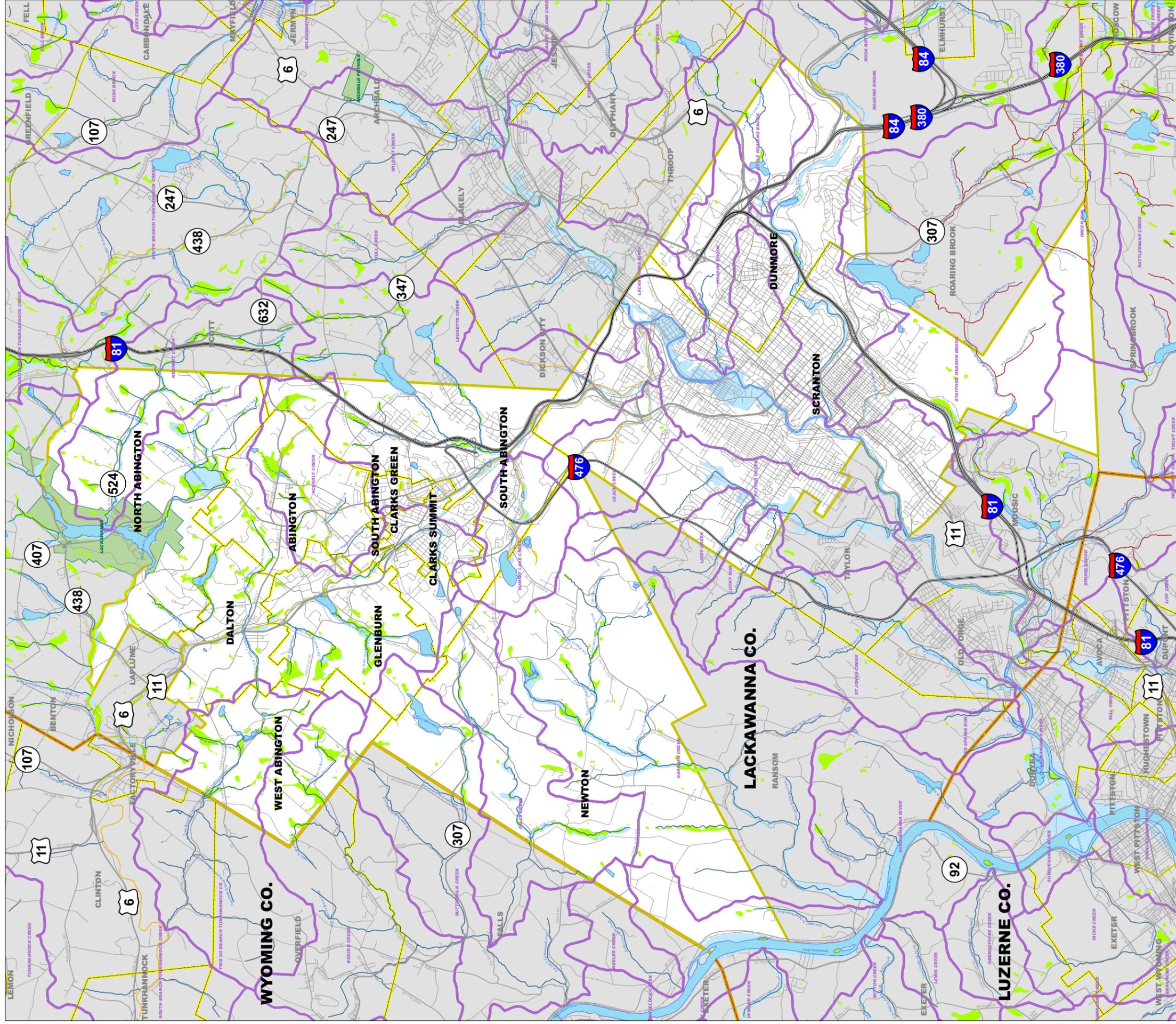
FIGURE 2.2.1

EXISTING LAND USE

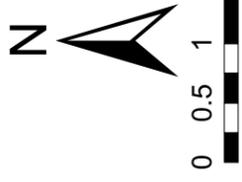
- Study Area Boundary
- Residential Single Family Detached
- Residential Single Family Attached
- Residential Multi-Family
- Residential Mobile Home
- Industrial
- Institutional-Private
- Institutional-Schools
- Institutional-Public
- Office
- Hotel
- Mixed Use
- Retail
- Golf Course
- Recreational
- Transportation & Utilities
- Agricultural and Vacant
- Quarry
- Landfill
- Vacant

July 2009





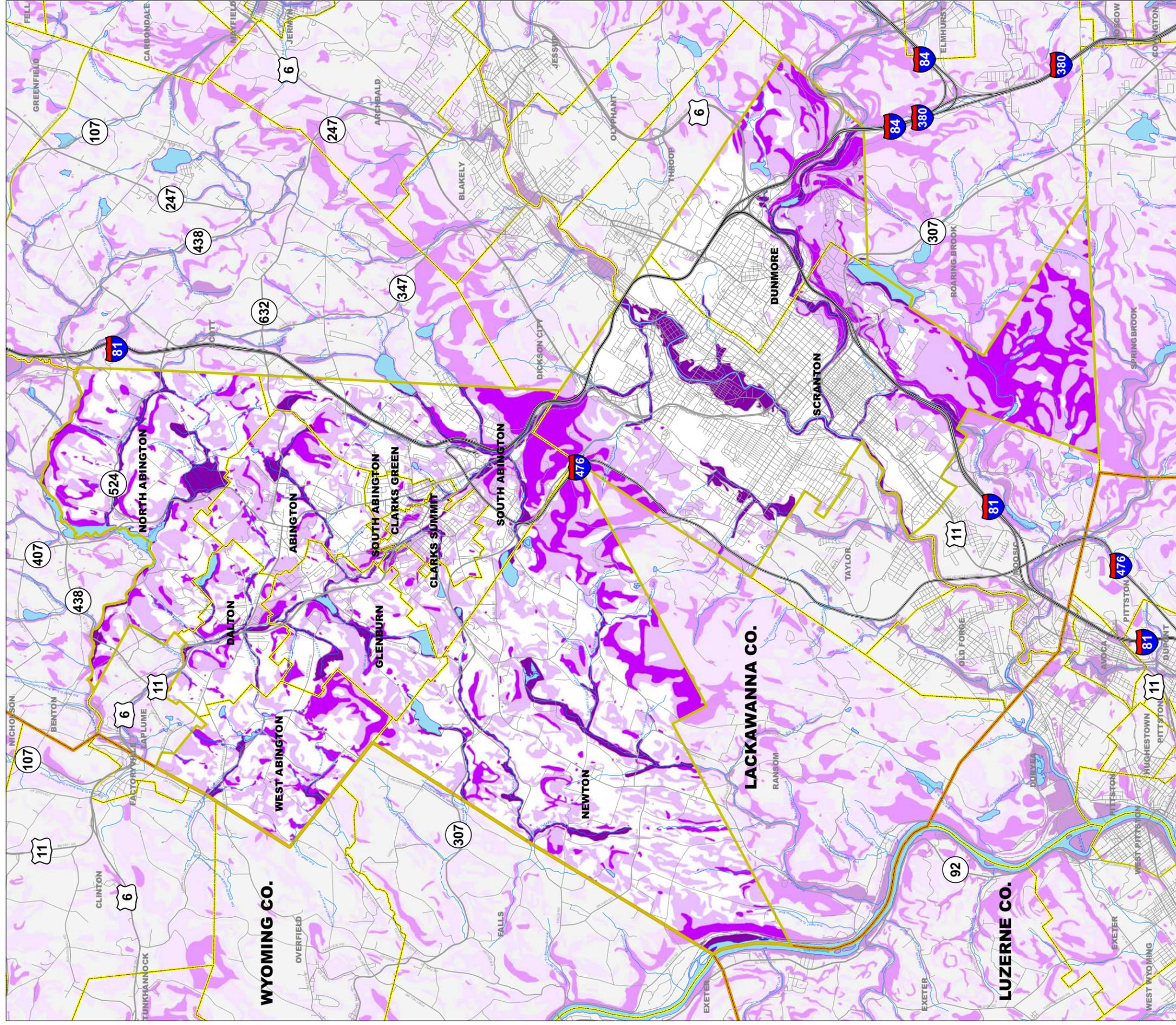
July 2009



- Study Area Boundary
- Watersheds
- Wetlands
- 100yr Floodplains
- Rivers & Streams
- Cold Water Fishery
- Exceptional Value
- High Quality
- Trout Stocked Fishery
- Warm Water Fishery

**Scranton-Abingtons Planning Association
Comprehensive Plan**

**FIGURE 2.6.1
HYDROLOGIC FEATURES**



Scranton-Abingtons Planning Association
Comprehensive Plan

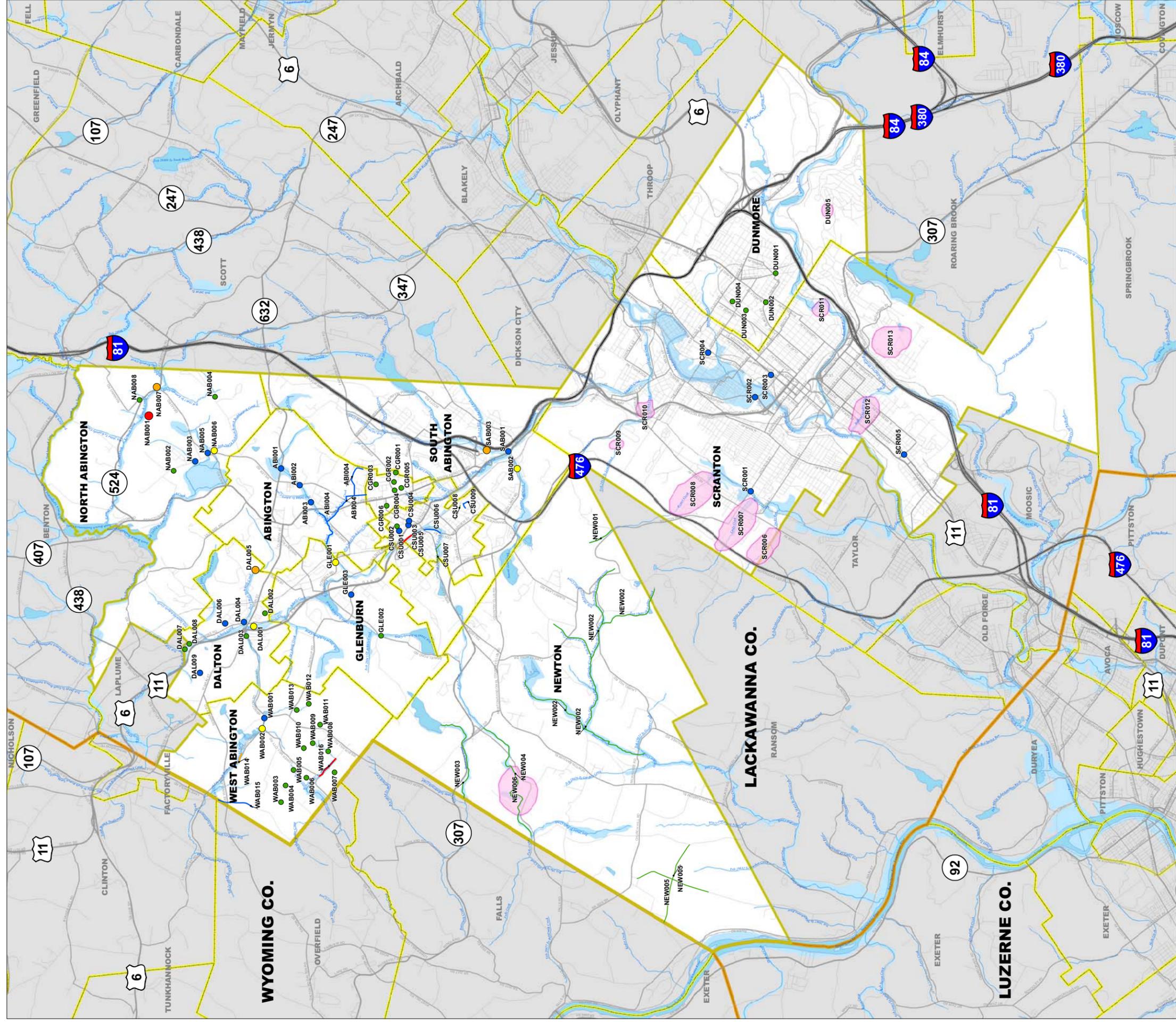
FIGURE 2.6.4

COMPOSITE CONSTRAINTS

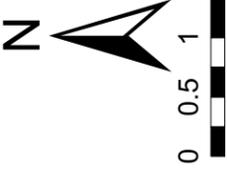
-  Study Area Boundary
-  Level 1: 100 yr Floodplains
-  Level 2: Wetlands & Steep Slope (>25%)
-  Level 3: Prime Farmland & Moderate Slope (15 to 25%)
-  Level 4: Slight



February 2007



July 2009



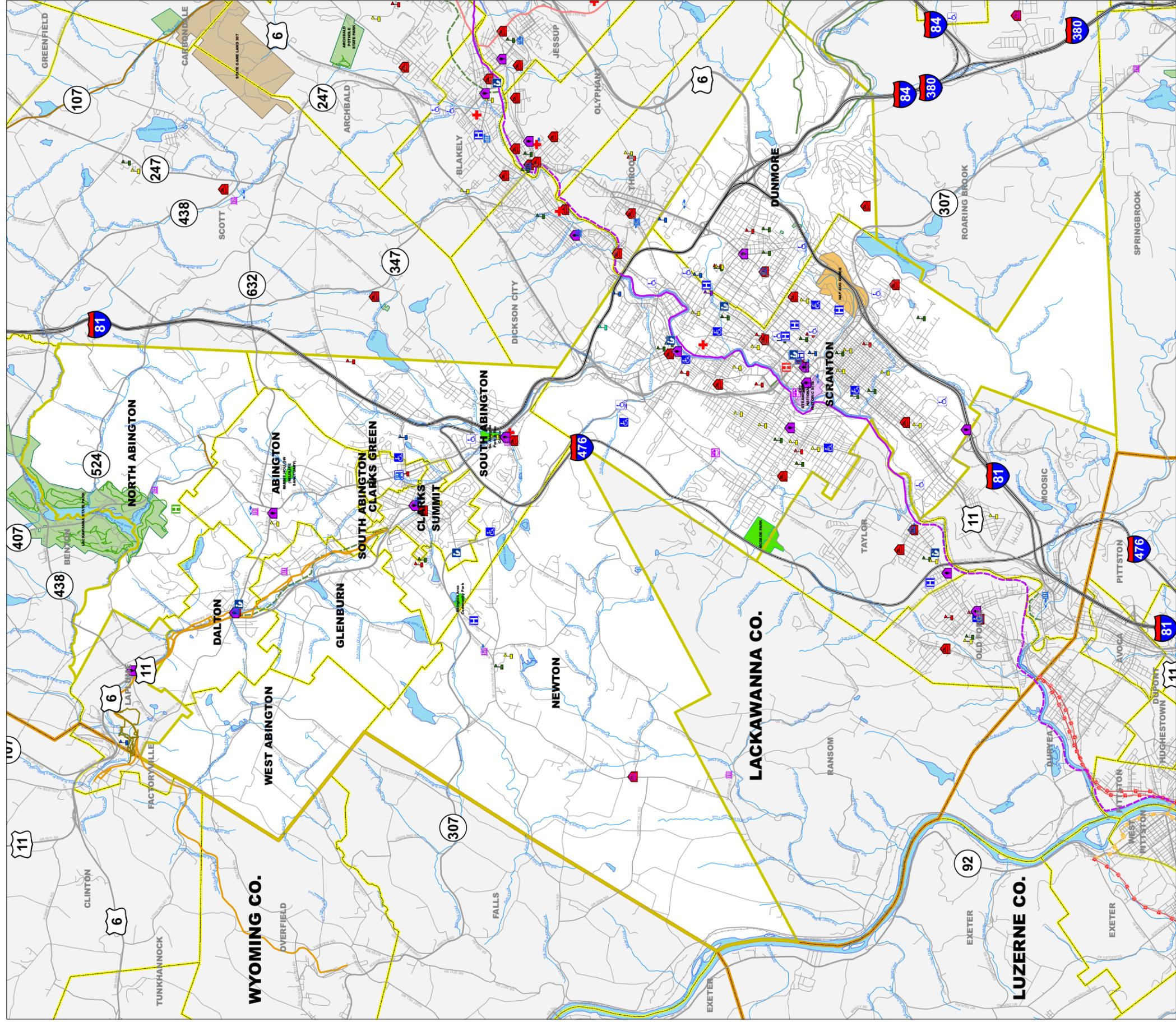
**Scranton-Abingtons Planning Association
Comprehensive Plan**

FIGURE 2.6.5

**STORMWATER
PROBLEM AREAS**

- 1 Type of Problem
 - 2 Types of Problems
 - 3 Types of Problems
 - 4 Types of Problems
 - 6 Types of Problems
- 1 Type of Linear Problem
 - 2 Types of Linear Problems
 - 3 Types of Linear Problems
 - 4 Types of Linear Problems
 - 6 Types of Linear Problems
- Problem Area
 - Study Area Boundary
 - 100yr Floodplains

Source: Borton-Lawson.
Stormwater problems include: flooding, erosion, sediment, landslides, groundwater and water pollution as well as other issues.



January 2010

**Scranton-Abingtons Planning Association
Comprehensive Plan**

FIGURE 2.8.1

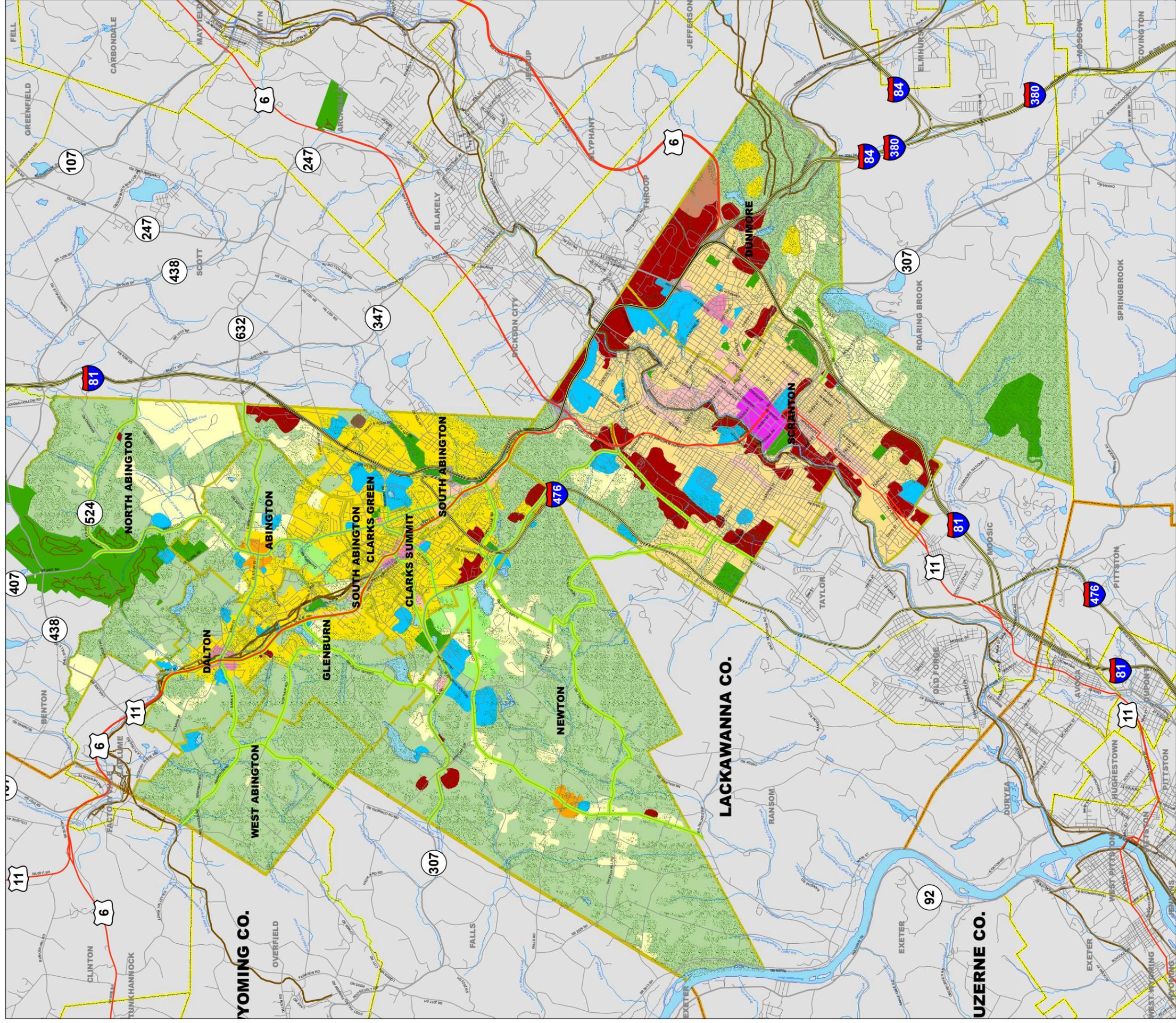
COMMUNITY FACILITIES

- | | | | |
|-----------------------|------------------------|---------------------------|-----------------------|
| Township Building | Alcohol/Drug Treatment | Elementary School | Police |
| Boro Building | Assisted Care | Junior High/Middle School | Fire |
| City Hall | General Hospital | High School | EMS |
| State Office Building | Medical Center | Technology School | Transportation |
| Courthouse | Rehab/Nursing Care | College/University | Airport |
| Library | Veterans Center | Special Education School | BUS STATION |
| Post Office | | | |

- Lackawanna River Heritage Trail**
- Route L
 - Route Y
 - Existing Trail
 - Proposed Trail
- Other Area Trails**
- Existing Trail
 - Proposed Trail
 - Keystone College Trail
 - Trolley Trail
 - Westside Bike Trail (Current)
 - Westside Bike Trail (Proposed)

- Recreational Areas**
- National Heritage Site
 - National Natural Landmark
 - County and Local Parks
 - State Game Land
 - State Forest / Park





January 2010



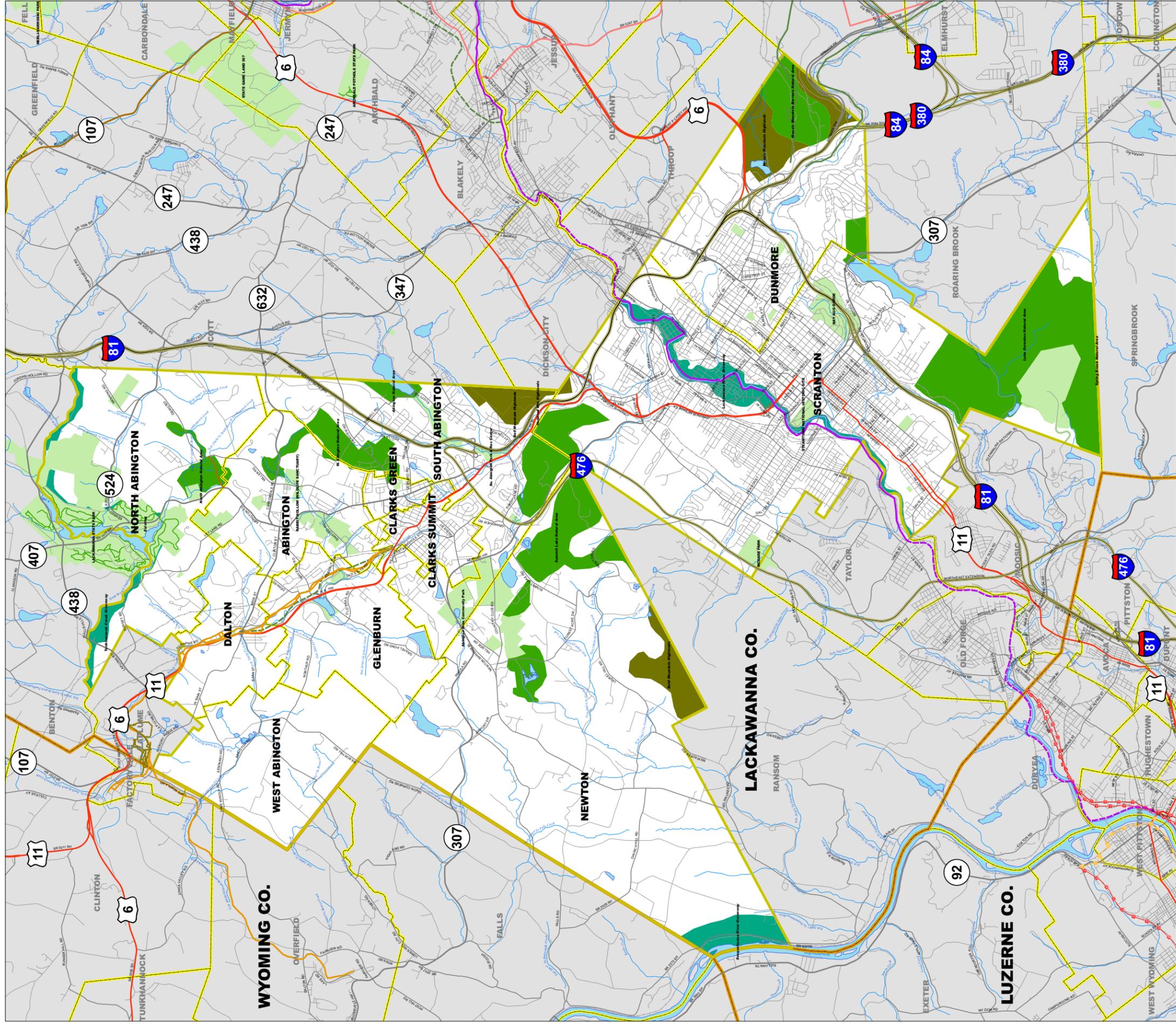
Scranton-Abingtons Planning Association

Comprehensive Plan

FIGURE 3.2.1

LAND USE PLAN

- Study Area Boundary
- City Center
- Borough Center
- Village Center
- Employment Center
- Mixed Use
- Mixed Use Corridor
- Urban Neighborhood
- Residential - Low/Moderate Density
- Residential - Low Density
- Institutional
- Recreational
- Golf Course
- Agriculture, Open Space and Limited Very Low Density Residential
- Quarry
- Landfill
- Transportation & Utilities
- Resource Conservation Areas
- Ped / Bike Roadway Network
- Trails



January 2010

N



Scranton-Abingtons Planning Association

Comprehensive Plan

FIGURE 3.7.1

PARKS, RECREATION AND OPEN SPACE

- Keystone College Trail
- Trolley Trail
- Lackawanna River Heritage Trail
- Existing Trail
- Proposed Trail
- Other Area Trails
- Existing Trail
- Proposed Trail
- Westside Bike Trail (Current)
- Westside Bike Trail (Proposed)
- Route L
- Route Y
- State Park Trails
- Existing
- Greenways
- High Lands
- Natural Areas