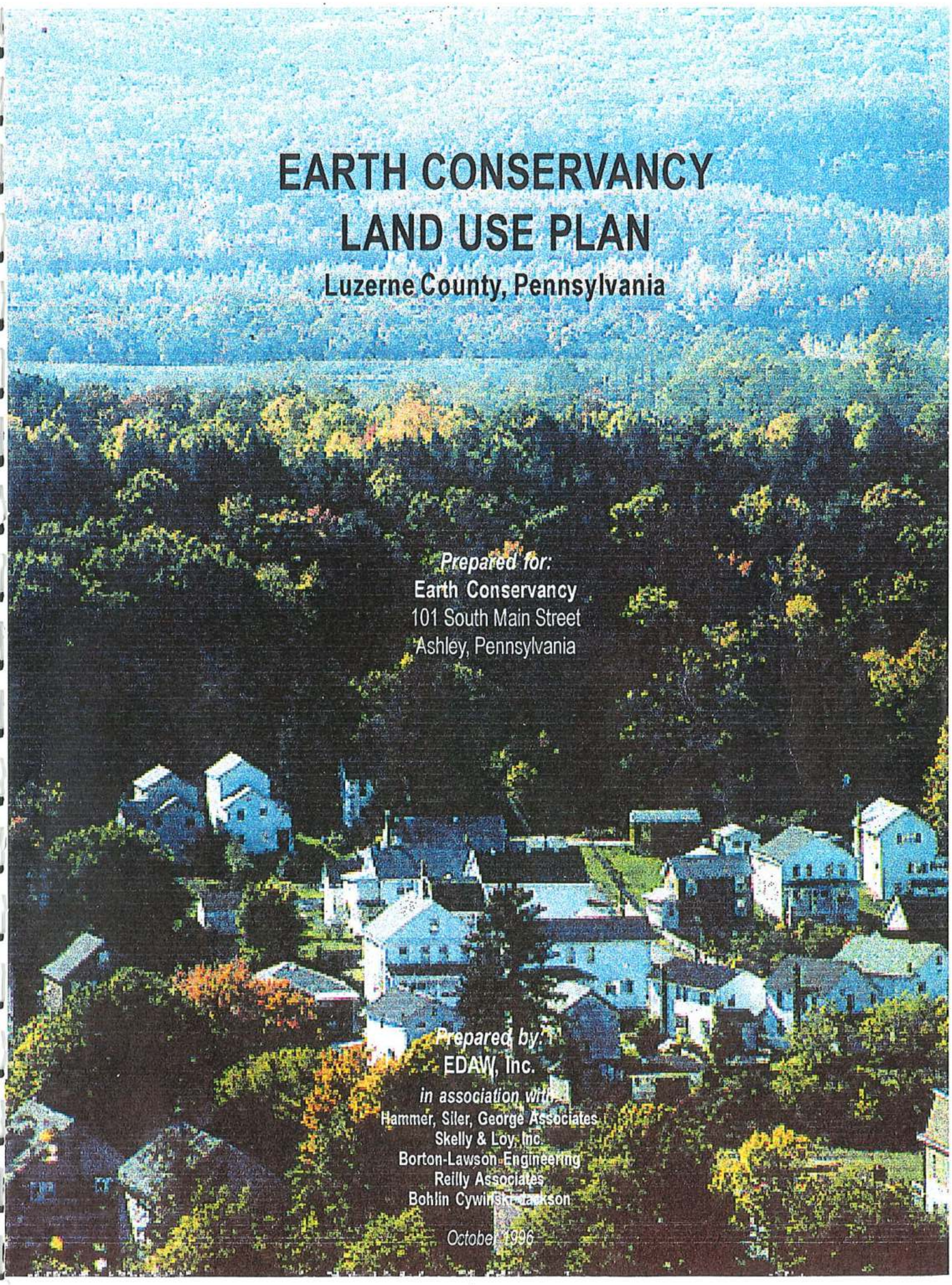
EARTH CONSERVANCY LAND USE PLAN

Luzerne County, Pennsylvania



Prepared for:
Earth Conservancy
101 South Main Street
Ashley, Pennsylvania

Prepared by:
EDAW, Inc.
in association with:
Hammer, Siler, George Associates
Skelly & Loy, Inc.
Borton-Lawson Engineering
Reilly Associates
Bohlin Cywinski Jackson

October 1996

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Note: All appendices are located in a separate volume available for review at Earth Conservancy, 101 South Main Street, Ashley, Pennsylvania, 18706. Arrangements to review the appendices can be made by calling (717) 823-3445.

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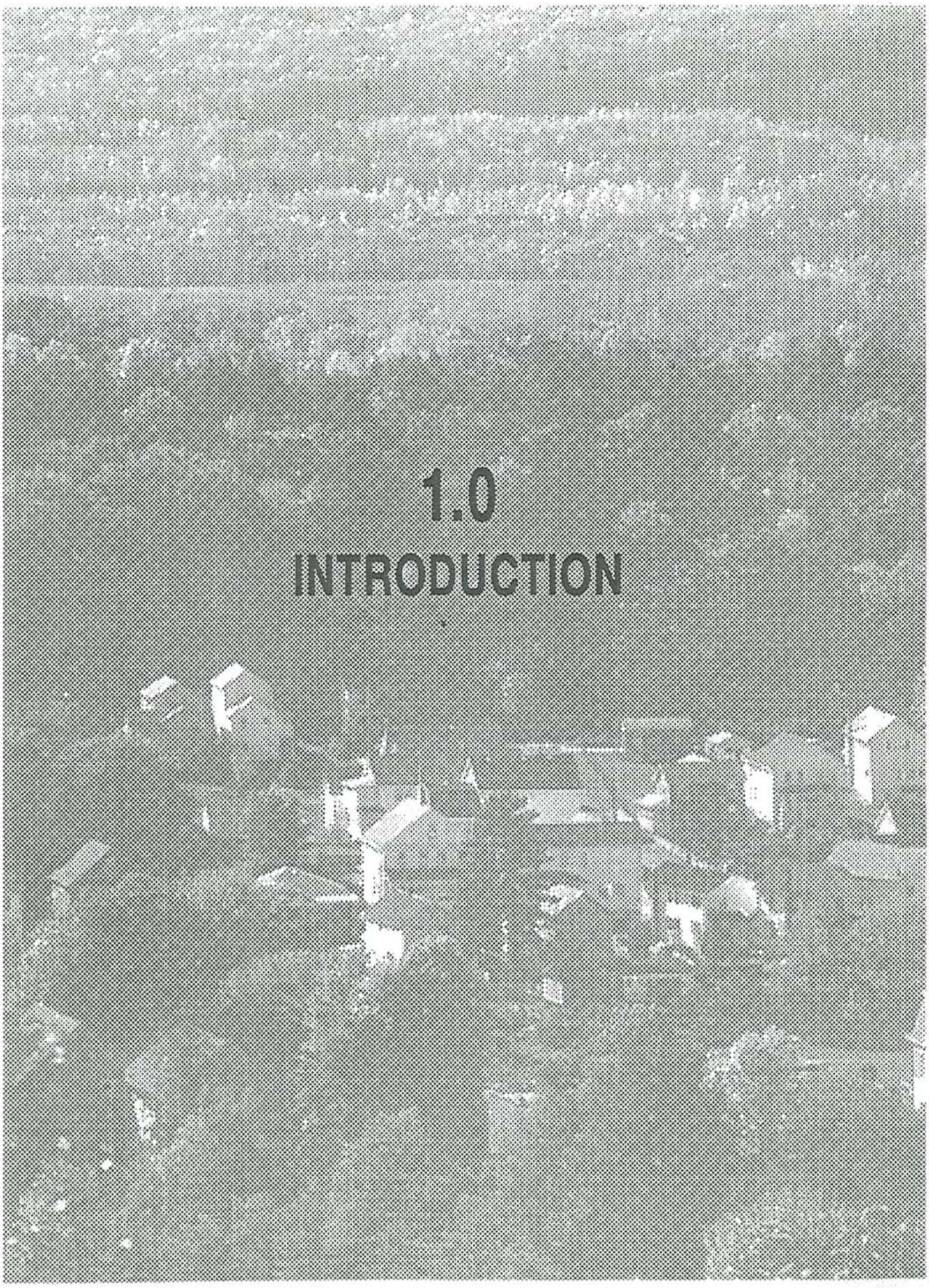


1.0
INTRODUCTION

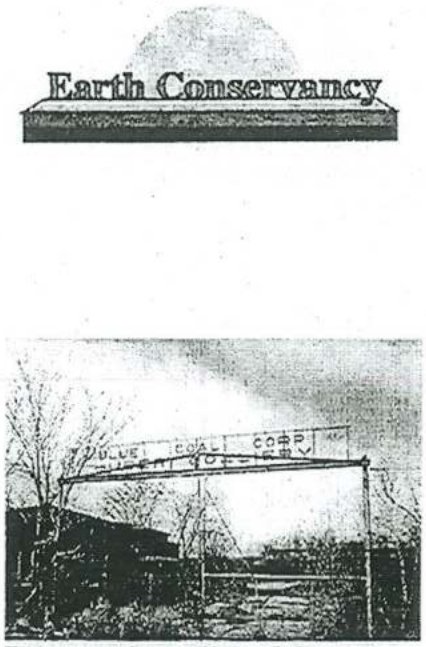
1.0 INTRODUCTION

1.1 Background

Earth Conservancy (EC) was established as a non-profit, 501(c)(3) corporation in 1992 to acquire approximately 16,300 acres of land formerly owned by the Blue Coal Company of Ashley, located just outside of the city of Wilkes-Barre in northeastern Pennsylvania. This property had been in bankruptcy proceedings since the early 1970s and consisted of scattered parcels throughout the Wyoming Valley in and around Wilkes-Barre. Most of the land had undergone either underground or surface anthracite coal mining which was widespread throughout the valley from the early 1800s until the 1970s.

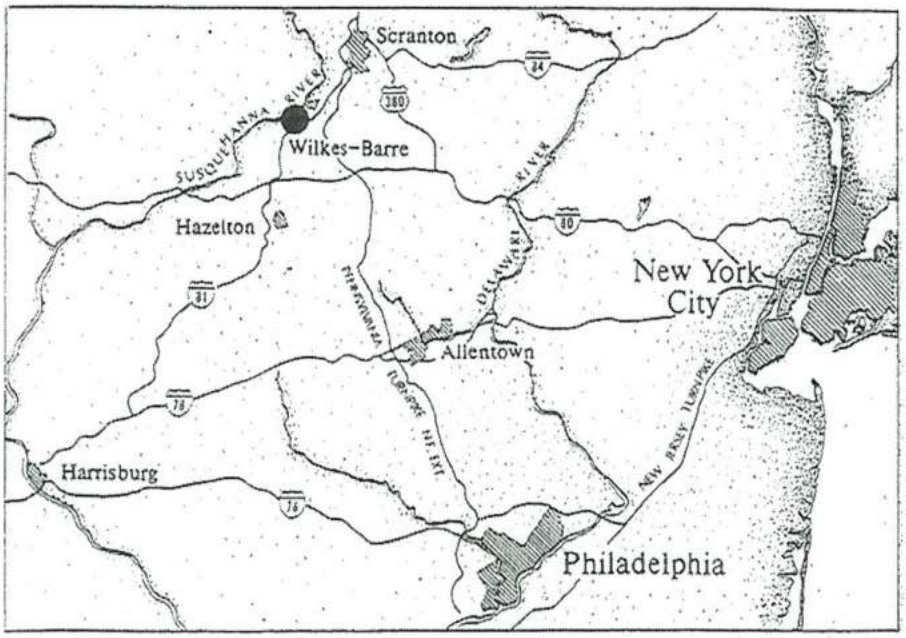
EC was founded by Congressman Paul Kanjorski and a group of community leaders who, with help from King's College and Wilkes University, two local educational institutions, conceived the framework of the organization. It was this early community partnership that launched the mission of EC, which is:

> *To serve as the steward in the reclamation and utilization of degraded land in partnership with government, business and education; and to develop environmentally related technologies that improve the economic competitiveness and the quality of life of our community.*



Entrance to former Huber Colliery, Blue Coal Company in Ashley

Figure 1-1
Location Map



With this as its mission, EC has been involved in a number of reclamation-oriented projects since its conception. At the same time, the organization has been actively inventorying the former Blue Coal Company land assets and preparing a number of parcels for lease or sale as a means of generating revenues for operational and research expenses.

In the summer of 1995, EC engaged a team of consultants led by EDAW, Inc., of Alexandria, Virginia, to prepare a long-term, 25-year Land Use Plan for the EC properties. This report documents the results of that planning effort which was conducted over a twelve-month period beginning in October 1995. The Plan was developed as a collaborative effort involving the consultant team, EC staff, local universities assisting EC in its research activities - Wilkes University and King's College - and a committee of Earth Conservancy consisting of interested citizens and municipal representatives, the Land Use Planning Committee (LUPC).

Land Use Planning Committee Members (not all shown)

The LUPC members and other parties involved in this planning effort are listed in Table 1-1. Their contribution has been invaluable in reviewing data related to the EC land holdings and helping to formulate a viable long-term plan for these properties that will guide growth and development in the Wyoming Valley over the foreseeable future.

Funding for this land use planning project has been provided by three governmental agencies; two at the Federal level and one at the local level. These agencies include the Appalachian Regional Commission (ARC), the Economic Development Administration (EDA) within the Department of Commerce, and the Luzerne County Department of Community Development.

Table 1-1
Local Contributors to Land Use Plan

EC Board of Directors	Title and/or Affiliation
Stephen Barrouk	President, Greater Wilkes-Barre Chamber of Business & Industry
Christopher Breiseth, Ph.D.	President, Wilkes University; and, Chairman, EC Board of Directors
Mark Dingman	Vice President & General Manager, UGI Utilities
Joseph Hillan	Retired
Peter Kanjorski, Esq.	Attorney
James Lackenmier, CSC	President, King's College
James Manley	Executive Director of Marketing, Miller, Anderson & Sherrard
Harold Rose, Jr.	Retired
Ed Schechter	Chair, Land Use Planning Committee
Susan Shoval	President, Guard Insurance Group
Rhea Simms	President, Lewith and Freeman Real Estate
Harold Snowdon, Jr.	President, Snowdon Funeral Homes
Joseph Yudichak	President, 11th Congressional District Regional Equipment Center

LUPC Members	Title and/or Affiliation
Richard Allan	Environmental Consultant
Robert Ambrose	Nuangola Borough
Margaret Bakker	Bakker & Lewis Architects
Stephen Barrouk	President, Chamber of Business & Industry; and, EC Board of Directors
Robert L. Betzler, P.E.	Wyoming Valley Sanitary Authority
Dale Bruns, Ph.D.	Chair, Dept. of GeoEnvironmental Sciences & Engineering, Wilkes University
Anna Cervenak	Bell Atlantic, PA
Tom Chesnick, P.E.	Engineering Projects Manager, Earth Conservancy
Edwin Correll	Laurel Run Borough
Stanley Davies	Pennsylvania Environmental Council
Jay Delaney	Legislative Aide, Senator Musto's Office
Mark Dingman	Vice President & General Manager, UGI Utilities; and, EC Board of Directors
Howard Grossman	Executive Director, Economic Development Council of Northeastern PA
Joseph Hillan	Newport Township
John Jablowski	Mayor, Ashley Borough
Robert Jones	Plymouth Township Planning Commission
Richard Jumper	Nabisco Inc.
Calvin Kanyuck	Newport Township
Gene Klein	Chief Clerk/Administrator, Luzerne County
John Klimuszka	Hanover Township
Nancy Kosteleba	Luzerne County Community College
Joseph Kotroski	Conyngham Township
Charles Mattei, P.E.	District Engineer, District IV-0, Pennsylvania Department of Transportation
John Matusek	Director, Luzerne County Community Development
Patrick Mullen	Mayor, Sugar Notch Borough
Gerald O'Brien	Mayor, Warrior Run Borough
Darryl Pawlush, P.E.	Supervisor, Conyngham Township

Table 1-1, *Continued*
Local Contributors to Land Use Plan

LUPC Members	Title and/or Affiliation
Joseph Perugino	President, P.G. Resources
Frank Revitt	Wilkes-Barre Township
Allen Sachse	Supervisor, Eastern District Heritage Parks, Pennsylvania Department of Conservation and Natural Resources
Ed Schechter	Chair, Land Use Planning Committee
Frank Shaulis	City of Nanticoke
Rosemary Sigmond	Vice President, Coon Industries, Inc.
Sam Sorber	Hanover Township
Joseph Terrana, Esq.	District Director, Congressman Paul Kanjorski's Office
John Varaly	Planning Director, City of Wilkes-Barre
Ronald Wasowski, CSC	King's College
Steve Yokimishyn	Pennsylvania Department of Commerce

Other Contributors	Title and/or Affiliation
John Blake	Executive Director, Northeast Territory Visitors Bureau
Annie Bohlin	Delaware & Lehigh Canal National Heritage Corridor Commission
Dennis Brislin	President, Brislin Construction
Michael Dziak	President & Chief Executive Officer, Earth Conservancy
Nancy Eckert	Manager, Lewith & Freeman Back Mountain Office
George Fenner	Attorney
Raymond Ford	Managing Director, Harris Semiconductor
Russ Griner-Johnson	Director, Pennsylvania Environmental Council, NE Penn. Office
Lee Harshbarger	Pennsylvania State Game Commission
Jim Hilsher	Mericle Commercial Real Estate
Jean Innamorati	Coordinator of Real Estate Transactions, Earth Conservancy
Bob Janosov, Ph.D.	Professor of History, Luzerne County Community College
Paul Kanjorski, Hon.	U.S. House of Representatives
Stephen Koppleman	President, Comwave
Fred Lohman	Greater Wilkes-Barre Chamber of Business & Industry
Robert Mately	Heritage Bank
Vince Matteo	Greater Wilkes-Barre Chamber of Business & Industry
Rob Mericle	President, Mericle Commercial Real Estate
Adrian Meroli	Director of Planning, Luzerne County
Carolyn Mertz	Vice President, Mertz Corporation
Mike Morgan	Vice President & Region Manager, PNC Bank
Larry Newman	Director of Economic Development, City of Wilkes-Barre
Jim O'Karma	Wilkes University
Elizabeth Ortega	Public Relations Director, Earth Conservancy
John Renfer	Executive Administrator, Earth Conservancy
Judy Rimple	Anthracite Scenic Trails Association
Rick Ruggiero	Property Documentation Manager, Earth Conservancy
Ruth Smith	Broker/Owner, Century 21
Thomas Thomas	Document Researcher, Earth Conservancy
Bill Toothill	Dept. of GeoEnvironmental Sciences & Engineering, Wilkes University
Sharon Ward	Greater Wilkes-Barre Chamber of Business & Industry

In addition to EDAW, the consultant team was comprised of the following national, regional, and local consulting firms:

• **Hammer, Siler, George Associates** Silver Spring, Maryland	*Economic and Financial Analysis*
• **Skelly & Loy** Harrisburg, Pennsylvania	*Environmental and Mining Data*
• **Reilly Associates** West Pittson, Pennsylvania	*Utility Systems/Civil Engineering*
• **Borton-Lawson Engineering** Wilkes-Barre, Pennsylvania	*Transportation Engineering*
• **Bohlin Cywinski Jackson** Wilkes-Barre, Pennsylvania	*Architecture*

1.2 Planning Process

The Land Use Plan for the Earth Conservancy land holdings was developed following a planning process typical of large-scale community planning projects. The steps in this process included:

- Data Collection
- Planning Analysis
- Development of Alternative Concepts
- Draft Plan Preparation
- Final Plan Preparation

This planning process involved an open public review involving a series of LUPC meetings and workshops over the twelve-month planning period (see Figure 1-2). Each of these meetings was open to the public, and time was allowed for public input and comment on the data and preliminary planning concepts presented by the consultants. The topics and dates of the LUPC meetings held during the planning period are presented in Table 1-2.

Figure 1-2
Earth Conservancy Land Use Planning Process Timeline

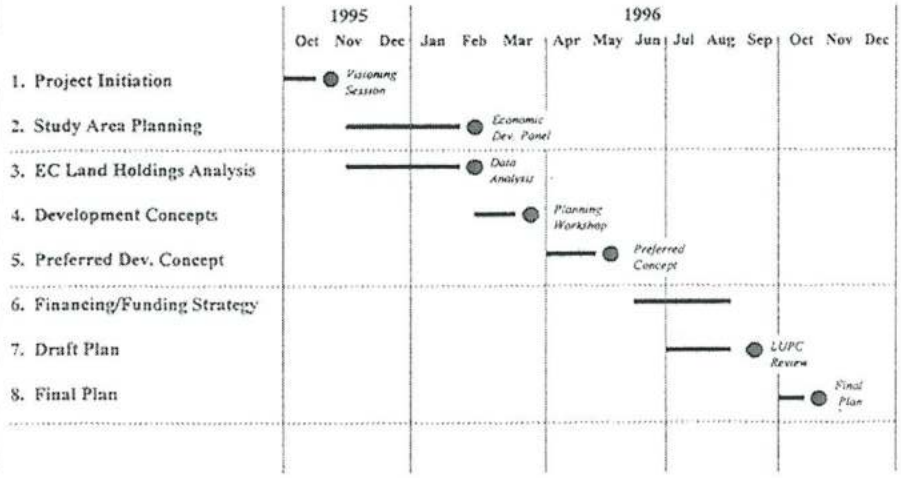


Table 1-2
Chronology of LUPC Meetings/Workshops

Date	Topic
October 1995	***Kick-off Meeting*** - Introduction of consultant team and review of project approach and schedule
November 1995	***Visioning Workshop*** - Identification of long-term goals for the EC parcels and study area
February 1996	***Economic Development Panel*** - A review of regional and local market trends by economic development and real estate professionals
February 1996	***Environmental Data*** - Presentation and review of environmental, mining, transportation and utilities data affecting development suitability of EC lands
March 1996	***Alternative Concepts*** - Presentation and review of three alternative development concepts for EC lands
May 1996	***Preferred Development Concept*** - Presentation and review of the preferred development concept/land use plan, preliminary cost information, and preliminary phasing recommendations
September 1996	***Draft Plan*** - Presentation and review of the proposed Implementation Strategy & Draft Land Use Plan/Report
October 1996	***Final Plan*** - Presentation of the Final Plan/Report


Land Use Planning Committee Meeting at EC offices

The Preferred Development Concept/Land Use Plan also was presented for review and comment to officials of the local municipalities containing EC property, including the Luzerne County Commissioners, during the summer of 1996. These meetings reviewed in detail utilities plans for sewage collection and treatment and water supply and distribution, as well as an overall framework by which municipal officials can evaluate their infrastructure requirements as they relate to such areas as planning, zoning, and fire and police protection. Comments received during these meetings, and from other interested parties during the plan review period, have been incorporated in the Draft Plan as presented in this document.

1.3 Goals

A visioning workshop was held with the LUPC and general public in November 1995 to establish mutual goals for the Earth Conservancy land use planning effort. At that meeting, positive and negative characteristics of the Wyoming Valley were rated by the participants, and lists of appropriate and inappropriate uses for the EC properties were identified. Separate statements were also formulated by the group addressing a long-

term (25-year) vision for the study area surrounding the EC properties. A summary of the workshop is included in Appendix A.2

The common themes that emerged from this group workshop are summarized as follows:

- The community takes pride in the local work ethic and the natural scenery of the area. They also appreciate the benefits afforded the area by its proximity to major highways and metropolitan areas.
- Wyoming Valley residents are frustrated by the continued existence of mining scars and mining-related environmental damage, by the dumping occurring throughout the region, by low-paying jobs and by the lack of cooperation between communities.
- Recreational uses were by far the highest ranked of the appropriate uses for the EC properties. Industrial and residential uses were also considered highly desirable.
- Workshop participants were united in their opposition to future use of the EC lands for landfills or nuclear/hazardous waste disposal. They also want to avoid over-development and poor development of the land.
- As people look into the future 25 years, they envision an area that includes significant recreational and conservation lands, well-planned mixed-use development, preserved scenic mountain ridges, and economic development opportunities to sustain future generations.

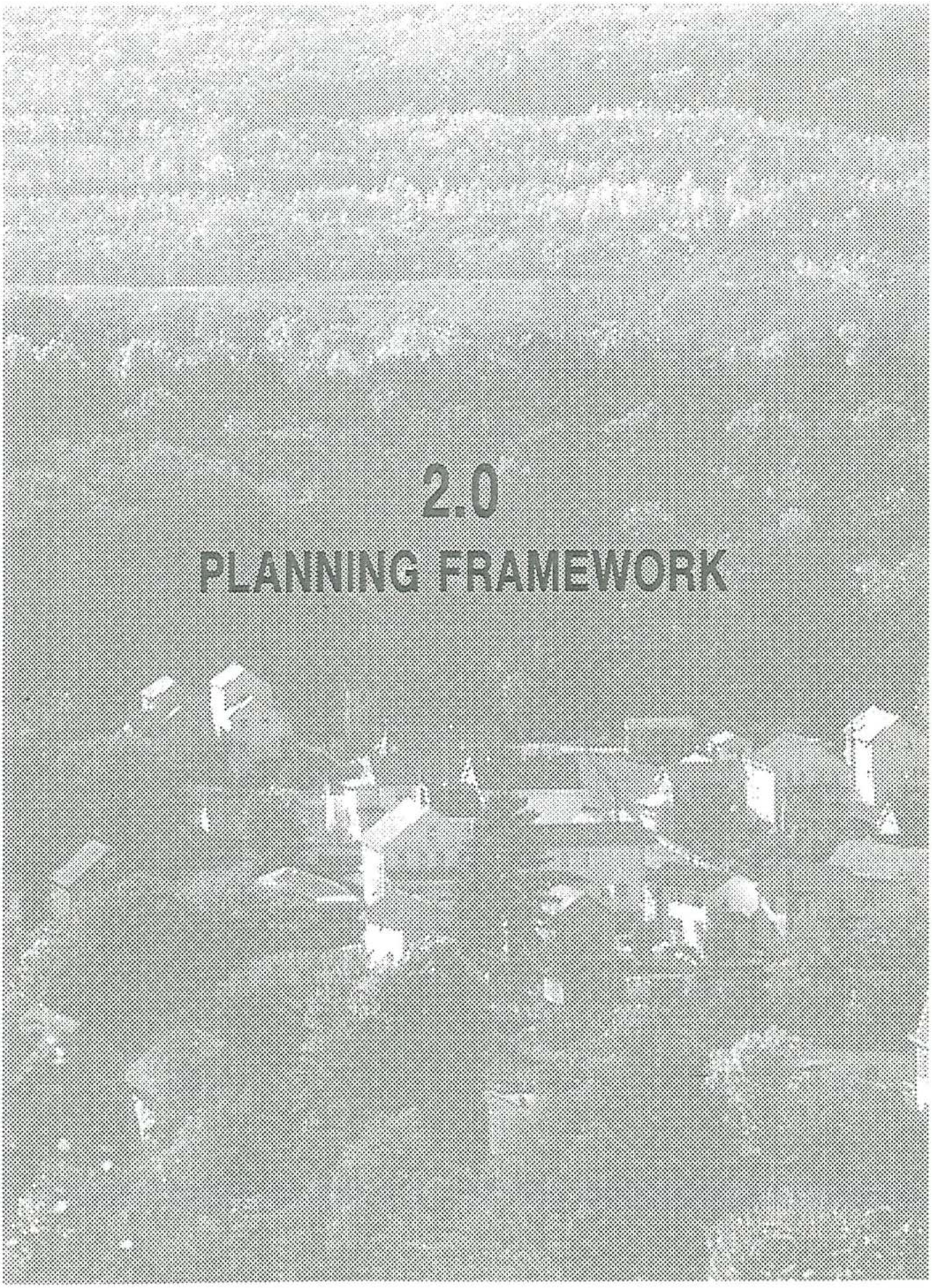
SELECTED 25-YEAR VISION STATEMENTS FOR EARTH CONSERVANCY LAND

- Earth Conservancy in the year 2020 will be well planned property consisting of a mixture of economic opportunity, quality residential development and preserved recreation areas.
- Be the catalyst, creator, and innovator of a vision for future growth and economic stability, while preserving and enhancing environmental and recreation amenities and community pride.
- Stimulate growth while protecting the quality of life.

Workshop Participants
November 1995

1.4 Report Format

The Earth Conservancy Land Use Plan is presented in two documents as follows: a summary document contained herein, which summarizes the planning data and recommended development concepts; and, an appendix document attached separately, which contains a series of separate reports generated during the planning process. These latter reports include the background data used to formulate the consultant team's planning recommendations, as well as the Workshop Summaries of the seven LUPC meetings held during the twelve-month planning period. These reports are provided as separate appendices accompanying and supplementing the information included in this summary report.

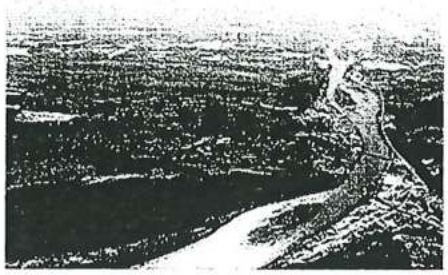


2.0
PLANNING FRAMEWORK

2.0 PLANNING FRAMEWORK

2.1 Regional Characteristics

The region in which the EC properties are located centers on the Susquehanna River in northeastern Pennsylvania. The surrounding counties of Luzerne, Lackawanna, Schuykill and the western parts of Carbon County form an area known as the anthracite region, named for the supply of underground hard coal resources. Luzerne County contains 579,274 acres of land governed by 76 separate municipalities. The following regional analysis focuses on the northern three-quarters of Luzerne County where the EC properties are located. This region is depicted in Figure 2-1.



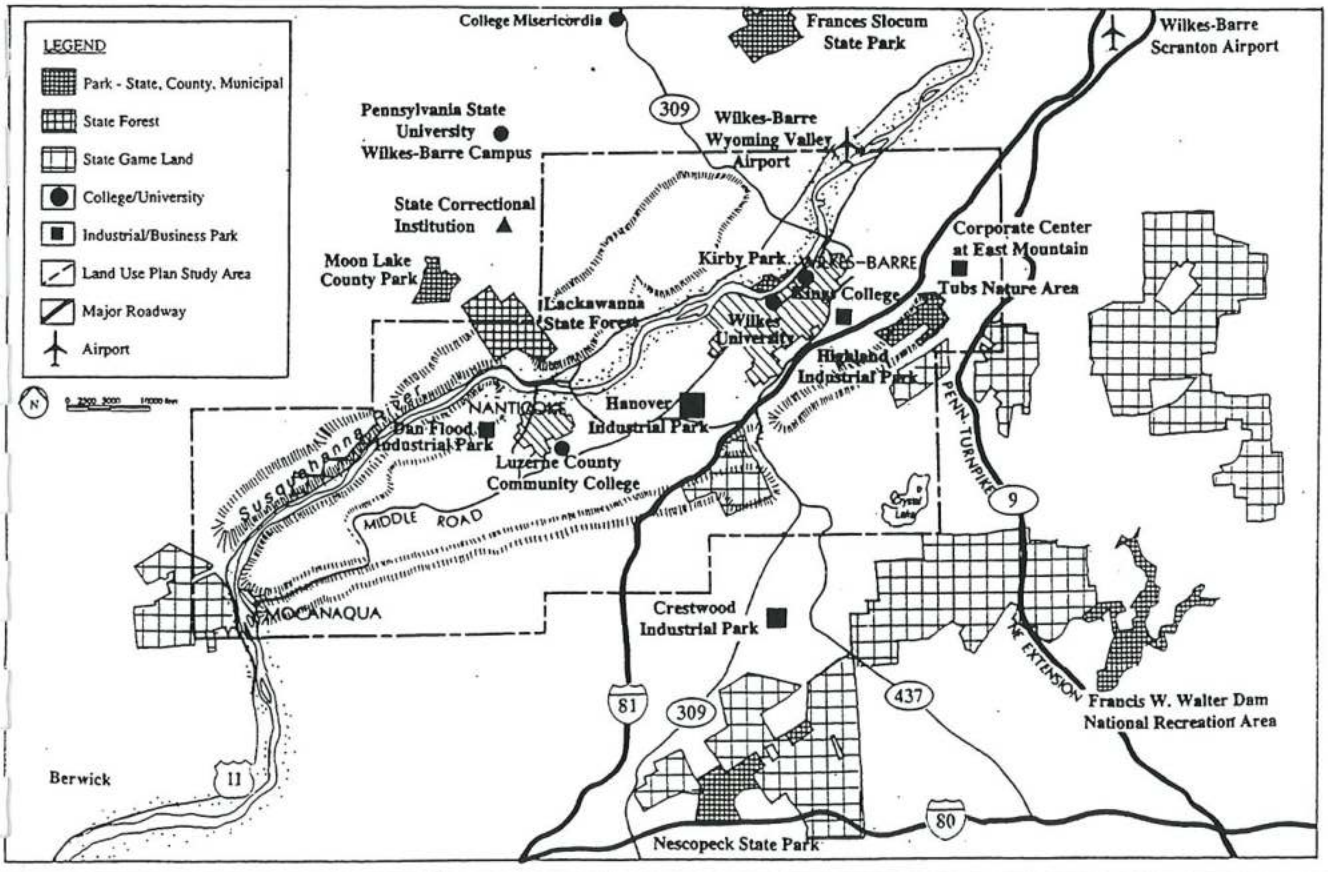
Aerial view of Susquehanna River looking southwest towards Shickshinny & Mocanaqua

2.1.1 Natural Features

Physical Setting

Luzerne County lies within the Valley and Ridge physiographic region of Pennsylvania which is characterized by a series of long, low ridgelines and linear valleys extending from southwest to northeast in parallel sequences. The most prominent topographic feature of the county is the Wyoming Valley, formed by the Susquehanna River.

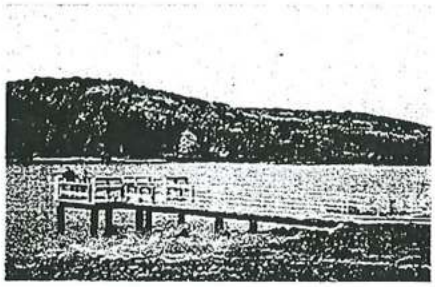
Figure 2-1
Regional Map



The valley is defined by two sets of mountain ranges, rising 1,600 to 1,800 feet above the valley floor. Huntington, Shickshinny, and Larksville mountains form a range to the north of the river, while the Penobscot and Wilkes-Barre Mountain ranges lie to the south. Another prominent range running parallel to the valley further south is the Nescopeck range.

Hydrology

While the Susquehanna River is the major hydrological feature of the region, the County is dotted with water bodies -- glacial lakes, reservoirs, streams, and wetlands. Harvey's Lake, a summer resort destination at the northernmost tip of the county, is the largest natural body of water in eastern Pennsylvania, encompassing 658 acres. Other large water bodies include Huntsville and Pike's Creek Reservoirs, also in the north, and Crystal Lake, at the southeastern foothills of the Penobscot range. Closer to EC properties, the following smaller water bodies are found: Kieler Lake, Wanamie Reservoir, Hanover Reservoir, and Lily Lake. Wanamie and Hanover Reservoirs are located on EC property but no longer function as official reservoirs for the local water supply system.



Scenic lake at Frances Slocum State Park

2.1.2 Transportation

Roadways

Interstate Routes 80, 81, 380, 84, and the Pennsylvania Turnpike Northeast Extension, Route 9, link the region to the major surrounding cities of New York, Philadelphia, and Harrisburg. Wilkes-Barre is located 111 miles from Philadelphia, 130 miles from New York, and 218 miles from Washington, D.C. Other major roadways serving Luzerne County include Routes 11, 309, and 437.

Railroads

Three rail companies currently serve the region -- Conrail, Canadian Pacific, and the Luzerne County Rail Corporation. All three services solely transport freight. In addition to the active lines, there are also several inactive lines, as well as abandoned rail beds, which currently serve as informal recreational trails.

Airports

Of the three airports located in the area, the two major hubs are the Wilkes-Barre/Scranton International Airport, providing jet service and commuter service to the major metropolitan areas in the mid-Atlantic, and the Wilkes-Barre-Wyoming Valley Airport, a general aviation airport located in Forty Fort and Wyoming Boroughs. Another airfield is located in Hazleton.

2.1.3 Open Space/Recreation

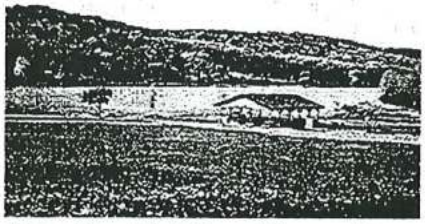
State Game Lands and State Forests

Much of the open space in Luzerne County is owned by the Pennsylvania Game Commission and managed as State Game Lands (SGL). These lands are managed specifically for hunting purposes, but are also used for hiking. There are 33,558 acres of State Game Lands in Luzerne County.

The State Forests in the region are open for hunting, although they are managed primarily for long-term timber production. Two non-contiguous parcels of the Lackawanna State Forest are located within the County, one lying north of Nanticoke across the Susquehanna and another situated in the eastern portion of the County.

State and County Parks

Three State Parks are located in the County, including Francis Slocum State Park (1,034 acres), Nescopeck State Park (2,981 acres), and Ricketts Glen State Park (19,334 acres). Francis Slocum State Park, located in Trucksville, features a 165-acre lake with boat launch and rental, swimming pool, fishing, and scenic hiking trails. Nescopeck State Park, located north of Interstate 80, is an undeveloped natural area that contains several species of rare plants and critical habitats. Ricketts Glen State Park, 25 miles northwest of Wilkes-Barre, provides thousands of acres of woodland mountains and gorges, including 33 waterfalls, 3 large lakes, a beach area, tent camping grounds, trails, and boat access .



Recreational facilities at Frances Slocum State Park

Moon Lake County Park sits just south of Pikes Creek Reservoir, encompassing the 48-acre Moon Lake. The 600-acre park offers pool facilities, boating, camping and picnic areas, a trailer camp and a fitness trail. Another County-run recreation area is the 590-acre Tubs Nature Area, known for its numerous glacial potholes and pools frequented by swimmers. There is also a County recreation area in Forty Fort along the river just south of the Wilkes-Barre Wyoming Valley Airport.

Other Recreational Facilities

Several other recreational facilities are located within the region. The County hosts eight golf courses, two of which are centrally located within the region: the Wyoming Valley Country Club located along Middle Road in Hanover Township and a municipal golf course in the City of Wilkes-Barre. Pocono Downs Racetrack, located on Route 315, offers harness racing events throughout the summer. The area's municipalities and schools also provide numerous ballfields and other facilities for local recreation. And just north of Luzerne County is the newly constructed Lackawanna County Stadium, home of the Triple A Red Baron's baseball team, a new outdoor performing arts facility that

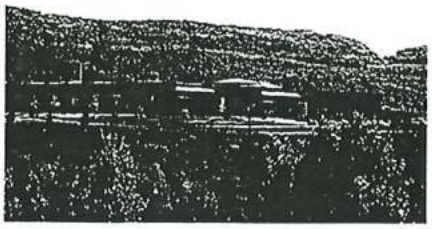
Wyoming Valley Country Club in Hanover Township

accommodates 16,000 persons, and Montage Ski and Summer Recreation Area.

2.1.4 Development Areas

Industrial Parks

Four major industrial parks have been established in the region as the result of active marketing and development activities by the Greater Wilkes-Barre Chamber of Business and Industry. Two thriving industrial parks lie within the valley -- Hanover Industrial Estates and Highland Industrial Park -- and two outside the valley -- Corporate Center at East Mountain and Crestwood Industrial Park. Altogether, these parks contain a total of approximately 2,298 acres and host 66 different companies.



Sallie Mae offices in Hanover Industrial Estates

Institutional Uses

Five higher-education institutions in the region contribute to the area's significant educational and cultural life: College Misericordia, King's College, Luzerne County Community College, Pennsylvania State University -- Wilkes-Barre Campus, and Wilkes University. The combined student enrollment in these institutions in the school year 1994-1995 was 14,350.

Luzerne County Community College in Nanticoke

Other major institutional uses in the region include two State Correctional facilities. The Dallas State Correctional Institute is located north of West Nanticoke in Jackson Township, and the State Correctional Institution at Retreat is situated along the east side of the Susquehanna River north of Glen Lyon in Newport Township.

2.2 Socio-Economic Influences

An overview of the demographics and socio-economic conditions of the region was conducted by Hammer, Siler, George Associates as part of this planning effort. A brief summary of their findings is presented below; see Appendix A.3 for more detailed descriptions.

2.2.1 Population

Overall demographic trends indicate that Luzerne County is experiencing a decline in population. In 1990 the population of Luzerne County was 328,149, a decrease of approximately 4 percent from the essentially stable population levels of the 1970s and 1980s. By contrast, during the same periods, the population of Pennsylvania experienced a slight increase.

The changes in population from 1980 to 1990 were not equally distributed among the different age groups. While the population of Luzerne County declined overall by 4.4 percent during that period, two

age groups experienced population increases: the age group 30 to 44 years increased by 20.4 percent, and the 75 years and older.age group increased by 42.8 percent. All other age groups experienced declining populations.

Table 2-1
Population Trends 1970-1990

				Change 1970-1990	
Jurisdiction	**1970**	**1980**	**1990**	*Number*	*Percent*
Luzerne County	342,301	343,079	328,149	(14,152)	-4.1%
Pennsylvania	11,793,909	11,863,895	11,881,643	87,734	0.75%

Source: U.S. Bureau of the Census; Hammer Siler George Associates (Appendix A.3).

2.2.2 Education & Employment

The educational level of County residents has increased substantially in recent years. Between 1980 and 1990 the number of residents that had earned high school diplomas or had achieved some higher level of education increased by 19.9 percent, to 163,000 persons. During that same period, the number of persons graduating from college and/or earning higher degrees doubled, going from 20,536 in 1980 to 42,202 in 1990.

Young Warrior Run residents

Luzerne County's total employed civilian labor force consisted of 160,900 persons in 1995. This figure represents an increase of 19.2 percent, or 25,900 persons, over the 1980 level. During the 1980s, the unemployment rate decreased from 8.9 percent to 6.1 percent in 1990. However, from 1990 to 1995 the County's unemployment rate increased slightly to 7.3 percent. In June 1996, the unemployment rate was 6.1 percent.

Echoing nationwide trends, manufacturing jobs for Luzerne County residents no longer have the same dominance they once had. In 1980, manufacturing was the largest employment industry of County residents representing 31.4 percent of all employment. By 1990, manufacturing had decreased to 22 percent, but still was one of the top three employment industries in the County. During that period, services increased from 24.6 percent of County employment to 30.4 percent, and wholesale and retail trade increased from 20.0 to 23.3 percent.

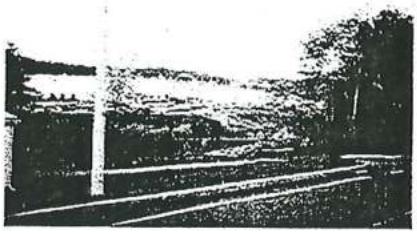
Of particular note, between 1982 and 1992, the total number of jobs in Luzerne County increased by 21.7 percent, while that same figure for Pennsylvania increased by only 15.5 percent -- another indication of the relative success of local economic development organizations and the locational advantages of the region.

2.3 Market Potential

An analysis of the existing and potential future market for specific land uses was conducted by Hammer, Siler, George Associates in the fall of 1995. This information was supplemented by a panel discussion by economic development and real estate professionals that was conducted for the LUPC in February as part of the planning process. Below is a summary of the findings of the market analysis based on the HSGA report included as Appendix A.3.

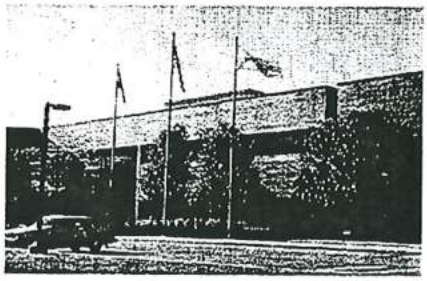
2.3.1 Business & Industry

The region's easy highway access to major metropolitan areas and its position within 500 miles of one-third of the nation's population make it an attractive location for manufacturing, distribution, and back-office purposes. In addition, the region's labor force is the third largest in Pennsylvania and its labor costs are some of the lowest in the Northeast. According to a recent study, the region's labor costs are an estimated one-third lower than those of nearby New York and New Jersey.



Sears distribution facility in Hanover Industrial Estates

The region's "quality of life" offerings also are competitive -- in addition to the open space and recreational attractions described above, the area exhibits the sixth lowest crime rate of the 329 U.S. metropolitan areas and has a lower cost of living than other nearby eastern Pennsylvania metropolitan areas and New Jersey and New York communities.



Nabisco offices in Hanover Industrial Estates

However, several major challenges will need to be overcome to successfully develop and market new industrial sites in the region, including: remediating the environmental constraints unique to previously mined properties; ensuring a sufficient labor force despite the aging of the local population; developing a more highly-trained and educated work force; and, improving the overall quality of retail and residential development.

Combined, the four active industrial parks in the study area -- Hanover Industrial Estates, Highland Industrial Park, Corporate Center at East Mountain, and Crestwood Industrial Park -- have only 576 acres of land available for future industrial development. If the County's current industrial absorption rates continue at 77 acres per year and that industry is located within the study region, industrial development could fill these existing industrial parks within seven years.

Given these market conditions, a market demand for industrial development comprising approximately 2,000 to 2,600 acres over the 25-year planning period was estimated for the EC properties (see Appendix A.3, Economic Input Report by Hammer, Siler, George Associates). Specifically, industrial parks both with and without rail would be required to accommodate warehousing and distribution uses, as well as light and heavy industry. A corporate office/flex office park

and a business and technology park also would be required to serve other business needs.

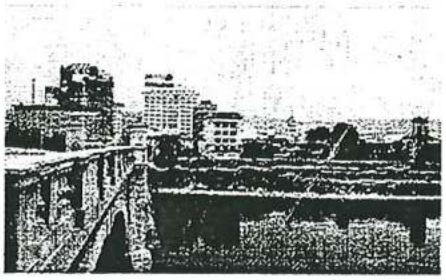
2.3.2 Recreation & Tourism

Northeastern Pennsylvania enjoys an array of natural resources that lend themselves well to recreation activities and tourism. In addition, the area played a significant role in the industrial history of the United States, which also contributes to tourist visitation potential. Many of these recreation and tourism resources are only beginning to be tapped for tourism development.

Public Square in downtown Wilkes-Barre

In the broader region encompassing both Lackawanna and Luzerne Counties, recent developments have significantly increased recreational and cultural tourist attractions. The Montage Ski Resort, just north of Luzerne County, offers downhill and cross-country skiing and snowboarding during the winter and water and alpine slides in the summer. A new open air amphitheater and baseball stadium also at Montage increase the recreational draw of the area. Steamtown National Historic Site in Scranton, which opened in July 1995, includes a 19th-century era working railway hub and museum, and offers local trolley rides.

The history of the coal industry is currently explored at four area facilities. The Lackawanna Coal Mine Tour in Scranton provides below-ground tours of an authentic anthracite coal mine, and in an adjacent building, the Anthracite Heritage Museum provides detailed displays of coal mining life. Eckley Miner's Village is a National Historic District that depicts immigrant life in the early days of mining. Displays at the Wyoming Valley Historical and Geological Society Museum also provide insight into the coal industry's influence on local history.



Historic Market Street Bridge looking towards Wilkes-Barre

Several projects currently in the planning phase could add to the tourism and recreation draw of the area. The Northeastern Pennsylvania Civic Arena and Convention Center will be built in Wilkes-Barre off of I-81; the arena will accommodate 10,000 people for hockey and other sports and entertainment events. As part of the Delaware and Lehigh Canal National Heritage Corridor, funding is in place to complete a Rails-to-Trails project linking the Wyoming Valley to Whitehaven in Luzerne County, then to Bristol, Pennsylvania. Funding has also been provided for improvements to Nescopeck State Park, including camping sites, trails, and one of five environmental education centers in the State. An urban environmental education center also is planned for Riverfront Park in Wilkes-Barre, which includes Nesbitt Park and Kirby Park.

Despite these existing and planned attractions, the region faces some challenges in capitalizing on the tourism market, including: the lack of a major attraction that draws tourists to the area for longer than one day although the recent opening of Steamtown could reverse that trend); a

waning bus and tour group market; limited competitiveness in the meeting/ convention market; the lingering image of a depressed mining area; and, the lack of small inns, bed and breakfasts, and retail offerings that appeal to some tourists.

Analysis of the local recreation and tourism market indicates that sufficient demand likely exists for the creation of a new golf course on the EC properties in conjunction with other resort amenities. In addition to a golf course, the resort could contain a hotel, a lake, and natural areas offering trails and skiing. These types of resort amenities also could be provided in conjunction with new residential development. Approximately 1,000 to 2,000 acres would be required for a resort community.

Additional tourism activity could potentially be generated by the development of an outlet center, or big box retail, on EC property. To be successful, such a center would need to include between 50,000 and 120,000 square feet and should have direct expressway access.

2.3.3 Residential

Residential construction and sales in the region have been stable over the past several years. On average, 763 new residential units have been permitted in Luzerne County per year since 1991, and sales of both new and existing homes have averaged 1,232 per year in the Wilkes-Barre portion of the County. This steady market is due in large part to the growing economy, continuing demand due to household growth and turnovers, and the quality of life in the area.

Typical traditional housing stock

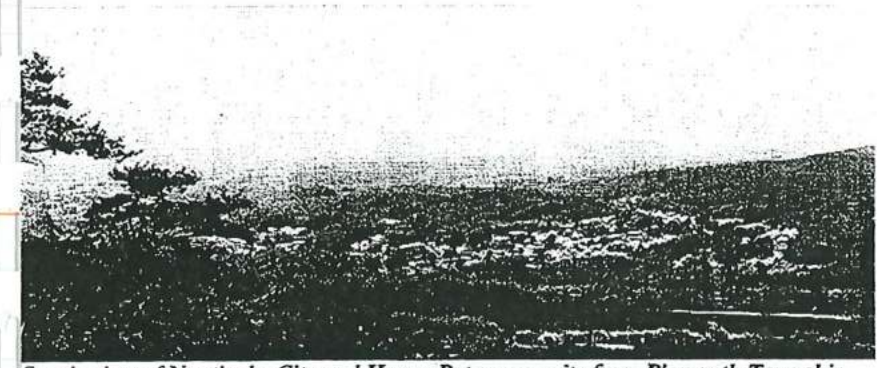
Geographically, most of the new construction has occurred in the Mountaintop and Back Mountain areas which are located in the mountains surrounding Wilkes-Barre. These areas are more suburban and less dense than the cities of Wilkes-Barre, Pittston, Kingston and other communities in the Valley. Residential sales within these municipalities, however, remain strong: Wilkes-Barre is the second most popular location in Luzerne County based on its sales pace in the early 1990s.

The local residential market is characterized by high construction costs that are related to both topography and the lack of a major national or regional builder. Since builders do not generally construct more than four to five homes per year, most of which are customized, it is difficult to provide moderate-cost housing. Most of the recent residential construction in the study area has been in the high price ranges; the only moderate-priced housing available is the existing older housing stock. On the positive side, this shortage of moderately-priced housing creates a pent-up demand and a strong market for such units.

The aging of the population, their reliance on fixed incomes, and their immobility also constrains the regional housing market. However, new

types of housing geared to their needs could represent a residential development opportunity. A retirement community offering amenities for both active and less active elderly could generate strong local interest.

The remarkable views, proximity to the Poconos and the modest success of the higher end housing in the region suggest that a high-quality planned community with recreational amenities would be a unique new offering. Such a community might be able to attract a national builder and, by so doing, offer a range of product types and prices that would also address the need for moderately priced units.



Scenic view of Nanticoke City and Honey Pot community from Plymouth Township

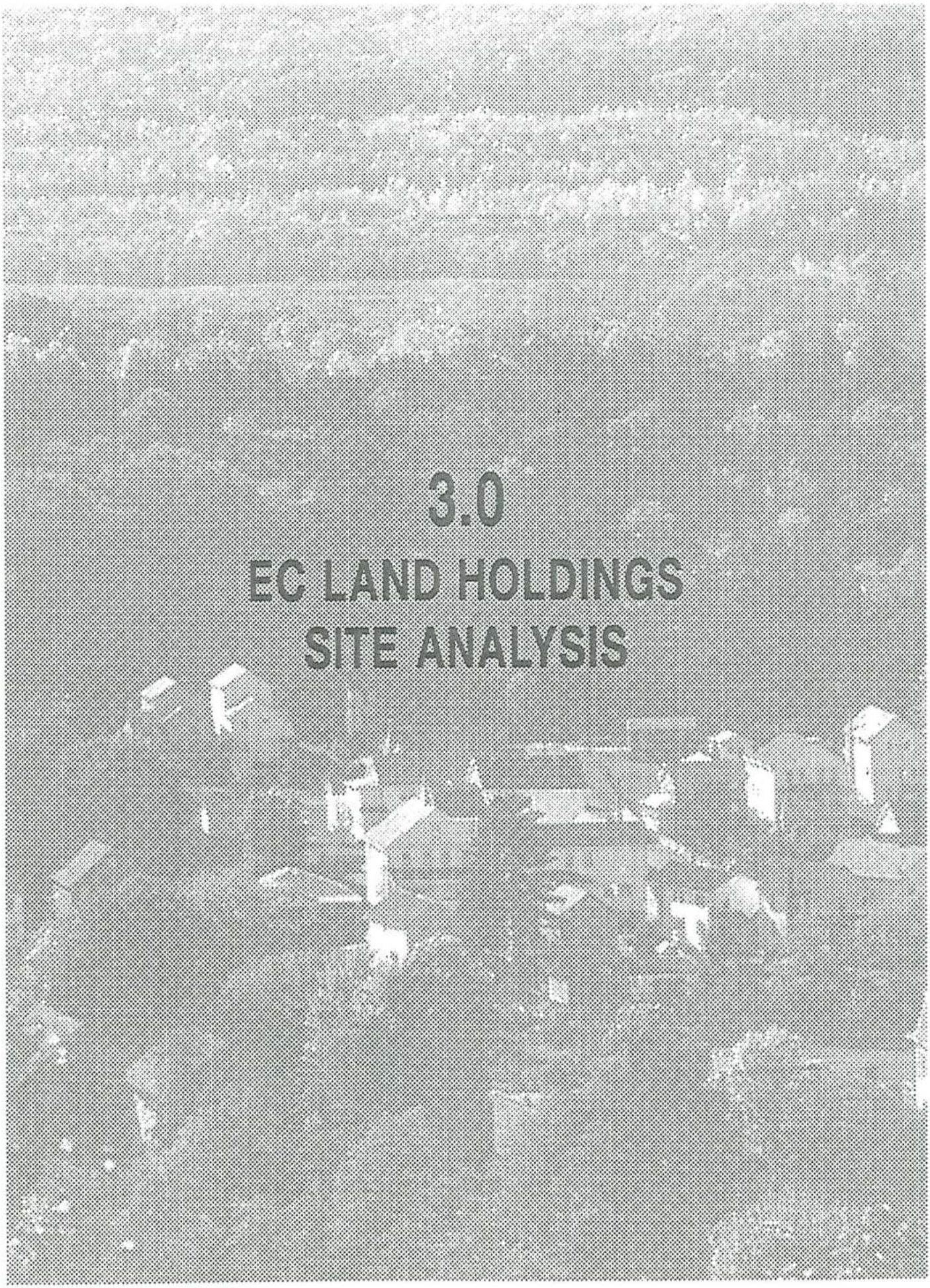
Over the 25-year planning period, it is estimated that EC properties could accommodate between 1,425 and 2,100 residential units on 965 to 1,235 acres. These units would include a variety of single-family home sizes and types, apartment buildings, a retirement community, and second homes.

2.3.4 Retail

Future demand for retail uses in the region will be generated by new industrial and residential development. New industrial and office parks would stimulate the need for small-scale retail services, such as sandwich shops, dry cleaners, etc., while new residential communities would spur demand for other types of retail support uses, such as new grocery and clothing stores. During the 25-year planning period, the proposed industrial and residential development described above could support several retail and service centers of 30,000 to 70,000 square feet each. Over the long term, a new regional shopping center also could likely be supported by regional growth; this center would contain between 250,000 to 500,000 square feet of space. Overall, up to 200 acres of EC property could be devoted to retail uses in the long term.

2.3.5 Summary

The market analysis identified potential land uses and development that would encompass between 4,200 and 6,000 acres of EC land over the 25-year planning period. This development would be market-driven and primarily privately financed. Additional development of EC land would likely occur that would be publicly supported -- for parks and recreation, for example. This latter type of land use would utilize EC property in excess of the 4,200 to 6,000 acres identified above.

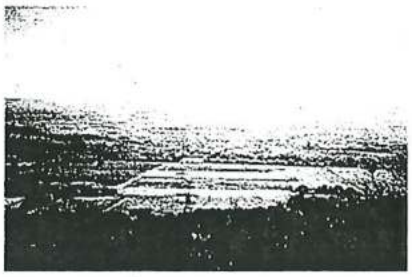


3.0
EC LAND HOLDINGS SITE ANALYSIS

3.0 EC LAND HOLDINGS SITE ANALYSIS

3.1 EC Parcels & Study Area

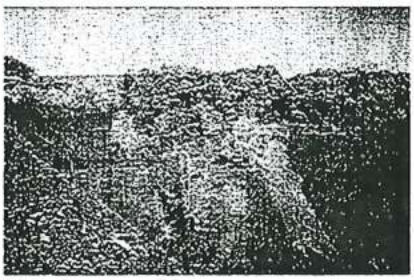
The EC land holdings contain approximately 16,300 acres in non-contiguous parcels scattered throughout the Wyoming Valley. Field investigations of these parcels reveal a wide variety of land characteristics -- some parcels offering breathtaking natural scenery and others serving as unsightly reminders of the mining industry's decline. Extensive research on the characteristics of the EC properties was conducted for the Land Use Plan.



View of Plymouth Township farmlands

A study area for detailed research was defined at the outset of the planning effort; this area spans approximately 165 square miles (over 100,000 acres) and encompasses both EC property and adjacent land not owned by EC. The study area is depicted in Figure 3-1.

A system for EC parcel identification also was developed. Any contiguous EC land that was not separated by a road was identified as a single parcel and numbered according to the municipality within which most of its acreage lies; 130 separate parcels ranging in size from one-quarter of an acre to two thousand acres were identified. Fifty-five parcels were less than five acres in size. The planning effort focused primarily on the 75 parcels that were larger than five acres; these parcels are depicted as "Major EC Parcels" in Figure 3-1. Sub-parcels that correspond to the location of developable land within a parcel were later delineated (identified by: a, b, etc.) and are also shown on Figure 3-1 .



Culm banks on EC property in Conyngham Township

3.2 Environmental Characteristics

Environmental characteristics within the study area were mapped and analyzed to establish baseline conditions affecting development suitability of the Earth Conservancy parcels. This data was initially obtained from secondary sources and mapped utilizing a Geographic Information System (GIS) originally compiled by Wilkes University and transferred to the planning consultant team during the fall of 1995 and winter of 1996. The data mapped included environmental characteristics grouped into two major resource areas: natural resources and cultural features, as follows:

Natural Resources

- Topography/Slopes
- Agricultural Resources
- State Gamelands & Forests
- Wetlands & Hydric Soils
- Surface Water Features
- Floodplains
- Threatened/Endangered Species
- Natural Communities
- Unique Geologic Features

Cultural Features

- Municipal Boundaries
- Places of Worship
- Cemeteries
- Hospitals & Fire Halls
- Schools & Parks
- National Register-Eligible Historic Properties & Districts
- Archaeological Sites/Areas
- Hazardous Waste Sites

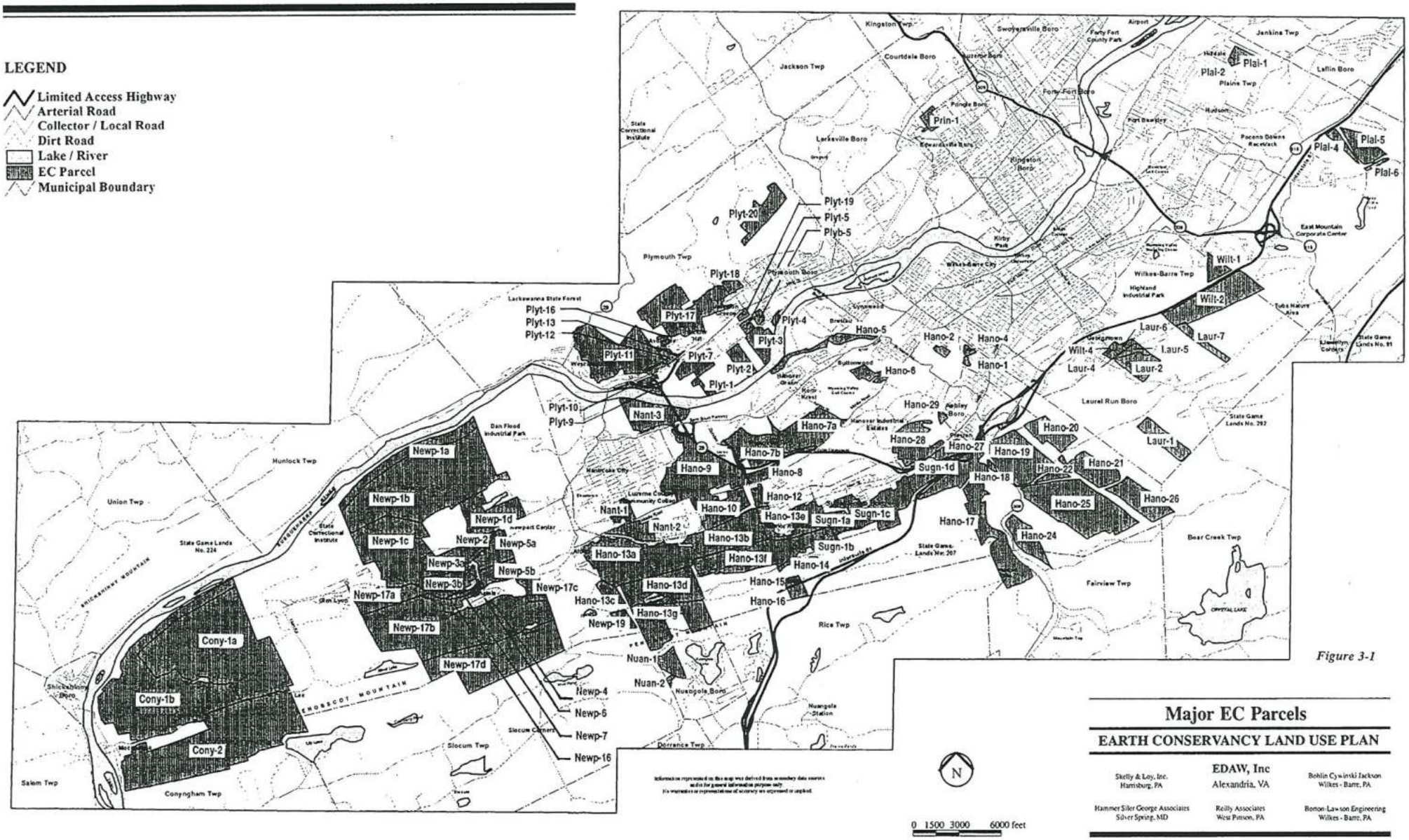


Figure 3-1

Major EC Parcels

EARTH CONSERVANCY LAND USE PLAN

Skelly & Loy, Inc. Harrisburg, PA	**EDAW, Inc** Alexandria, VA	Bohlin Cywinski Jackson Wilkes - Barre, PA
Hammer Siler George Associates Silver Spring, MD	Reilly Associates West Pittston, PA	Boston-Lawson Engineering Wilkes - Barre, PA

Figures 3-2 and 3-3 show the natural and cultural resources, respectively, that were identified within the study area and mapped in an automated GIS format (ArcINFO) for future use by the Earth Conservancy and other organizations involved in the management and development of the land holdings. Table 3-1 provides a summary of the data mapped as part of this inventory of environmental features affecting development on or near the EC land holdings.

Overall, the EC properties and study area contain an abundance of undeveloped natural resources, including prime agricultural soils, wetlands, streams and steep slopes, and numerous cultural facilities. Of particular note with regard to cultural features is the presence of a National Register historic property, the Ashley Planes, on EC property. Now abandoned, this rail line and planes system reflected innovative rail technology that allowed anthracite coal to be hauled over the mountain from 1843 to 1948. The Ashley Planes property crosses an EC parcel adjacent to Route 309 near Mountaintop.

Ruins of the Ashley Planes

3.3 Reclamation/Mining Potential

Skelly & Loy, Inc. of the EDAW consulting team evaluated the potential impacts due to past mining activities on the use of the EC land holdings. The firm also investigated the potential for mineral and other resource development from these properties.

As all local residents are familiar, deep mining was conducted extensively in the Wyoming Valley from the early 1800s to the 1970s to extract valuable anthracite coal resources. This past mining activity has resulted in current problems such as remnant mine openings, ground subsidence, and acid mine water discharges. Surface mining, which became extensive in the 1940s and 1950s, left unreclaimed pits, dangerous highwalls, unstable spoil piles, and acid mine water discharges. Remnant structures used for coal processing and preparation activities also remain on the land posing physical and environmental hazards and a wide array of waste material.

An extensive amount of mining-related information was reviewed to locate mining hazards and predict the development potential remaining within the EC study area. The GIS established for the other resource mapping efforts was used to produce working maps of the mining-related characteristics relevant to this project. Figure 3-4 displays the result of this research and depicts the mining hazards present in the area which could affect land or infrastructure development.

Mining-related features depicted in Figure 3-4 include:

- Vertical Openings & Portals
- Hazardous Equipment Facilities
- Acid Mine Drainage Outfalls
- Refuse Piles
- Abandoned Strip Mines
- Subsidence Prone Areas
- Unstable Slopes
- Refuse/Mine Fires
- Abandoned Ponds

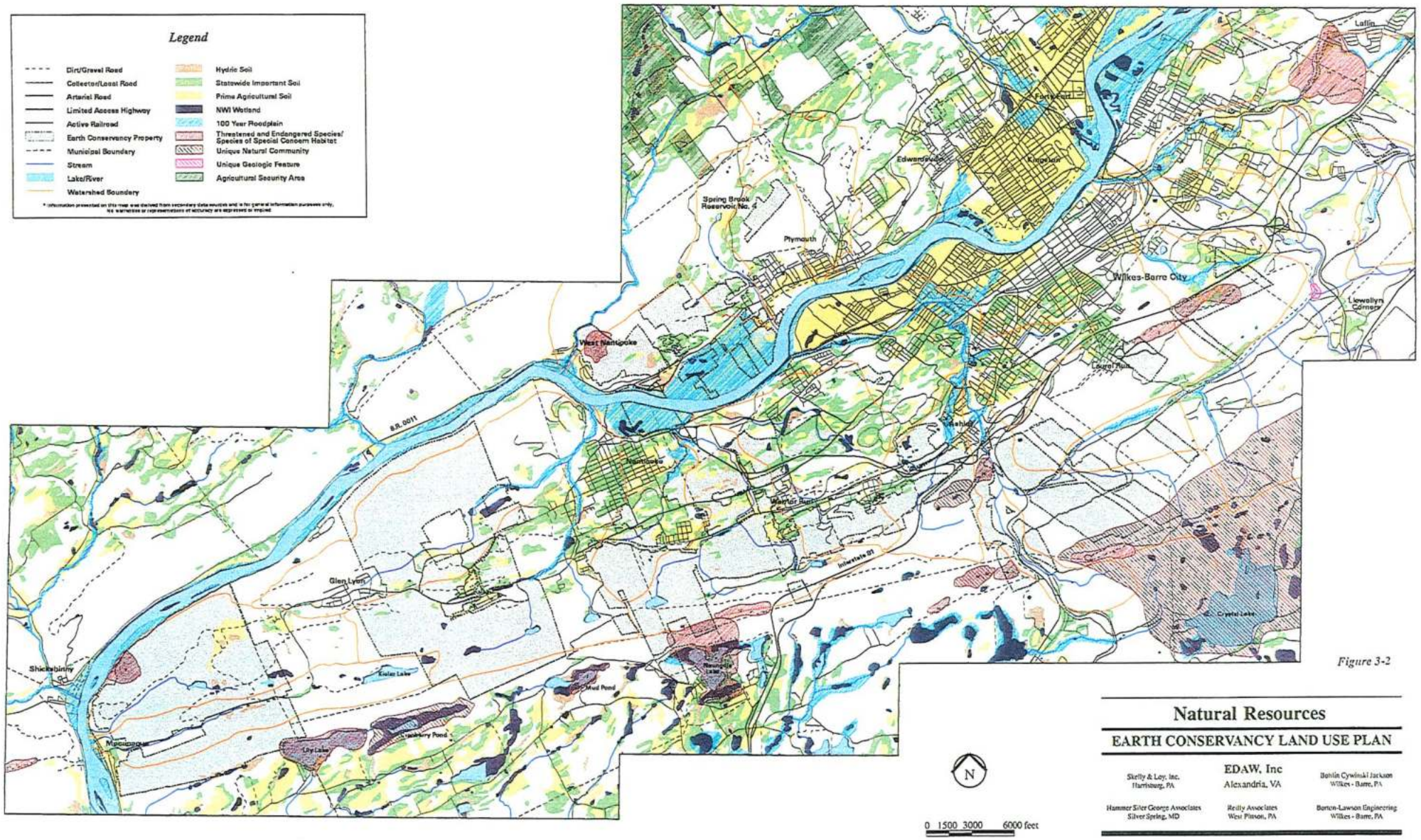


Figure 3-2

Natural Resources

EARTH CONSERVANCY LAND USE PLAN

Skelly & Loy, Inc. Harrisburg, PA

EDAW, Inc Alexandria, VA

Bohlin Cywinski Jackson Wilkes - Barre, PA

Hammer Siler George Associates Silver Spring, MD

Reilly Associates West Pittston, PA

Barton-Lawson Engineering Wilkes - Barre, PA

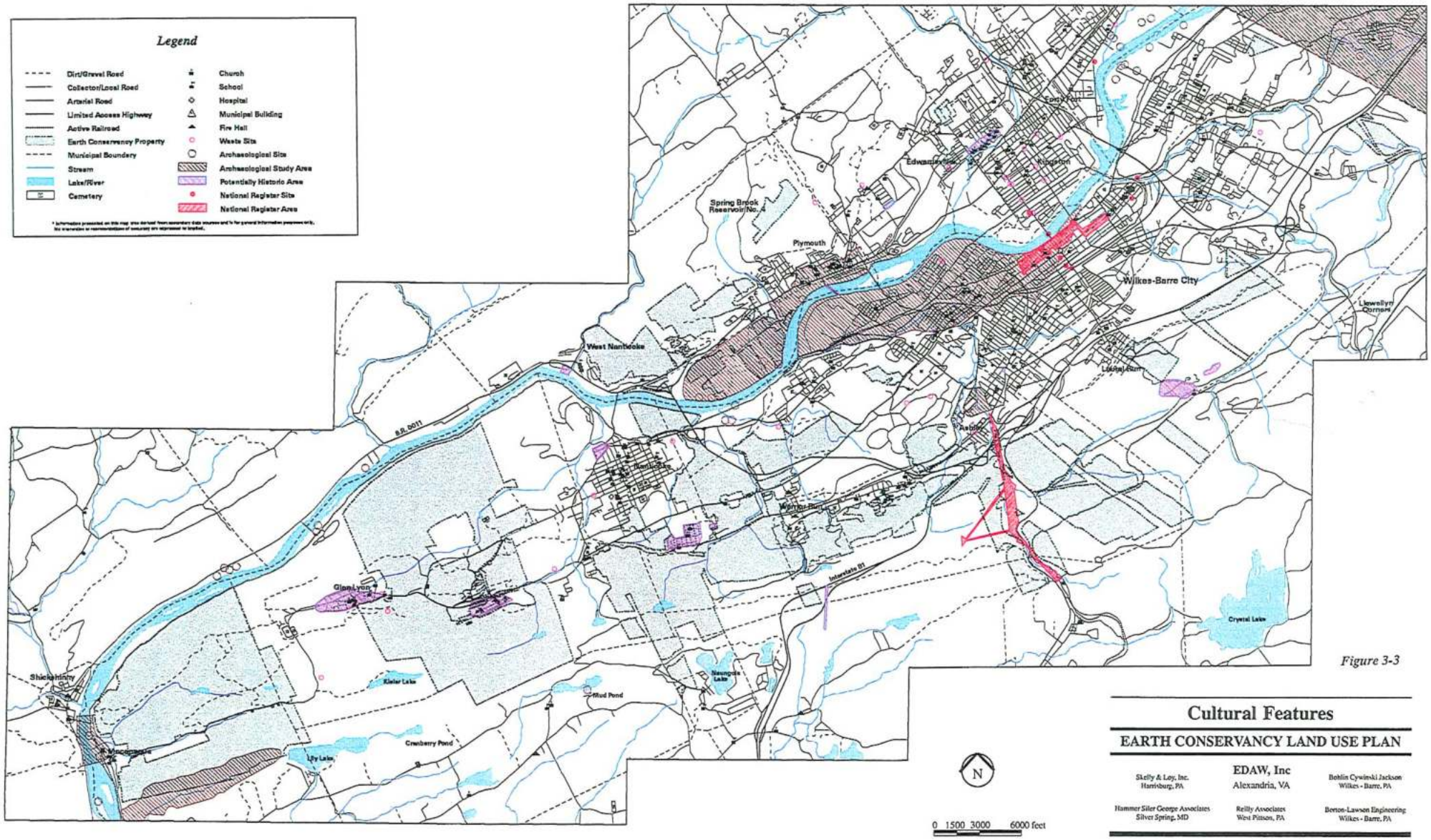


Figure 3-3

Cultural Features

EARTH CONSERVANCY LAND USE PLAN

Skelly & Loy, Inc. Harrisburg, PA

EDAW, Inc Alexandria, VA

Bohlin Cywinski Jackson Wilkes - Barre, PA

Hammer Siler George Associates Silver Spring, MD

Reilly Associates West Pittson, PA

Borton-Lawson Engineering Wilkes - Barre, PA

Table 3-1
Summary of Natural Resources and Cultural Features

Natural Resources	Project Study Area	Earth Conservancy Properties
Agricultural Resources		
Prime Soils (acres)	15,566	951
Statewide Important farmland Soils (acres)	9,288	581
Security Areas (acres)	1,501	0
Wetlands		
National Wetland Inventory, NWI (acres) (a)	3,001	152
Hydric Soils (acres)	2,639	132
Potential Wetland Habitats (acres) (b)	4,660	261
Surface Water Resources		
Number of Streams (linear feet)	65 (704,771)	39 (106,572)
Number of High Quality Streams (linear feet)	1 (4,208)	0 (0)
Number of Trout-Stocked Fisheries (linear feet)	1 (10,853)	0 (0)
Number of Lakes/Ponds (acres)	27 (1,190)	5 (42)
Floodplains (acres)	6,214	600
Threatened/Endangered Species Habitats	15	8 properties
Natural Communities (number)	4	2 areas/3 properties
Unique Geologic Features (number)	1	0
State Forest Land (number)	1	0
State Game Lands (number)	3	0
Slopes Greater than 20% (acres, % coverage)	26,997 (26.1)	6,704 (41.1)
Cultural Features		
Community Features (c)		
Number of Municipalities	38	22
Number of Places of Worship	149	0
Number of Cemeteries (d)	55	5
Number of Hospitals	7	0
Number of Fire Halls	14	0
Number of Schools (e)	72	0
Number of Parks	30	0
Cultural Resources (f)		
Number of National Register Properties/Districts	15	1
Number of Potential Historic Properties (c)	38	2
Number of Archaeological Sites/Area	39 sites/7 areas	3 sites/4 areas/ 10 properties
Known Waste Sites (c, g)	30	2

(a) Excludes riverine wetlands (i.e., Susquehanna River)
(b) Combines acres of NWI wetlands and hydric soils to provide a stronger indicator of potential wetlands
(c) Excludes sites/properties within Wilkes-Barre City limits
(d) One cemetery along perimeter of Earth Conservancy property
(e) Excludes universities
(f) Cultural (historic and archaeological) resources are identified in Appendix A.4.
(g) Data obtained from Environmental Risk Information and Imaging Services database

Note: Information presented was derived from secondary data and is for general purposes only.
Source: Skelly & Loy, 1996 (Appendix A.4).

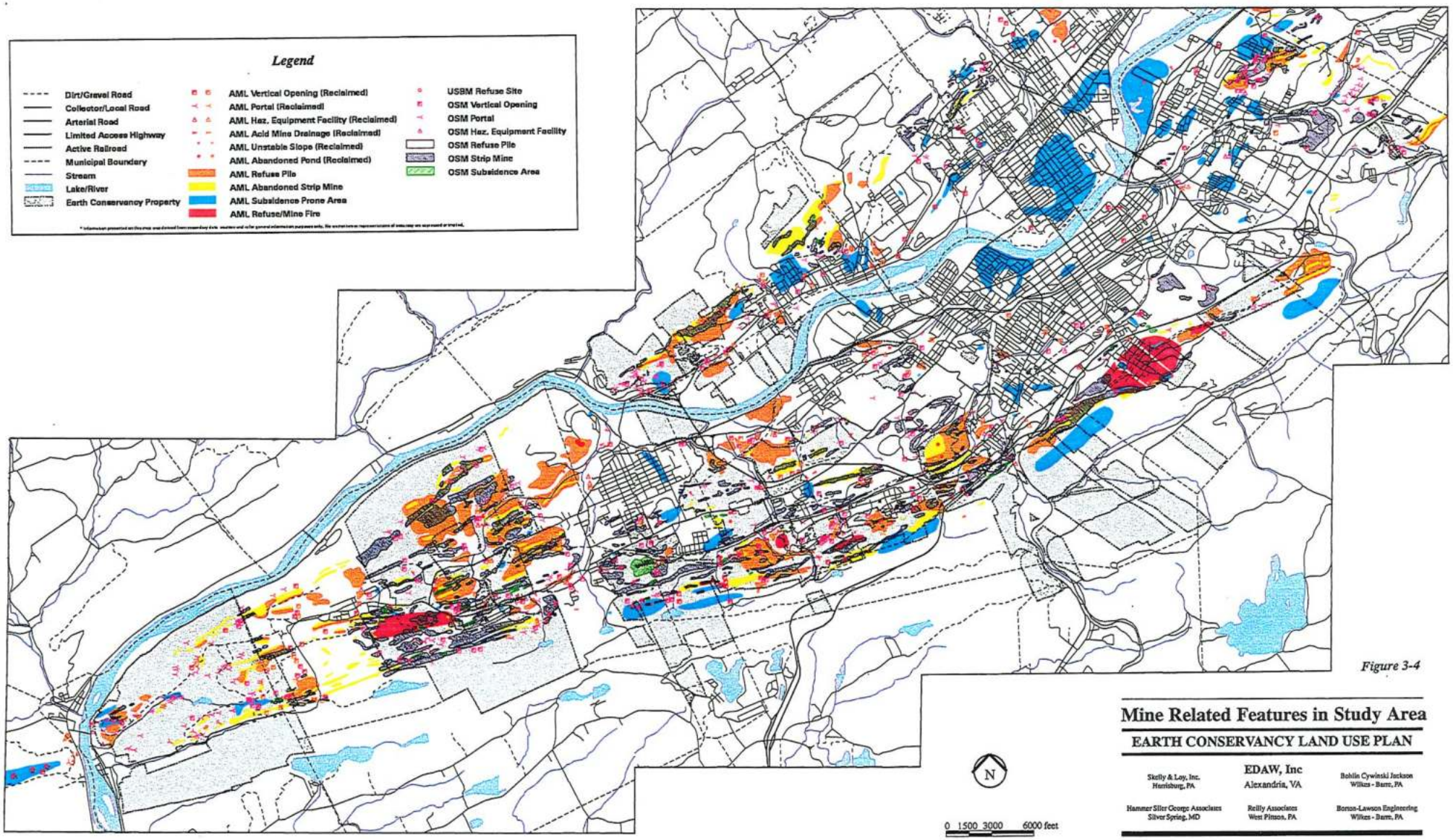


Figure 3-4

Mine Related Features in Study Area

EARTH CONSERVANCY LAND USE PLAN

Skelly & Loy, Inc. Harrisburg, PA

EDAW, Inc Alexandria, VA

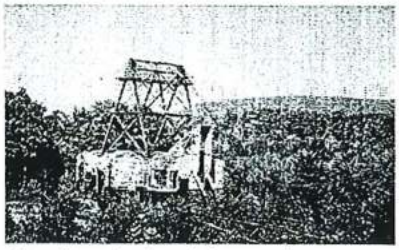
Bohlin Cywinski Jackson Wilkes - Barre, PA

Hammer Siler George Associates Silver Spring, MD

Reilly Associates West Pittson, PA

Boreon-Lawson Engineering Wilkes - Barre, PA

The two main government organizations sponsoring projects to reclaim these mining hazards include the Pennsylvania Department of Environmental Protection (DEP) and the U.S. Dept. of Interior's Office of Surface Mining (OSM). Many projects by these and other agencies, as well as private companies, have already been conducted in the region. Future projects are scheduled by Pennsylvania DEP using funds derived from the OSM coal tax imposed on each ton of coal mined in the U.S.



Abandoned strip mining equipment

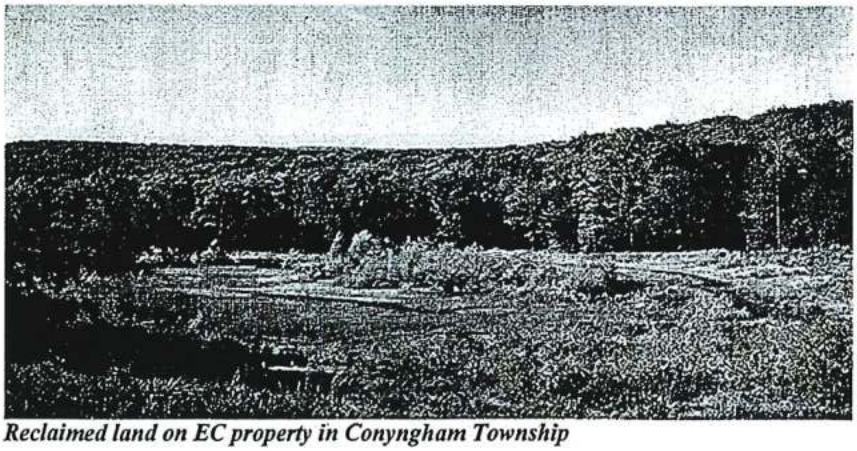
Based on discussions with DEP, potential reclamation projects on EC land holdings are listed in Table-3-2 (see Appendix A.5 for further detail on these projects).

Table 3-2
Projected Pennsylvania DEP Reclamation Projects

Location	Project Name	Approximate Start Date
Hanover Twp	Pine Creek Reservoir	January 1997
	Hanover Back Road	April 1997
Sugar Notch Boro	Sugar Notch	July 1996
Plymouth Twp	Curry Hill	September 1996
Newport Twp	S. Newport Center Cemetery	January 1997
	Wanamie S. Branch	September 1997
	Wanamie S.E.	September 1997
	Ball Field East	January 1996
Conyngham Twp	S.W. St. Michael's Cemetery	September 1997
	Black Creek Source	September 1997

Source: Skelly & Loy, Inc., 1996 (Appendix A.5).

Costs have been estimated to reclaim the previous mining hazards on the Earth Conservancy properties. These cost estimates are based on professional experience and available data from the Pennsylvania DEP; field research and further detailed study for each reclamation area is required to provide more definitive or accurate costs. Table 3-3 provides a summary by parcel of the estimated costs and the estimated unreclaimed acreage affected by past mining activities.



Reclaimed land on EC property in Conyngham Township

Table 3-3
Estimated Reclamation Costs for EC Parcels

Parcel Number	Unreclaimed Mining Impacted Acres	Reclamation Estimate w/ Mine Fire	Mine Fire Reclamation Cost
Ashl-1	0	$0	$0
Cony-1	213	$65,925,000	$0
Cony-2	0	$0	$0
Hano-1 - 3	0	$0	$0
Hano-4	3	$20,000	$0
Hano-5	15	$75,000	$0
Hano-6	4	$280,000	$0
Hano-7	104	$810,000	$0
Hano-8	0	$0	$0
Hano-9	33	$425,000	$0
Hano-10	14	$530,000	$0
Hano-11	0	$0	$0
Hano-12	2	$30,000	$0
Hano-13	374	$7,211,000	$0
Hano-14	1	$50,000	$0
Hano-15, 16	0	$0	$0
Hano-17	0	$180,000	$0
Hano-18	0	$0	$0
Hano-19	22	$460,000	$0
Hano-20	1	$3,000	$0
Hano-21 - 26	0	$0	$0
Hano-27	25	$125,000	$0
Hano-28	121	$830,000	$0
Hano-29	0	$0	$0
Laur-1	0	$0	$0
Laur-2 - 5*	24	$146,000,000	$146,000,000
Nant-1, 3	0	$0	$0
Nant -2	6	$30,000	$0
Newp-1	505	$59,660,000	$0
Newp-2	0	$0	$0
Newp-3	108	$1,270,000	$0
Newp-4	0	$0	$0
Newp-5	55	$455,000	$0
Newp-6	0	$180,000	$0
Newp-7 - 15	0	$0	$0
Newp 16	4	$100,000	$0
Newp 17*	187	$183,200,000	$183,000,000
Newp-18, 19	0	$0	$0
Nuan-1, 2	0	$0	$0
Plai-1	18	$365,000	$0
Plai-2	2	$10,000	$0
Plai-3	0	$0	$0
Plai-4	2	$50,000	$0
Plai-5	8	$42,000	$0
Plai-6, 7, 8	0	$0	$0
Plai-9**	2	$100,000	$0
Plai-10, 11, 12	0	$0	$0
Plai-13**	1	$100,000	$0
Plyb-1 - 4	0	$0	$0
Plyb-5	6	$75,000	$0
Plyt-1 - 6	0	$0	$0
Plyt-7	29	$145,000	$0
Plyt-8, 9	1	$0	$0
Plyt-10	5	$250,000	$0
Plyt-11	56	$10,707,000	$0
Plyt-12 - 16	0	$0	$0
Plyt-17	170	$35,975,000	$0
Plyt-18	0	$0	$0
Plyt-19	0	$180,000	$0
Plyt-20	0	$0	$0
Prin-1	1	$180,000	$0
Sugn-1*	200	$10,080,000	$7,300,000
Sugn-2 - 13	0	$0	$0
Warr-1 - 4	0	$0	$0
Wilc-6**	0	$50,000	$0
Wilc-1 - 5, 7	0	$0	$0
Wilt-1	0	$0	$0
Wilt 2*	39	$2,220,000	$2,040,000
Wilt-3	0	$0	$0
Wilt 4*	8	$4,080,000	$4,080,000
Total	**2,369**	**$532,458,000**	**$342,420,000**
Approx. Total Cost without Mine Fire		**$190,038,000**	

* Parcel with mine fire. Reclamation costs include cost of extinguishing mine fire; however, mine fire reclamation is assumed prohibitive for purposes of this report. See Table 6-3 for reclamation costs without mine fire by parcel.

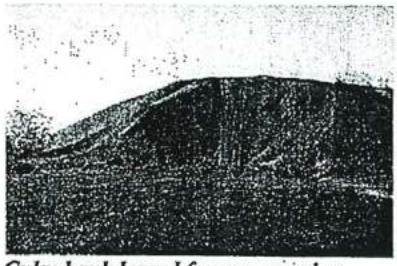
** Reclamation costs not included in Table 6-3 because parcel size is less than 5 acres.

Note: Reclamation costs exclude remediation of acid mine drainage.

Source: Skelly & Loy, Inc., 1996 (Appendix A.5 and personal communication).

On-going mining-related activities have been required to obtain permits for many years. Active and inactive mining permits within the study area were researched and mapped. This research revealed 27 active permits on 17,121 acres, including 12 active permits within the EC parcels (see Appendix A.5). The current active permits are held by companies that trace mineral rights back to leases made prior to the Blue Coal Company bankruptcy. These permits are important as they can potentially delay land development within the permitted area until the final release date of the permit.

Potential mineral resources were researched for the EC land holdings as part of the mining research conducted for this study. DEP and OSM data as well as reviews of topographic maps, aerial photography, and other available data were used in this research effort. The estimated tons of coal at the most likely remaining coal reserve tracts and the strip ratios (amount of overburden in cubic yards that has to be removed to recover a ton of coal) are provided in Table 3-4. Strip ratios of less than 1:50 are typically required to make mining coal reserves potentially profitable. This research revealed only one tract -- the Baltimore Tract, or Wilt-2, -- as the only parcel having realistic, although still marginal, mining potential of the tracts investigated. If marketable, modern surface mining techniques would be used to recover these resources with reclamation required following the mining operations.



Culm bank leased for reprocessing

Table 3-4
Estimated Surface Mine Coal Resources

Tract Name	Parcel #	Estimated Coal Tonnage	Estimated Stripping Ratio
Baltimore	Wilt-2	821,347	48.70
Sugar Notch	Sugn-1c	436,353	48.38
Truesdale	Hano-13a,b,d	433,986	61.45
Glen Nan	Newp-1a,d Newp-5a,b	434,867	81.67
Wanamie 1	Newp-1b,c Newp-3a,b	364,363	81.32
Wanamie 2	Newp-17b	736,474	80.46
West End 1	Cony-1a	162,093	109.68
West End 2	Cony-1a,b	371,317	83.79

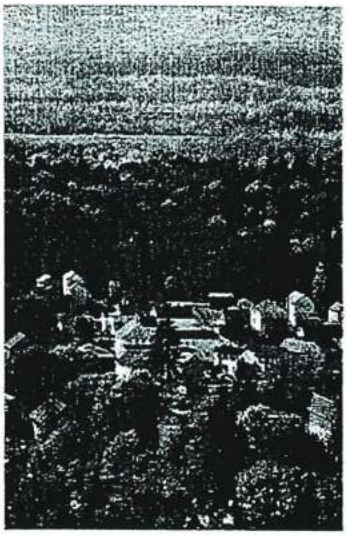
Source: Skelly & Loy, Inc., 1996 (Appendix A.5).

Culm banks were also researched for use as co-generation material and stone product. Some potential exists for the use of this material for fuel supplies; in fact, the Huber (Hano-28), Loomis (Hano-7b), West End (Cony-1b), Preston (Hano-27) and Reynolds (Plyb-5) banks have current leases in effect for this purpose. Other banks with potential require further investigation to determine the extent of recoverable material at the banks, if any, as well as the silt ponds near coal processing breakers.

In summary, the recoverable resources on or under the EC land parcels were far less than originally predicted in earlier estimates prepared during the Blue Coal Company bankruptcy proceedings. Further investigation is required to more accurately determine if any coal or other mineral resources on these lands are marketable at current, or future, sale values.

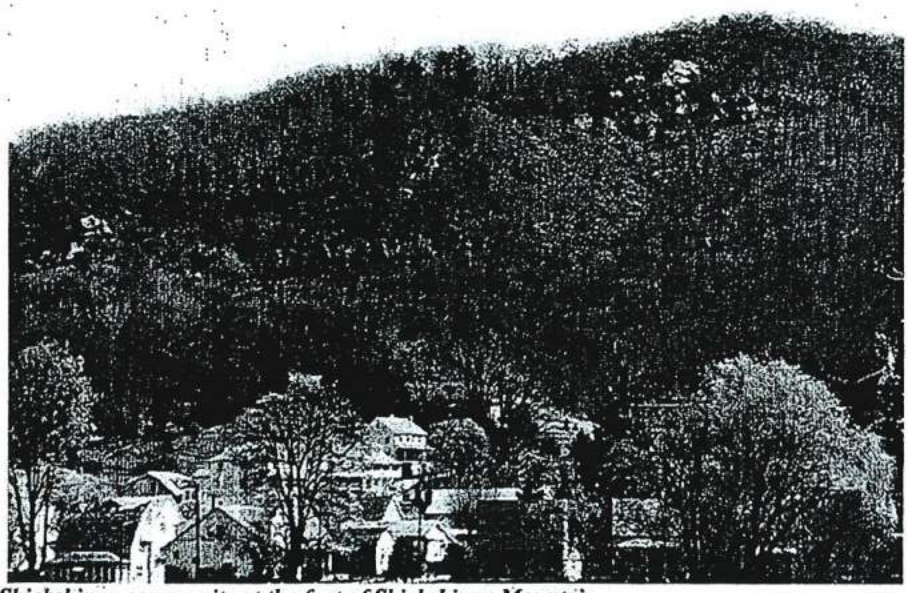
3.4 Land Development Patterns

Generalized land use information was collected and mapped in the form of land development patterns within the study area (Figure 3-5). This information was compiled from U.S. Geological Survey data and includes the following land areas: major commercial areas, mixed-use development areas, institutional uses, industrial parks, state gamelands, state forest land, and parkland. This information was entered as a data layer in the Earth Conservancy GIS and used to compare proposed uses with existing adjacent development within the study area.



Historic Glen Lyon community in Newport Township

Many of the communities within the EC study area have not been subjected to major land development pressures over the last twenty years and thus retain their original street patterns and clustered form. These boroughs and villages, including Sugar Notch, Warrior Run, the Hanover section of Nanticoke, Wanamie, Glen Lyon, Lee, and Mocanaqua, appear as isolated nodes of mixed-use development amidst currently undeveloped land. These intact communities represent opportunities for preservation and enhancement of traditional town centers .



Shickshinny community at the foot of Shickshinny Mountain

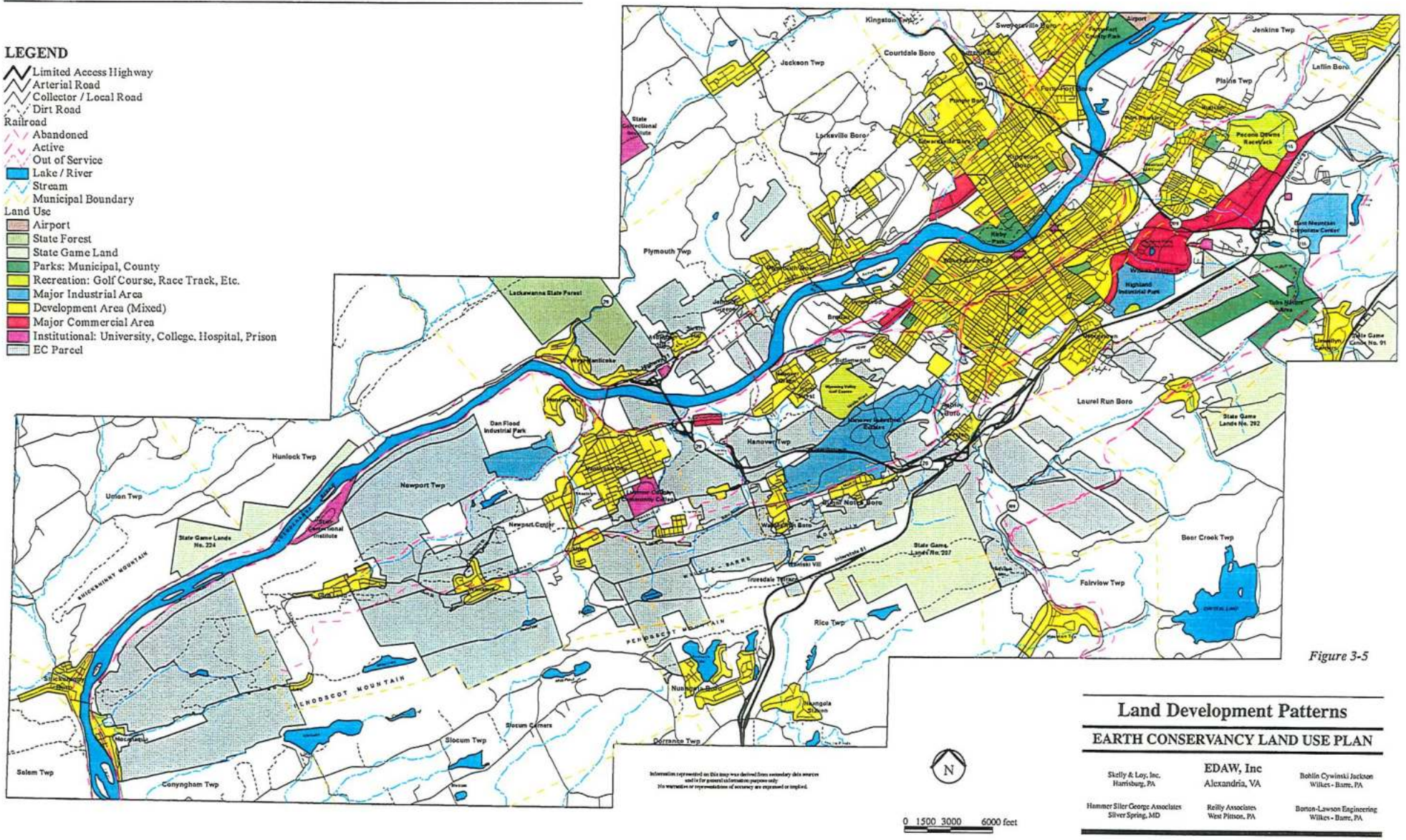


Figure 3-5

Land Development Patterns

EARTH CONSERVANCY LAND USE PLAN

Skelly & Loy, Inc. Harrisburg, PA

EDAW, Inc Alexandria, VA

Boblin Cywinski Jackson Wilkes - Barre, PA

Hammer Siler George Associates Silver Spring, MD

Reilly Associates West Pittson, PA

Borton-Lawson Engineering Wilkes - Barre, PA

3.5 Transportation System

Transportation systems within the EC study area were analyzed by Borton-Lawson Engineering, Inc. (BLE) of the EDAW consulting team. In order to address the transportation systems, two steps of the Pennsylvania Department of Transportation's (PennDOT) ten-step Transportation Project Development Process (TPDP) were performed in conjunction with the land use planning effort. These two steps included Step 3, which consists of a needs analysis summarizing the existing and predicted traffic conditions in the study area, and Step 4, an analysis of improvement alternatives to meet these needs. Steps 1 and 2 consist of internal administrative activities and determining the scope of the technical studies, and are typically performed by PennDOT. Once the Land Use Plan has been approved, the other steps in the process will be initiated in cooperation with PennDOT for new roadway improvements included in the first phase of development recommended in the plan.

Area roadway

Regional access serving the Wilkes-Barre area consists of I-80 and I-81 and the Northeast Extension of the Pennsylvania Turnpike, Route 9. The EC land holdings are clustered into three general sub-areas: along the I-81 corridor between the Nanticoke Interchange (Exit 44) to the Wilkes-Barre/Bear Creek Interchange (Exit 47); along the State Route (S.R.) 0029 corridor in Hanover and S.R. 0011 corridor in Plymouth; and in rural areas served primarily by S.R. 3004 (Middle Road) in the Newport and Conyngham townships (see Figure 3-1). Because of the absence of a principal arterial roadway in the Middle Road corridor south of S.R. 0029, a new roadway is seen as a potential solution and is the focus of the transportation planning included in this study.

The primary roadways within the study area include:

Limited Access:

- S.R. 0029 (South Cross Valley Expressway)

Minor Arterials:

- S.R. 2008 (from S.R. 0029 to Middle road)
- S.R. 2002 (Main Street, Nanticoke)
- S.R. 3001 (between S.R. 2008/3003 and S.R. 0011)
- S.R. 3003 (Alden)

Major Collectors:

- S.R. 3004 (Middle Road to Mocanaqua)
- S.R. 3001 (S.R. 3006 to S.R. 2008/3004 - Penobscot Mountain)
- S.R. 3002 (Newport Street)
- S.R. 2010 (S.R. 0029 to S.R. 2008 - Back Road)
- S.R. 0239 (Main Street in Mocanaqua)

Two rail companies, Canadian Pacific Rail Corporation and Luzerne County Rail Corporation, provide rail service within the study area. An active rail line parallels the Susquehanna River with spur lines that traverse Wilkes-Barre and service industrial properties on the outskirts of Wilkes-Barre City, including Hanover Industrial Estates. Discussions are currently underway to extend this rail line in Hanover Industrial Estates to other industrial users in the park.

Rural path

Other transportation modes within the study area include bus service, which is provided by the Luzerne County Transportation Authority. The current service area extends as far south as Glen Lyon on Middle Road. A local community group, Greenways Coalition, is active in converting some of the numerous abandoned railroad rights-of-way throughout the area into biking and hiking trails.

Transportation needs within the EC study area were established through an evaluation of existing physical conditions, transportation demands, social service requirements, economic development and community and regional planning considerations. The following organizations, agencies and communities were consulted and provided information for this analysis:

- Pennsylvania Department of Transportation, District 4-0
- Luzerne County Planning Commission
- Luzerne County Emergency Management
- Luzerne County Community College
- Luzerne County Rail Authority
- CP Rail System
- CONRAIL
- Luzerne County Transit Authority
- Earth Conservancy Land Use Planning Committee
- Greenways Coalition
- Municipal Governments

The results of the analysis determined the need for short-term and long-term improvements to improve the safety and efficiency of the transportation network as it exists now and as it would be developed to meet the needs of expected changes in future traffic volumes. This need was defined based on the following factors:

- Inadequate service levels
- High accident rates
- Poor access to Luzerne County Community College (LCCC)
- Roadway network is unable to accommodate truck traffic and planned growth in the corridor
- Geometric deficiencies

Further detail on these factors is provided in Appendix A.7, *Transportation System Report* by Borton-Lawson Engineering. The project need was used as the initial step in developing alternative alignments that are included and described in Chapter 5 of this report.

3.6 Utilities Systems

Five separate utilities systems were analyzed as part of the planning process by Reilly Associates: water, sanitary sewer, electric, gas, and telecommunications. Information on these systems was obtained from the individual municipalities and authorities which own the lines, the Pennsylvania DEP; and the Wyoming Valley Sanitary Authority (WVSA). Each utility system is discussed separately below.

3.6.1 Water

Water is supplied throughout the EC planning area by the Pennsylvania American Water Company (PAWC). PAWC recently obtained ownership of this utility when it purchased the entire water division of Pennsylvania Gas and Water Company (PG&W) in February 1996.

Water for the EC land parcels is supplied by two main sources: the Ceasetown plant at Pikes Creek Reservoir along S.R. 0029 and the Crystal Lake Plant located in Bear Creek Township. The Ceasetown system has an approximate unused capacity of 5 million gallons per day (MGD) while the Crystal Lake system has an unused capacity of approximately 1.5 MGD.

Both systems are essentially gravity systems, which provides ample water pressure and flow rates in the valley but would require booster pumps and storage tanks to service new development and users at higher elevations.

The areas where the water system can be most easily expanded is in the center of the valley near the larger water supply mains (see Figure 5-8). These areas include parcels adjoining S.R. 29 in Hanover Township and Nanticoke and Lower Askam south of Warrior Run Borough. The more difficult areas to service include areas in the hill sections of Sugar Notch Borough, Warrior Run Borough, Hanover Township, Newport Township and Plymouth Township. Conyngham Township is difficult simply due to its distance from a major supply main.

Table 3-5
Water System Capacity
(million gallons per day)

Water Reservoir	Safe Yield	1995 Ave. Demand	Permitted Capacity	Max. Demand	Estimated Capacity
• Ceasetown	14.5	9.2	16	11.1	4.9
• Crystal Lake	5.7	3.9	6.5	4.8	1.7
• Watres	12.8	11.3	16	13	1.5
• Hillside	6.6	2.3	6	4	2

Source: Reilly Associates, 1996 (Appendix A.6).

The water company is a public utility and PUC regulated. For the most part, it will be necessary for EC to include in its development cost the full expense for extending the water mains to its properties. In addition, it is necessary to pay an additional fee in order to have the water company accept ownership of the lines.

3.6.2 Sanitary Sewer

There are two sewage treatment facilities which service the EC property area. The smaller is a 0.75 MGD plant located in Mocanaqua and owned by the Sanitary Sewer Authority of the borough of Shickshinny (SSABS). This plant treats sewage generated in the southern end of the County from Shickshinny, Mocanaqua, a portion of Salem Township, and the Retreat Prison. The plant has limited capacity which affects the cost and extent of development possible in Conyngham.

The larger plant is the Wyoming Valley Sanitary Authority (WVSA) facility located in Hanover Township along the Susquehanna River. This plant is a regional facility which services all of the valley communities from the northern County line south to Newport Township. The plant has a permitted treatment capacity of 32 MGD and currently has an average dry weather flow of 23 MGD.

Table 3-6
Sewer Treatment Plant Capacity
(million gallons per day)

Sewage Plant	Permitted Capacity	1995 Ave. Flow	Estimated Capacity
• WVSA	32	23	9
• SSABS-Shickshinny	0.45	0.43	0.02

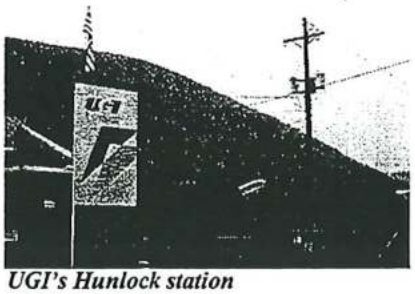
Source: Reilly Associates, 1996 (Appendix A.6).

Sewage collection systems are all owned by the individual boroughs, townships, cities or their respective sewer authorities. These systems collect the sewage and transport it the WVSA pumping stations and interceptors (see Figure 5-9). Many of the systems are older, which could affect the larger development proposals on EC parcels, and often are combined with storm water collection systems, which may require separation as part of the development process to meet modern water quality standards.

3.6.3 Electric

Two electric utility companies service the EC properties. Pennsylvania Power and Light Company (PP&L) is the provider on the east side of the Susquehanna River from Wilkes Barre City and north, and UGI Utilities, Inc. Electric Service Division (UGI) services the remainder of the study area on the south side of the river and south of Wilkes-Barre, which includes the majority of the EC properties. Both utilities have sufficient

excess capacity to provide electricity to the region and are connected to the national power grid which can augment their electric generating capacity if necessary.



UGI's Hunlock station

Both UGI and PP&L are PUC regulated utilities and would extend their lines and upgrade their service to provide service to the EC properties without cost to EC. EC or the developing entity on EC parcels would have to bear the cost for underground manholes and conduits, which are not required in industrial areas but probably would be in new residential developments.

3.6.4 Gas

PG Energy, Inc. (PGE) is the supplier of gas to the southern Luzerne County area. Gas is sourced from a natural gas pipeline owned by Transco which traverses the valley from Wyoming Borough in the west, through Plains Township to Bear Creek Township in the east. PGE taps off the line in Plains Township and runs a supply line to Wilkes-Barre City and from there to Mountain Top. The southern Luzerne County is supplied from the Johnson Street station in Wilkes-Barre with the major lines concentrated near existing developments. The existing gas system extends south to the northern edges of Newport Township. There is only one line in Plymouth Township and there is no service in Conyngham Township.

The gas company is planning to construct a new major supply line from Salem Township to the Plymouth/Nanticoke area along an old railroad right-of-way on the west bank of the Susquehanna River. This line would provide additional service to the Plymouth Township and could be extended across the river to better service Newport and Conyngham. The line is in design stages and planned to be located on property already purchased by PGE so relocation of the line east of the river is not possible.

The cost of extending gas service to the EC parcels will be borne by PGE assuming the extension is a reasonable length to service a substantial project.

3.6.5 Telecommunications

The primary provider of telephone service to the EC study area is Bell Atlantic-Pennsylvania. Minor portions of the southern end of Conyngham Township and Nuangola Borough are serviced by Commonwealth Telephone Company.

Bell Atlantic-Pennsylvania has a network of existing major communication trunk lines which adjoin or extend into all of the EC parcels. The utility will provide whatever extensions are necessary to provide service for future growth. At this point, it seems likely Bell Atlantic-Pennsylvania will incur the expense for providing this service

but recent federal legislation affecting the telephone industry may allow new competition to service the area under different cost provisions. EC or a developing entity would be responsible for burying the lines underground if required.

3.7 Development Suitability

Once data on environmental and mining characteristics were digitized and input in the Earth Conservancy GIS database, a model combining selected characteristics was created to determine portions of the EC land holdings suitable for development. This model used selected data layers to determine those portions of the EC parcels that had significant constraints to land development or road corridors and those portions that were less constrained. Factors representing significant constraints to development were chosen because they are natural or cultural features protected by existing Federal or state legislation or because they would incur exceptionally high costs to overcome in the development process. These included the following factors:

Mining-related Characteristics

- Vertical Openings & Portals
- Abandoned Strip Mines
- Subsidence Areas
- Refuse and Mine Fires

Natural Features

- Wetlands
- 100-Year Floodplain
- Threatened & Endangered Species Habitat
- Lakes & Streams
- Slopes greater than 20%

Cultural Features

- National Register Historic Sites, Areas & Districts
- Archeological Sites

Figure 3-6 provides the development suitability map resulting from this analysis. The shaded portions of the map depict one or more of the above characteristics which should be avoided to the extent possible when siting new development or road corridors. Of the approximately 16,300 acres which comprise the EC land holdings, a total of approximately 10,200 acres are constrained by one or more of the above factors.

Based on the mapping performed for this study and field surveys, much of the Earth Conservancy property has some degree of constraints to development largely as a result of the past mining activities in the area.

The development suitability model created for this planning effort assumed that some of these hazards could be reclaimed (e.g., culm banks could be removed) to render the land developable, but some reclamation or site engineering costs still remain in preparing the land for development. Also, the constraint areas identified in the model can be overcome if desired (e.g., wetland areas or archeological sites can be mitigated), but should be avoided where practical to reduce development costs and/or the time required to resolve these constraints with the regulatory authorities. This map, therefore, is a guide useful for planning purposes but does not necessarily imply hard and fast restrictions to any of the EC parcels without further analysis or more detailed site surveys.

LEGEND

E.C. Property Development Constraints:

Mining Related	Natural Features	Cultural Features
AML Vertical Opening	NWI Wetland	National Register Site
AML Portal	100 Year Floodplain	National Register Area
AML Abandoned Strip Mine	Threatened/Endangered Species Habitat	Archaeological Site
OSM Subsidence Area	Lakes/Streams	
AML Refuse/Mine Fire	Slopes > 20%	

E.C. Property Development Opportunities

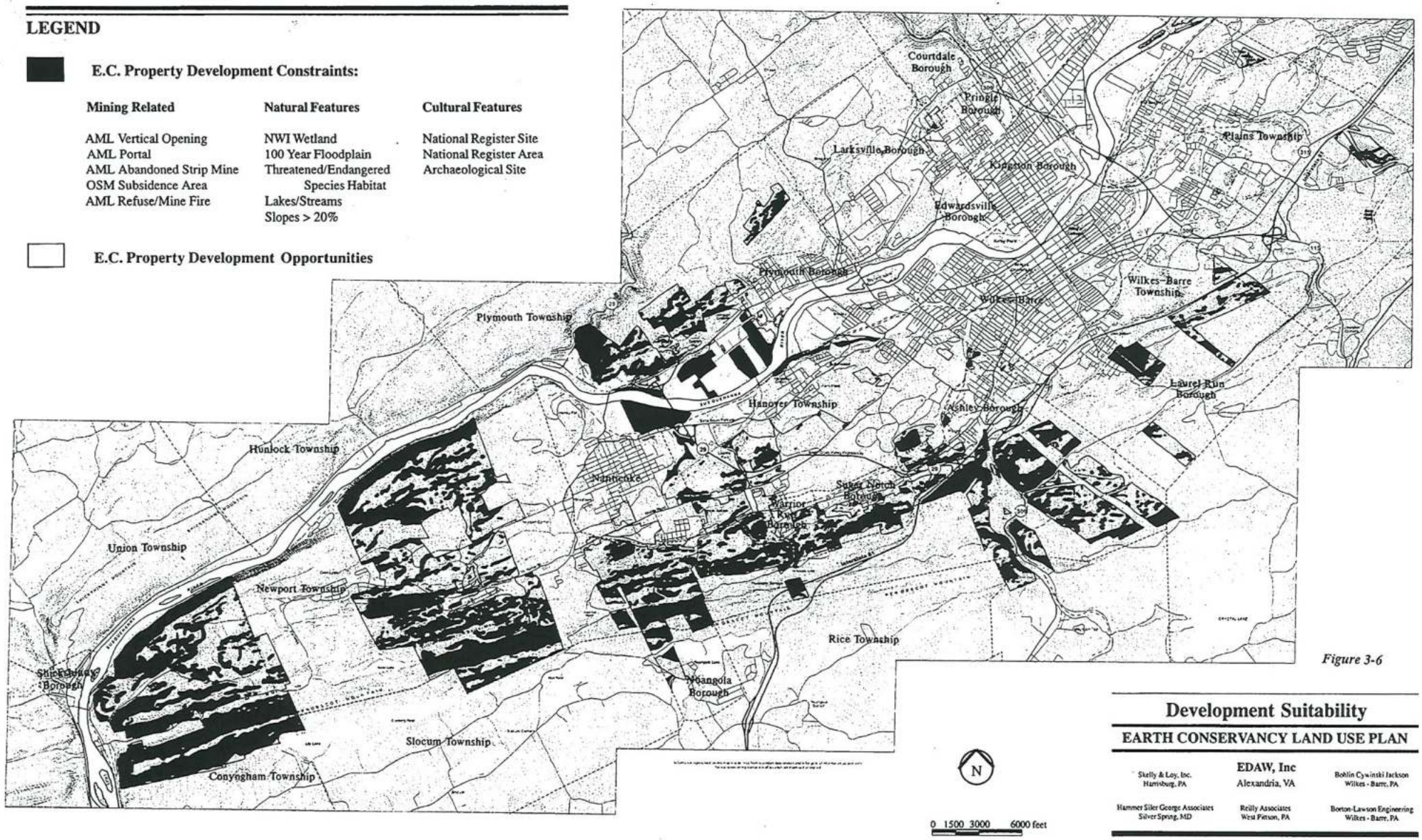


Figure 3-6

Development Suitability

EARTH CONSERVANCY LAND USE PLAN

Skelly & Loy, Inc. Harrisburg, PA

EDAW, Inc Alexandria, VA

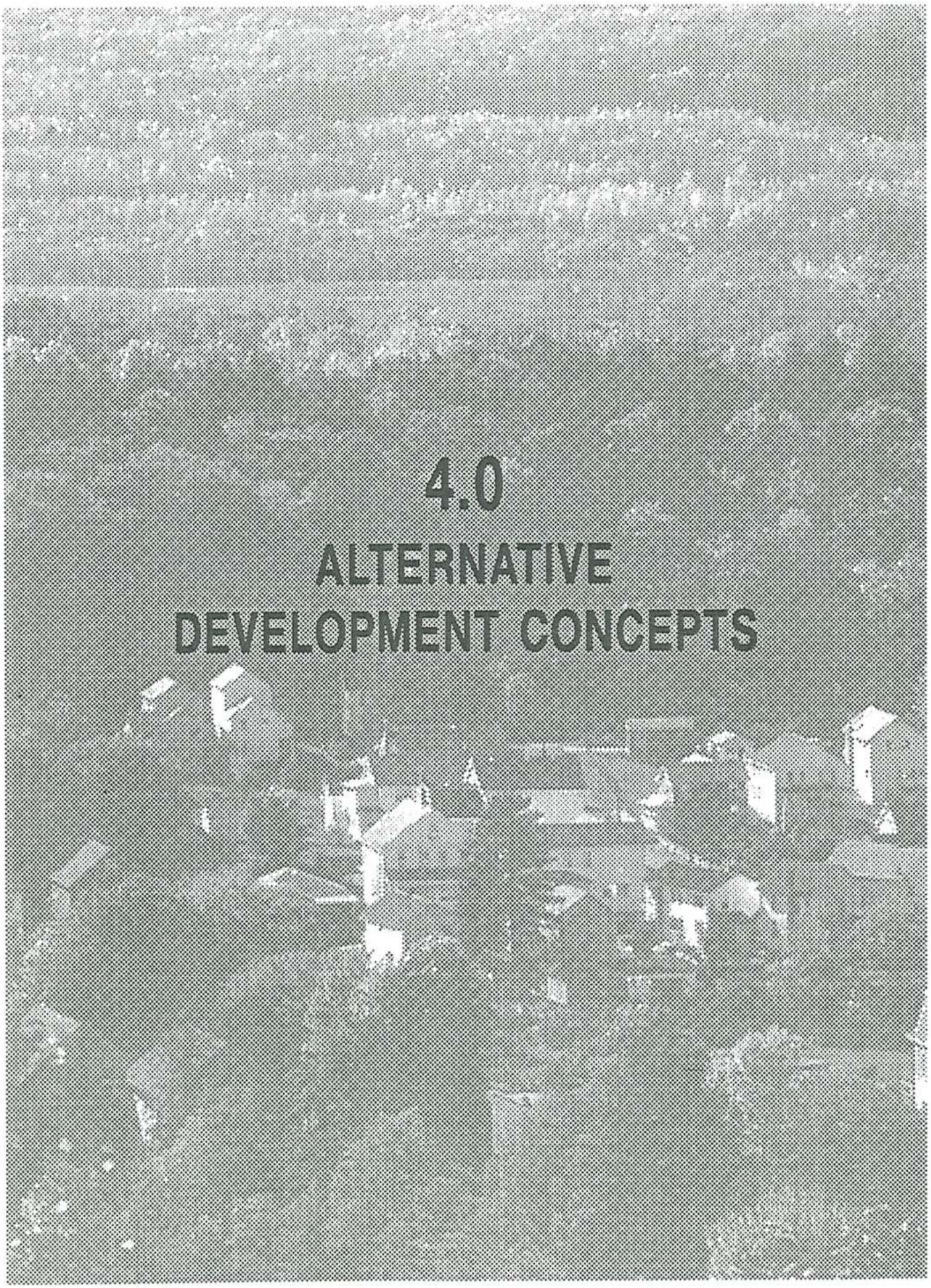
Bohlin Cywinski Jackson Wilkes - Barre, PA

Hammer Siler George Associates Silver Spring, MD

Reilly Associates West Pittson, PA

Borton-Lawson Engineering Wilkes - Barre, PA

4.0
ALTERNATIVE DEVELOPMENT CONCEPTS



4.0 ALTERNATIVE DEVELOPMENT CONCEPTS

4.1 Concept Development

Using the market analysis as a guide to the types of land uses that could be supported on EC land and using the development suitability analysis as a general guide to the location of new uses, the EDAW team developed three long-range, alternative development concepts for EC property that responded to the goals and visions expressed in the visioning workshop. With these development concepts, the team sought to achieve long-term, 25-year goals for the Wyoming Valley as well as for the EC properties.

One of the principal goals guiding the creation of the alternative concepts was to locate new uses in previously developed areas, rather than pristine, undeveloped forested areas. As a result, the majority of the scenic and prominent ridgelines on EC land were protected under each alternative. Also guiding concept development was the goal of using open space and new recreational trails to link existing and proposed new communities.

The three broad visions of the future expressed in the alternative development concepts include one that seeks to expand the economic and employment base, another that would develop the recreational and tourism draw of the region, and a third that would grow the existing communities with new development in patterns similar to the existing. It was envisioned that through the LUPC review process the most viable and visionary components of each of the concepts could be combined to create a preferred development strategy.

As a baseline condition, the team assumed that no more than 6,000 out of the 16,300 acres could be devoted to market-driven uses over the 25-year planning period (Section 2.3.5). Coincidentally, the development suitability analysis had revealed that approximately 6,000 acres of EC's total land holdings were lacking in significant environmental constraints and would be considered developable (Section 3.7). Some of the remaining 10,000 acres would require extensive reclamation, while other areas would remain in natural open space since they contain steep slopes as a development constraint rather than mining-related features. Many of these undevelopable areas presented opportunities for future open space and recreational uses.

POSITIVE CHARACTERISTICS OF THE WYOMING VALLEY

- Good Work Ethic • Work Force
- Good Highway Access • Crossroads • Proximity to NY & Philadelphia
- Scenic Mountains • Natural Features
- Low Crime Rate
- Good Recreation • Hunting & Fishing • Open Space • Hiking
- Educational Opportunities
- Small Town Atmosphere • Good Quality of Life • Friendly
- The River
- Strong Sense of Community • Family
- Kirby Park • Tubs Nature Area • State Parks • State Game Lands
- Outstanding People • Diversity of People

Workshop Participants
November 1995

4.2 Concept A -- Employment-Based

The overall theme of Development Concept A is to grow the local economy through an aggressive infusion of new employment opportunities. Capitalizing on the region's strengths for business and industry, this concept provides five new employment centers on EC property, including: a Corporate Office Center, a Distribution Center, a

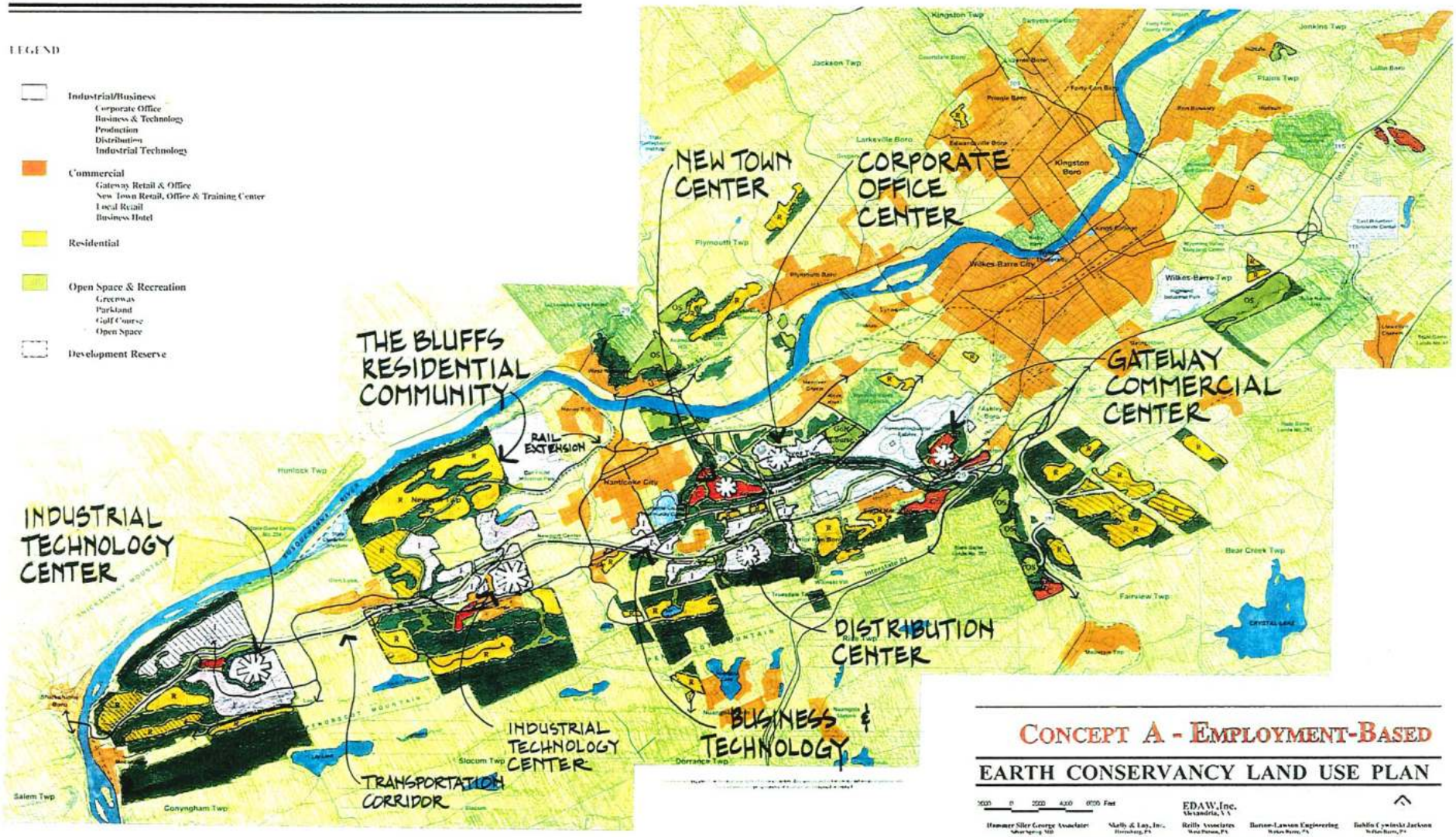

LEGEND
Industrial/Business
Corporate Office
Business & Technology
Production
Distribution
Industrial Technology
Commercial
Gateway Retail & Office
New Town Retail, Office & Training Center
Local Retail
Business Hotel
Residential
Open Space & Recreation
Greenway
Parkland
Golf Course
Open Space
Development Reserve
NEW TOWN CENTER
CORPORATE OFFICE CENTER
THE BLUFFS RESIDENTIAL COMMUNITY
RAIL EXTENSION
GATEWAY COMMERCIAL CENTER
INDUSTRIAL TECHNOLOGY CENTER
DISTRIBUTION CENTER
BUSINESS & TECHNOLOGY
INDUSTRIAL TECHNOLOGY CENTER
TRANSPORTATION CORRIDOR
Kingston Twp
Jackson Twp
Jenkins Twp
Plains Twp
Larksville Boro
Kingston Boro
Plymouth Twp
Wilkes-Barre City
Wilkes-Barre Twp
Hunlock Twp
Nanticoke City
Bear Creek Twp
Fairview Twp
Slocum Twp
Dorrance Twp
Salem Twp
Conyngham Twp
CONCEPT A - EMPLOYMENT-BASED
EARTH CONSERVANCY LAND USE PLAN
EDAW, Inc.
Alexandria, VA

Figure 4-1

Business & Technology Center, and two Industrial Technology Centers (see Figure 4-1). One of the principal outcomes of this concept would be the creation of a Greater Nanticoke Business and Technology Corridor .

The Corporate Office Center would be located along Route 29 and would be accessed from a new interchange. The center would provide high-amenity corporate offices. An expansion of the golf course at the Wyoming Valley County Club into the corporate office area is envisioned to enhance the visual quality of the new development. The Business & Technology Center, located further west adjacent to the Luzerne County Community College would be designed to assist small start-up businesses and provide space for research and technology uses.

The proposed Distribution Center would represent a westward expansion of existing distribution uses found in the Hanover Industrial Estates. The two Industrial Technology Centers planned for Newport and Conyngham Townships would be designed to accommodate a wide range of industrial uses including: industrial research, technology development, and production and manufacturing. Rail service to the Newport parcels would be provided along a re-established rail corridor. Over the long term, retail support services would be provided in the two centers.

Prime development parcels near Interstate-81 would be targeted for retail development as a Gateway Commercial Center which would serve as the entrance to the Route 29 business area. The Gateway Center could include highway retail uses, professional offices, and a business hotel. Additional retail would be developed near the new Corporate Office Center in the form of a New Town Center, with local retail shops and services, and professional offices.

To address the concerns expressed by local businesses at the LUPC economic development panel, a new education and training center would be located near the business and technology center and Luzerne County Community College. This center would provide a training linkage between businesses and the local colleges and universities. In addition, this facility could also be designed to address corporate training needs.

Residential opportunities in the area would be expanded by providing a range of housing types. Higher-end, executive housing could be provided at the perimeters of the business centers, and a mix of affordable and high income housing could be provided in planned communities incorporating such amenities as a golf course and trails. Townhomes and apartments would also be developed.

Concept A includes several new transportation corridors southwest of Route 29 to provide access to the new industrial and business centers. A new interchange and road off Route 29 would provide access to the New Town Center and Business & Technology Center, and would link with

APPROPRIATE USES FOR EC LAND

- Recreation • Game Lands • Trails
- Industrial (near interstate)
- Natural Areas • Conservation
- Motorcycle Park • Off-road Vehicles
- Housing • Affordable Housing
- High-tech • Research Parks
- Reclaimed Land
- Hotel • Resort • Tourism
- Farming on River Land
- Mine Remaining Coal • Use of Culm Banks
- College • University
- Office Park

Workshop Participants November 1995

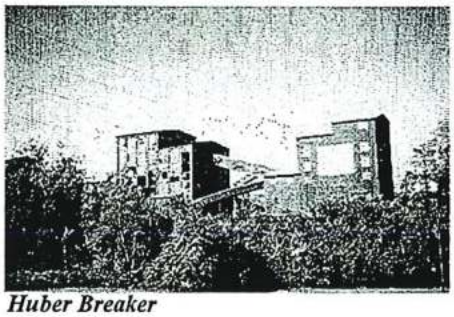
an extended Back Road in the Hanover section of Nanticoke. Access from Nanticoke City to the Newport Industrial Technology Center would be provided along the re-established rail spur. And, a new corridor would be provided from Wanamie to the industrial park in Conyngham Township, thereby keeping truck traffic off of the streets in downtown Glen Lyon.

Under Concept A, a downtown Nanticoke Riverfront Park would be created and new trail linkages would be provided to neighborhood parks, the Community College and the proposed business/office parks. The ridgelines and other natural areas would be protected and preserved for recreational uses, including hiking, biking, hunting, fishing, and ATV usage.

4.3 Concept B -- Amenity-Based

Under Development Concept B, future development on EC land would be focused on enhancing the quality of life in the area by building on the region's three major assets: scenic natural features; significant historic and cultural resources; and an attractive commercial location. This concept would maximize the tourist and recreational amenities of the Wyoming Valley. New business and industrial parks would be provided under the Concept, but would be much smaller in scale than under Concept A.

A tourism center located off of I-81 (see Figure 4-2) would serve as the gateway to the area, welcoming tourists and directing them to the region's historic mining attractions and other cultural resources. The Wyoming Valley Tourism Center could include: outlet shops, a Huber Breaker Heritage Center with an IMAX Theater, and transportation linkages to specific attractions. A trolley connection to Steamtown is proposed as an integral part of this development concept along an existing rail line. Linkages would also be provided to the proposed Huber Breaker/Ashley Planes Historic District which would include trails along the historic Ashley Planes and possibly a rail technology interpretation center.



Huber Breaker

To enhance the recreational offerings of the area, a Regional Entertainment and Cultural District is proposed on prime parcels along Route 29. This district could include cinemas and restaurants, a family entertainment center, a sports and fitness center, a new golf course and driving range, and a historic festival outdoor theater. A hotel and conference center providing a training link with Luzerne County Community College also could be provided in this area.

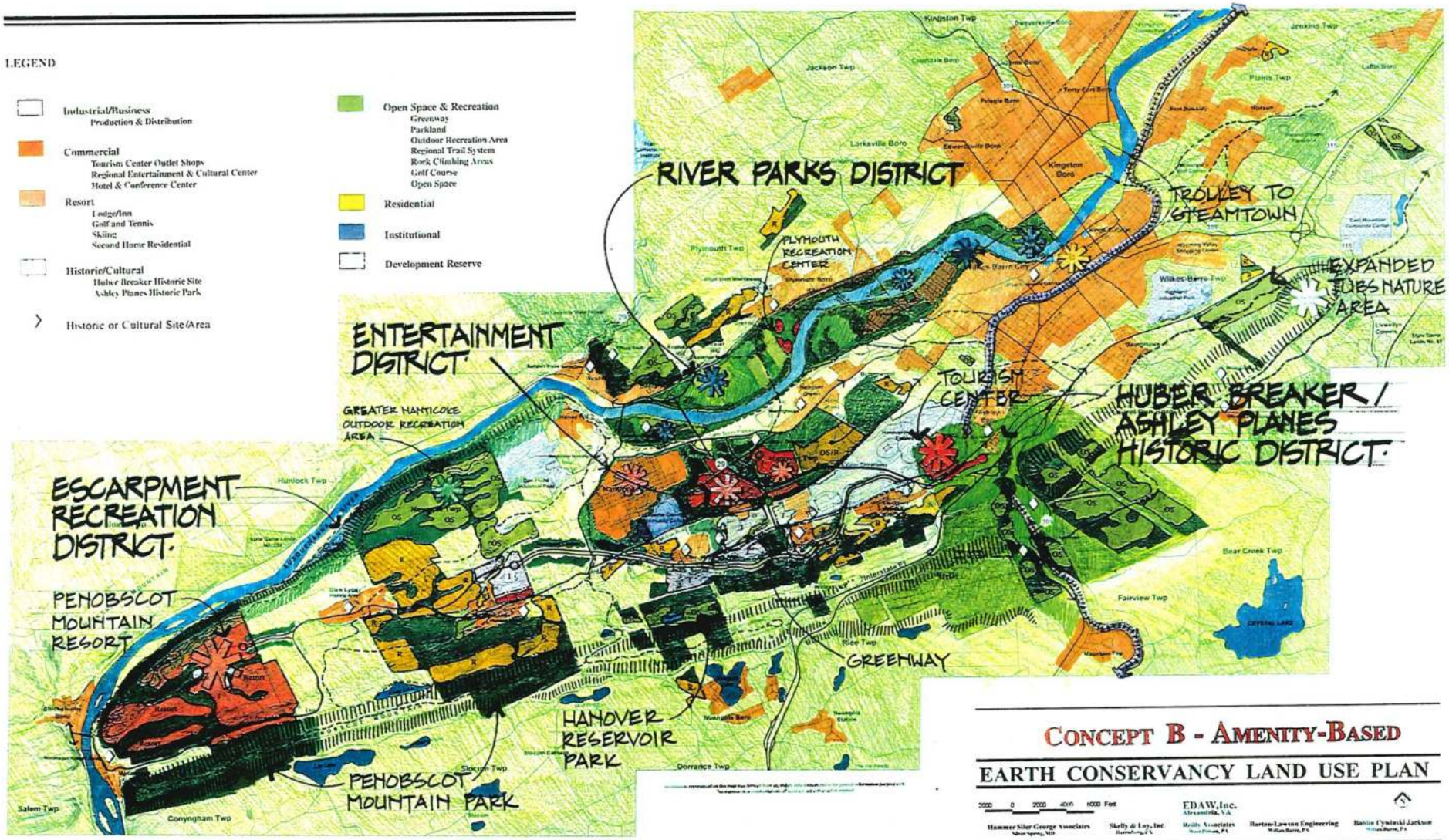

LEGEND
Industrial/Business
Production & Distribution
Commercial
Tourism Center Outlet Shops
Regional Entertainment & Cultural Center
Motel & Conference Center
Resort
Lodge/Inn
Golf and Tennis
Skiing
Second Home Residential
Historic/Cultural
Huber Breaker Historic Site
Ashley Planes Historic Park
Historic or Cultural Site/Area
Open Space & Recreation
Greenway
Parkland
Outdoor Recreation Area
Regional Trail System
Rock Climbing Areas
Golf Course
Open Space
Residential
Institutional
Development Reserve
RIVER PARKS DISTRICT
TROLLEY TO STEAMTOWN
PLYMOUTH RECREATION CENTER
EXPANDED TUBS NATURE AREA
ENTERTAINMENT DISTRICT
GREATER HANTICOKE OUTDOOR RECREATION AREA
TOURISM CENTER
HUBER BREAKER / ASHLEY PLANES HISTORIC DISTRICT
ESCARPMENT RECREATION DISTRICT
PENOBSCOT MOUNTAIN RESORT
GREENWAY
HANOVER RESERVOIR PARK
PENOBSCOT MOUNTAIN PARK
Kingston Twp
Jackson Twp
Larksville Boro
Plymouth Twp
Wilkes-Barre Twp
Plains Twp
Jenkins Twp
Hunlock Twp
Salem Twp
Conyngham Twp
Slocum Twp
Dorrance Twp
Rice Twp
Fairview Twp
Bear Creek Twp
CONCEPT B - AMENITY-BASED
EARTH CONSERVANCY LAND USE PLAN
2000 0 2000 4000 8000 Feet
EDAW, Inc.
Alexandria, VA
Hammer Siler George Associates
Silver Spring, MD
Skelly & Loy, Inc
Harrisburg, PA
Reilly Associates
West Pittston, PA
Barton-Lawson Engineering
Wilkes-Barre, PA
Babiin Cymiski-Jackson
Wilkes-Barre, PA

Figure 4-2

A destination resort at Conyngham, the Penobscot Mountain Resort, would provide a four-star lodge, one or two championship 18-hole golf courses, cross-country skiing, tennis, and other outdoor recreational activities. A recreational lake would be the centerpiece of the resort serving also as the focal point for small-scale tourist retail. Retirement and second homes would be scattered throughout the resort.

A new "greenway" road corridor would be established providing a scenic link between Route 29 and the Newport parcels. Access to the resort in Conyngham would be through historic and picturesque Glen Lyon. Rails-to-trails linkages are also proposed throughout the study area.

One of the goals of Concept B is to enhance the Susquehanna River as an active recreation area. To achieve this, new riverfront parks in Nanticoke and Plymouth are proposed, with the latter containing a Riverfront Recreation Center with bicycle, canoe and kayak rentals, outdoor cafes, and trail linkages to the proposed rails-to-trails corridor along Route 11. Trail connections also could be established to the rock climbing areas at Tilbury Terrace north of West Nanticoke. Along the south side of the Susquehanna, the Escarpment Recreation District would provide trail corridors, scenic overlooks, and a preserved visual amenity for the Valley.

Trail through EC property

West of Nanticoke City, Concept B would create the Greater Nanticoke Outdoor Recreation Area with regional park features including hiking, cross-country skiing, snowmobiling, and hunting, plus a national ATV event course. Along the Penobscot Mountain ridgeline new park areas could be developed, including the Hanover Reservoir Regional Park, Penobscot Mountain Park, and an Expanded Tubs Nature Area providing a new park entrance, trail connections and picnic areas.

A full range of new residential development would be sited near these scenic and recreational features.

4.4 Concept C -- Community-Based

The goal of Development Concept C, the community-based alternative, is to revitalize existing traditional communities through the creation and reinforcement of sustainable villages. Under this concept, land uses are proposed in locations that would enhance and build upon the existing land use patterns. A mix of new uses would be provided in each municipality that would allow residents to walk from their homes to work and shopping.

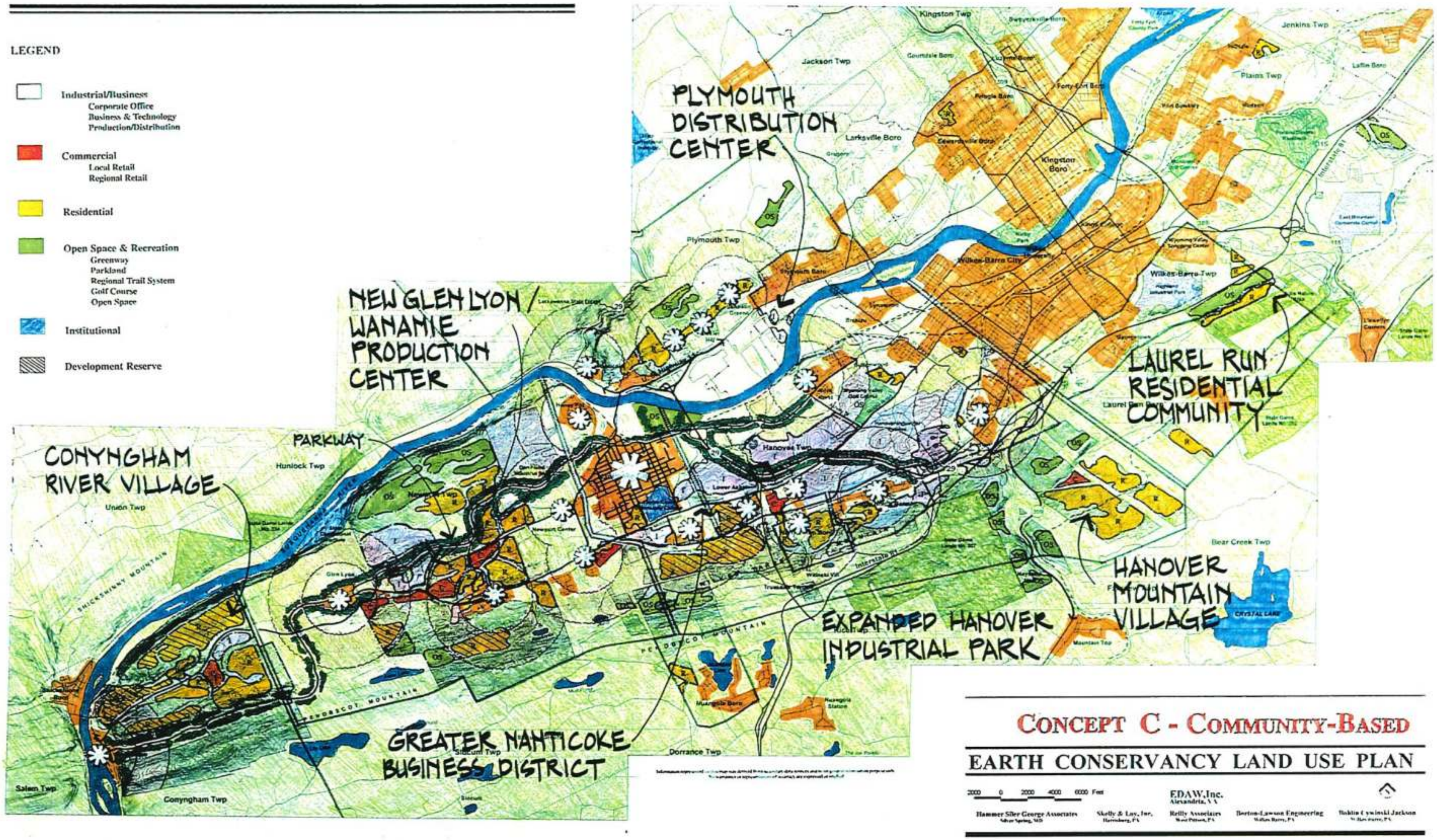

LEGEND
Industrial/Business
Corporate Office
Business & Technology
Production/Distribution
Commercial
Local Retail
Regional Retail
Residential
Open Space & Recreation
Greenway
Parkland
Regional Trail System
Golf Course
Open Space
Institutional
Development Reserve
PLYMOUTH DISTRIBUTION CENTER
NEW GLEN LYON / WANAMIE PRODUCTION CENTER
PARKWAY
CONYNGHAM RIVER VILLAGE
GREATER NANTICOKE BUSINESS DISTRICT
EXPANDED HANOVER INDUSTRIAL PARK
HANOVER MOUNTAIN VILLAGE
LAUREL RUN RESIDENTIAL COMMUNITY
Kingston Twp
Jackson Twp
Larksville Boro
Plymouth Twp
Hunlock Twp
Union Twp
Salem Twp
Conyngham Twp
Dorrance Twp
Bear Creek Twp
Jenkins Twp
Plains Twp
Wilkes-Barre Twp
Wilkes-Barre City
Kingston Boro
Laflin Boro
Crystal Lake
CONCEPT C - COMMUNITY-BASED
EARTH CONSERVANCY LAND USE PLAN
2000 0 2000 4000 6000 Feet
EDAW, Inc.
Hammer Siler George Associates
Skelly & Loy, Inc.
Reilly Associates
Borton-Lawson Engineering
Bohlin Cywinski Jackson

Figure 4-3

In keeping with the overall goal of this concept, a full range of residential development is proposed, including new retirement communities and affordable housing that retain the existing population in the area. Expanded residential neighborhoods are proposed for the various clustered communities scattered throughout the Valley, including Nanticoke City, Laurel Run, Sugar Notch and Warrior Run Boroughs, and communities like Wanamie and Mocanaqua (Figure 4-3). This type of commitment to existing neighborhoods and communities could spur reinvestment in the existing housing stock and traditional retail spaces.

The existing Hanover Industrial Estates would be expanded on EC land under this concept with new production, distribution, and back office uses that continue the existing industrial and business location trends. In Newport Township between Wanamie and Glen Lyon, a new industrial production center would be located in the area of previous mining activities. This new center would be within walking distance to existing neighborhoods and proposed new residential development. New retail activity would be provided that would augment the existing retail and service the new employees and residents.

In the greater Nanticoke area, business and technology uses and corporate offices would be developed in proximity to Luzerne County Community College. A new parkway road corridor would southwest of Route 29 would provide access to these businesses.

Under this concept, open space would be retained and local parks would be created to meet growing local community recreation needs. As in the other development concepts, the mountain ridgelines would be preserved.

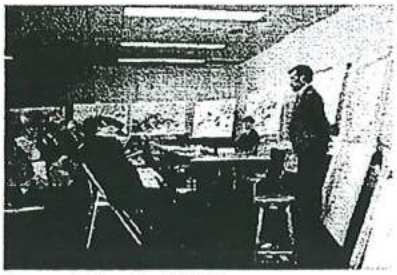
In Conyngham Township, the Mocanaqua community would be expanded by the location of new residential units on the bluffs surrounding the existing community. A new river village also would be created that would provide a small business hub and small-scale retail uses.

In Plymouth Township, existing residential neighborhoods along the hillside would be expanded on EC property. Distribution uses on the flatlands adjacent to Route 11 are proposed.

4.5 Review of Alternative Concepts

The alternative development concepts were presented to the LUPC and general public at a workshop at the Luzerne County Community College in March 1996. All attendants were asked to participate in small group discussions to critique the concepts. One participant from each table subsequently presented the results of their discussions to the larger audience. The comments on the alternatives from each discussion table are presented in detail in Appendix A.2 and summarized below.

The review of alternative concepts at the workshop was preceded by a brief overview of the environmental and reclamation issues identified on the EC properties. As noted above, reclamation is required on many EC parcels, and the total cost for reclamation could be as high as $190 million excluding the cost of extinguishing mine fires. When evaluating the alternatives, the workshop participants were asked to keep in mind EC's need to generate revenues to reclaim the land.



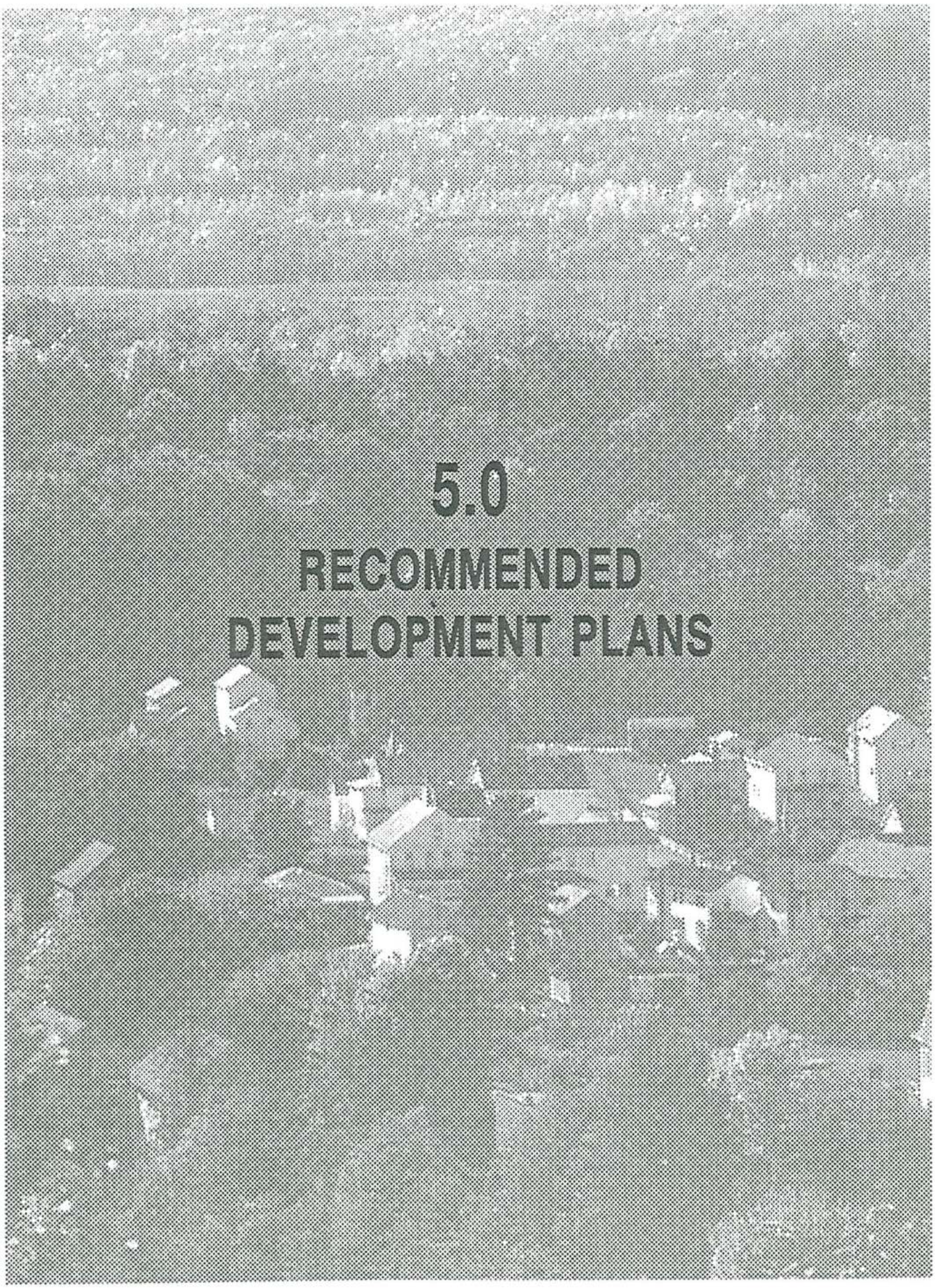
Presentation to LUPC

The participants' overall comments on the alternatives were as follows:

Concept A - The participants strongly supported the Gateway Center and employment centers proposed under Concept A and disliked the relative lack of recreation opportunities in this concept.

Concept B - Concept B's open space and recreation areas received a great deal of support, and the proposal for a Steamtown trolley was very popular. However, some of the participants were skeptical of the feasibility of riverfront parks in Concept B, due to flooding problems, and skeptical of the tourism draw that would be generated by the Huber Breaker and other local attractions.

Concept C - Overall, Concept C was not favored by most of the participants since it represented a continuation of the status quo and an incremental approach to changing the community.



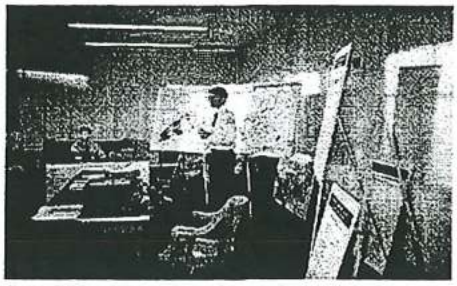
5.0
RECOMMENDED DEVELOPMENT PLANS

5.0 RECOMMENDED DEVELOPMENT PLANS

5.1 Preferred Development Concept/Land Use Plan

5.1.1 Overall Plan

Based on comments received on the alternative development concepts, a preferred development concept was prepared that incorporates the most viable components of the alternative concepts and defines a unique and ambitious vision for the future of the Wyoming Valley and EC land.



Land Use Planning Committee meeting

The preferred concept is based on a framework of dominating topographic features: the northern edge consisting of the Susquehanna River and escarpment area, and the southern edge comprised of Penobscot Mountain and Wilkes-Barre Mountain (Figure 5-1). The goal of the concept is to preserve these areas as places for people to play along the edge of the study area, including activities such as hiking, biking and water-related recreation, while providing high-quality residential and business development in the center. Open space and trails provide linkages between these areas. The plan attempts to locate recreational areas near people's homes and work places, thereby creating a higher quality of life for the region.

Responding to the community's equal desire for higher quality employment, four new clustered employment centers similar to those proposed in Concept A are included in the plan. Residential communities that provide a range of housing and retail development that supports new businesses and residents are also encompassed in the plan.

The area devoted to each of the major land uses in the preferred concept is presented in Table 5-1. A description of the major features of the concept follows.

Corporate Office Center & Business & Technology Center

The EC parcels along Route 29 would be included in a Corporate Office Center which would provide state-of-the-art, high amenity offices adjacent to the existing country club and across Route 29. The EC parcels to the east and south of Luzerne County Community College would be developed as a Business and Technology Center, providing start-up research and technology companies a place to locate. Combined, these two employment centers would create high-quality, infill development between the existing Hanover Industrial Estates, Wyoming Valley Country Club, and the Community College. Retail uses, such as convenience stores and luncheonettes, would be included in the these centers.

LEGEND

- Limited Access Highway
- Arterial Road
- Collector - Local Road
- Dirt Road

Railroad
- Abandoned
- Active
- Out of Service

- Lake - River
- Stream
- Municipal Boundary
- 20' Contour

Land Use
- Airport
- State Forest
- State Game Land
- Parks: Municipal, County
- Recreation: golf course, Race Track, Etc.
- Major Industrial Area
- Institutional: University, College, Hospital, Prison
- Earth Conservancy Parcel

- I — INDUSTRIAL / BUSINESS
- INS — INSTITUTIONAL
- C — COMMERCIAL
- R — RESIDENTIAL
- R/R — RESIDENTIAL / RESORT
- P — PARKLAND
- SG — STATE GAMELAND
- SF — STATE FOREST
- F — FARMLAND
- OS — OPEN SPACE

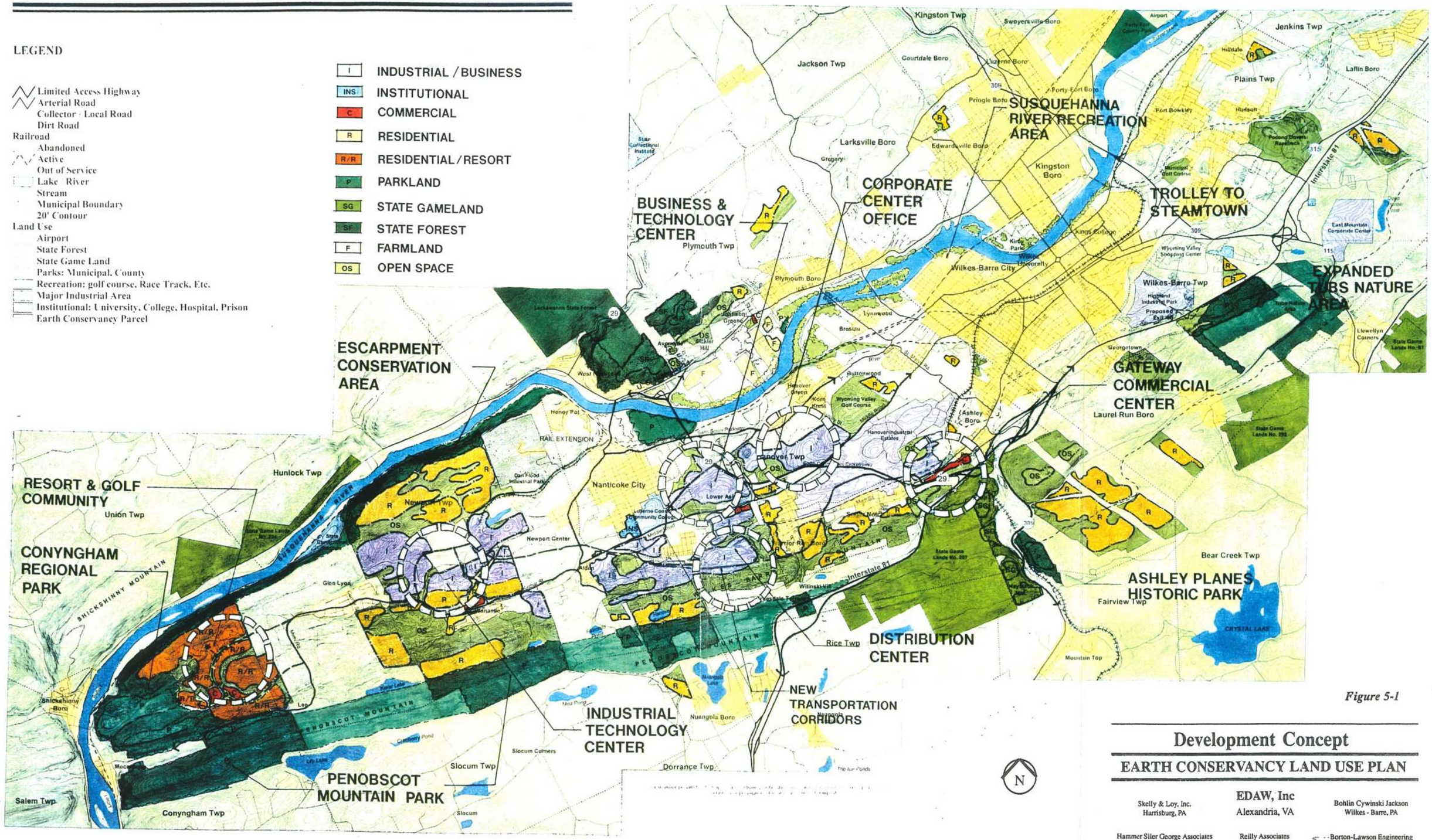


Figure 5-1

Development Concept

EARTH CONSERVANCY LAND USE PLAN

Skelly & Loy, Inc. Harrisburg, PA	EDAW, Inc Alexandria, VA	Bohlin Cywinski Jackson Wilkes - Barre, PA
Hammer Siler George Associates Silver Spring, MD	Reilly Associates West Pittson, PA	Borton-Lawson Engineering Wilkes - Barre, PA

Table 5-1
Land Use Components for 25-Year Planning Period (1996-2021)

Land Use		Total Acres
I.	**Industrial**	
	Corporate Office & Light Industry	465
	Business & Technology	235
	Distribution	690
	Industrial Technology Center	795
	Subtotal	**2,185**
II.	**Institutional**	**40**
III.	**Commercial**	
	Gateway Retail, Outlets & Tourism	40
	Local Retail	
	Askam, Hanover Township	10
	Wanamie, Newport Township	15
	Plymouth Township	10
	Conyngham Township	10
	Subtotal	**85**
IV.	**Residential**	
	Ashley/Hanover Township Area	10
	Askam, Hanover Township	70
	Hanover Reservoir	150
	Hanover Township, North	65
	Laurel Run Borough	65
	Mountaintop Area	580
	Newport Township, South	380
	Newport Township, Central	200
	Newport Township, North	685
	Nuangola Borough	45
	Plains Township	100
	Plymouth Township	110
	Pringle Borough	25
	Sugar Notch/Warrior Run Area	250
	Wilkes-Barre Township	35
	Subtotal	**2,770**
	Resort Residential - Conyngham	**970**
V.	**Farmland**	**50**
VI.	**Total Revenue Generating Area**	**6,100**
VII.	**Parks, Open Space and Undeveloped Area**	**10,200**
VIII.	**Total EC Land**	**16,300**

* Acreages reflect developable areas for land use categories I-VI.

In addition to the business and retail uses, an education and training facility linking businesses with local colleges and universities is an integral component of these two centers. The training facility would be located on the EC parcel to the east of Luzerne County Community College. To the west of the Community College, expanded college facilities are proposed on a recently reclaimed EC parcel. Access to these employment centers would be provided from a new interchange off of Route 29 accessing a new road that would connect the Sans Souci Parkway with Middle Road by the Community College. These transportation improvements are necessary due to current congestion problems along Middle Road.

Distribution Center & Industrial Technology Center

Continuing existing development patterns, a Distribution Center is proposed for the EC parcels along Back Road towards the Hanover section of Nanticoke. And, an Industrial Technology Center that provides for industrial research, technology development, and manufacturing is proposed for the EC properties in Newport Township north of Wanamie. Rail service and intermodal transfer sites are proposed to be extended to this center to allow for medium or heavy industrial users.

In the preferred development concept, a new road is depicted that would provide improved access to the larger of the distribution parcels along Back Road; this road would extend south from the Sears facility in Hanover Industrial Estates, cross Back Road, and then turn west, ultimately crossing Middle Road and extending into the EC parcels by Newport Center. Other possible road alignments are discussed in Section 5.2.

Mixed-use Town Centers

To augment the four proposed employment centers two mixed-use, neo-traditional town centers are proposed; one between Askam and Hanover, and the other in Wanamie. These developments would provide a mix of new businesses, retail uses, and housing based on extensions of pre-existing land development patterns. Residents would be able to walk or bike to shopping and work. More detailed plans of these areas are provided in Figures 5-2 and 5-3.

Gateway Center

The preferred concept incorporates a Gateway Center along Interstate 81 that would include both retail and tourism uses. An outlet shopping center could also be accommodated. However, the scale of this development would be smaller than proposed in either Concept A or B since the land is not immediately available for development. The Gateway Center would be the point of embarkation for the proposed trolley to Steamtown.

Conyngham Golf & Resort Community

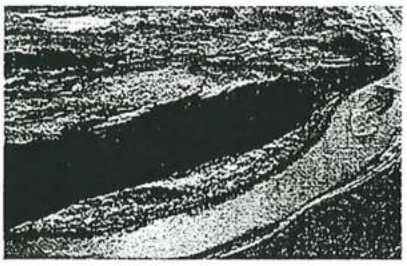
Under the preferred development concept, much of the EC land in Conyngham is proposed for a resort and golf community. This development would provide mix of primary and secondary homes, along with natural areas, trails, golfing and other recreational amenities that capitalize on the scenic quality of this location. Retail uses to serve residents and visitors would be provided. Adjacent to the resort, Conyngham Regional Park would be developed on lands that currently require reclamation but which afford exceptional vistas of the surrounding mountains and offer abundant opportunities for active recreation.

Residential Development

New residential communities are proposed for EC properties throughout the study area. Housing would be provided at densities ranging from single-family homes on 5-acre lots to townhouses and apartment buildings at 4 to 15 units per acre. Generally, densities would be greater in the center of the Valley and lower on the land near the ridgelines.

Open Space & Recreation

As shown in Figure 5-1, the open space network proposed in the development concept encircles the valley with new and expanded parks, nature preserves, trails for hiking and climbing, hunting and fishing areas, and interpreted historic and cultural features. A total of approximately 10,200 acres would be retained in undeveloped open space under the proposed development concept.



Aerial view of area proposed for Escarpment Conservation

Specifically, the preferred concept proposes the following open space elements :

- parkland designation along the Penobscot mountain range in Conyngham, Newport, and Hanover Townships;
- dedication of additional State Gameland adjacent to existing SGL No. 207 southwest of Route 309;
- creation of the Ashley Planes Historic Park at an EC parcel along the northeast side of Route 309 to provide a trailhead for the existing trail along the ruins of the planes;
- expansion of the Tubs Nature Area to provide additional trail linkages and parkland following construction of the adjacent new highway interchange and related development; and,
- expansion of the Lackawanna State Forest into adjacent EC parcels in Plymouth Township -- these parcels contain unique visual and recreational resources in the form of Tilbury Nob and rock outcroppings appropriate for rock climbing.

The preferred concept also provides the opportunity for a number of new trail corridors and pedestrian and bicycle connections on and off EC property. New roads proposed in the plan would have adjacent pedestrian/bicycle facilities to encourage multiple modes of transportation to new employment centers. The plan also includes trails proposed in the *Delaware & Lehigh Canal National Heritage Corridor and State Heritage Park Management Action Plan* that cross EC property and link to a larger regional trail system extending southeastward to Allentown and Bethlehem and existing recreational areas, such as the Delaware Water Gap National Recreation Area in eastern Pennsylvania.

5.1.2 Sub-Area Plans

More detailed plans were developed for three sub-areas within the EC study area: the Route 29 area, the Newport Township area, and the Conyngham Township area. These plans were prepared at 1" = 1000' scale and are reproduced as Figures 5-2, 5-3, and 5-4.

5.1.3 EDAW Summer Student Program 1996

On June 9, 1996, eleven landscape architecture, architecture, and planning students representing eight universities and four countries began a two-week intensive workshop that focused on innovative site development and open space plans for the EC landholdings. EDAW annually sponsors this international Summer Student Program, which includes an intensive two-week workshop followed by an eight-week internship in one of EDAW's 17 offices worldwide.

Summer Student Program Participants

The 1996 SSP focused on two aspects of the planning challenge for EC property: 1) developing an Open Space and Recreation Plan for the Wyoming Valley that would celebrate the region's identity and serve as a template for directing future growth; and 2) designing detailed site development plans for key parcels along Route 29 that are identified for industrial, commercial and residential use in the Preferred Development Concept prepared by the EDAW team. The students developed these plans following a series of presentations from local leaders, site visits, and extensive research on the area and EC property.

The students' plans were presented to EC's Land Use Planning Committee on June 20, 1996. While the student activity was primarily an academic exercise, their creative ideas and detailed designs were well received by the LUPC and could provide future guidance for the reclamation and development of certain EC parcels. Appendix A.1 to this Land Use Plan is a poster that depicts the SSP 1996 plans.

SSP Presentation to Land Use Planning Committee

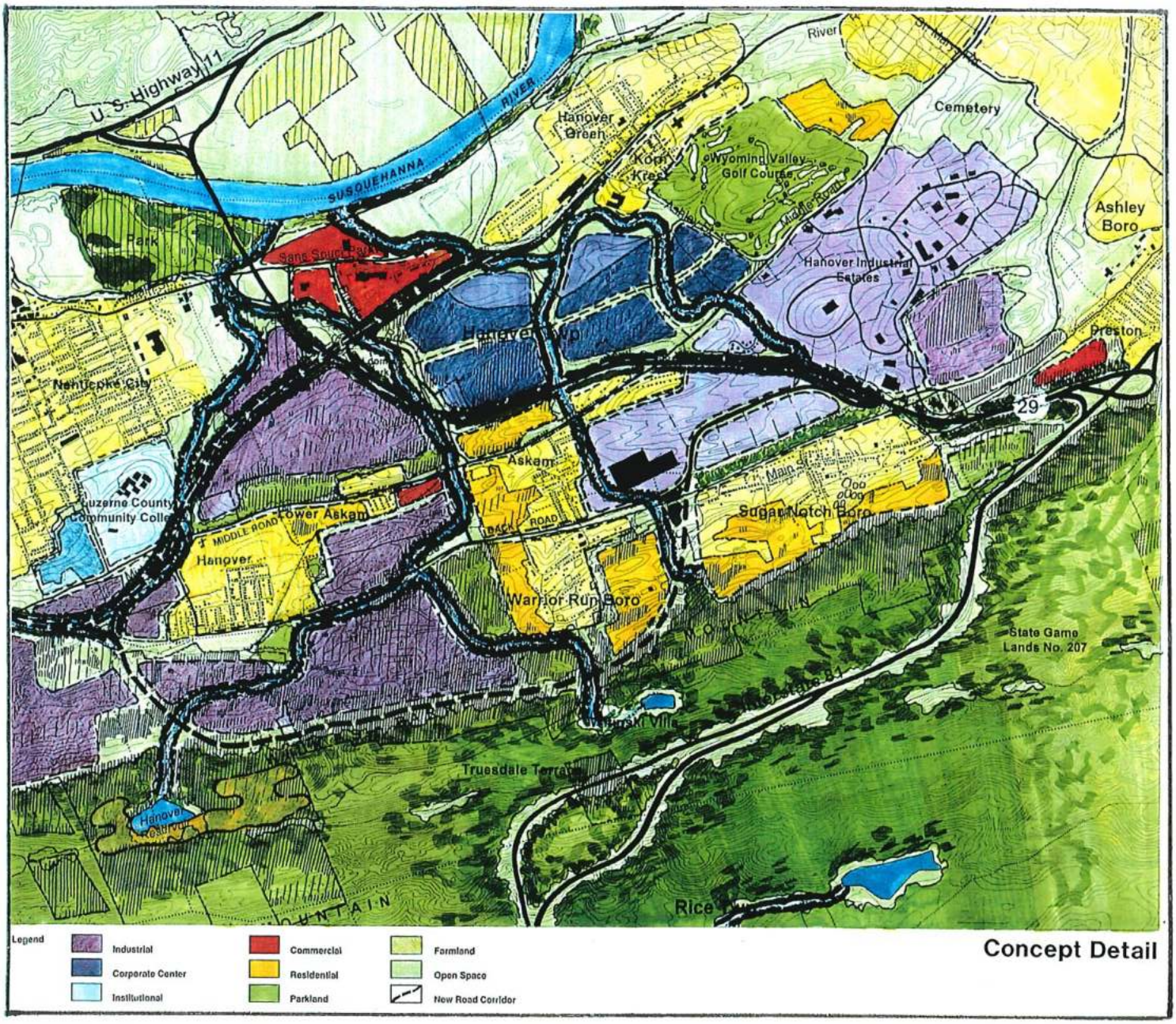


Figure 5-2

Route 29 Area Development Plan

EARTH CONSERVANCY LAND USE PLAN

N

0 1000 2000 4000 feet

EDAW, Inc
Alexandria, VA

Skelly & Loy, Inc.
Harrisburg, PA

Bohlin Cywinski Jackson
Wilkes - Barre, PA

Hammer Siler George Associates
Silver Spring, MD

Reilly Associates
West Pittson, PA

Borton-Lawson Engineering
Wilkes - Barre, PA

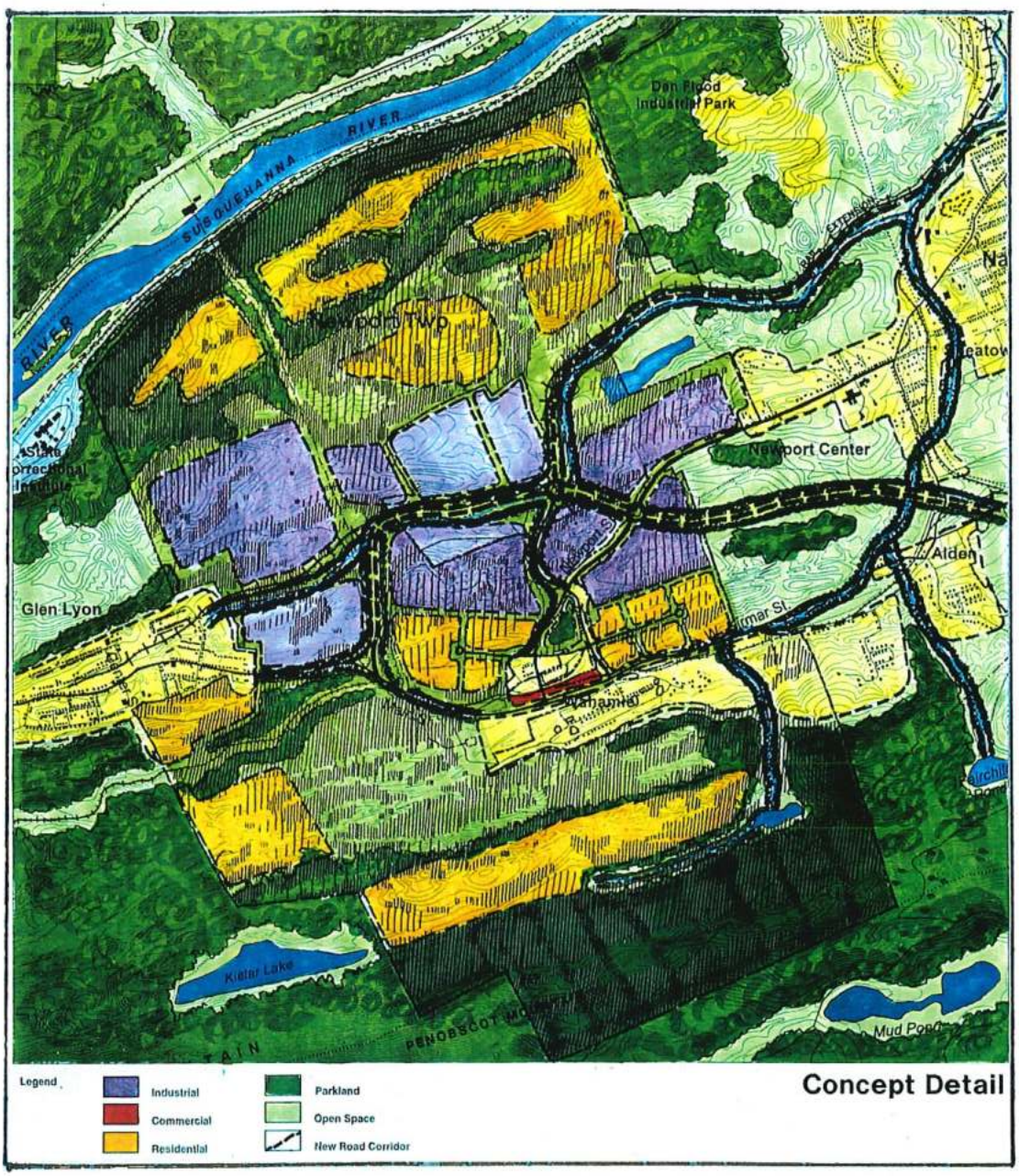


Figure 5-3

Newport Area Development Plan

EARTH CONSERVANCY LAND USE PLAN

Skelly & Loy, Inc. Harrisburg, PA	**EDAW, Inc** Alexandria, VA	Bohlin Cywinski Jackson Wilkes - Barre, PA
Hammer Siler George Associates Silver Spring, MD	Reilly Associates West Pittson, PA	Borton-Lawson Engineering Wilkes - Barre, PA

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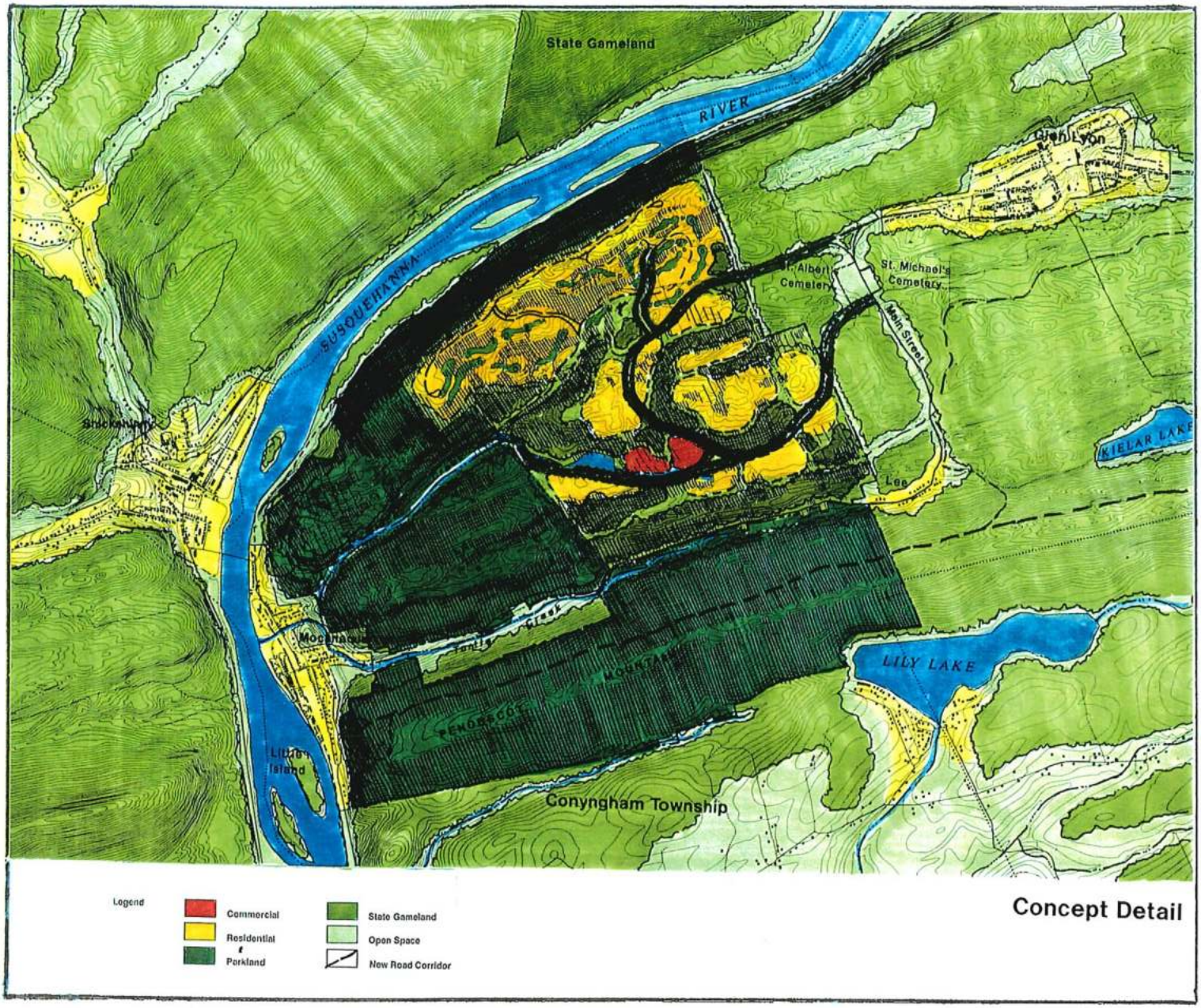

Figure 5-4

Conyngham Area Development Plan

EARTH CONSERVANCY LAND USE PLAN

Skelly & Loy, Inc.
Harrisburg, PA

EDAW, Inc
Alexandria, VA

Bohlin Cywinski Jackson
Wilkes - Barre, PA

Hammer Siler George Associates
Silver Spring, MD

Reilly Associates
West Pittson, PA

Borton-Lawson Engineering
Wilkes - Barre, PA

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0 1000 2000 4000 feet

5.2 Transportation

As part of Step 4 of PennDOT's Transportation Project Development Process (TPDP), alternative transportation systems were analyzed that would address the needs of the study area as determined in Step 3 of the TPDP (see Section 3.5 above) and the needs of the preferred development concept. The analysis considered a variety of solutions to the area's existing and projected future transportation problems including: increased use of alternative modes of transportation; expansion of existing roadways; and, construction of new roadways. Alternative solutions were developed for different locations within the study area.

Upon determining that upgrading and widening the existing roadways to service future volumes would have adverse effects on the existing communities adjacent to the roads, several alternative alignments were studied. These alternative alignments are described in detail in Appendix A.7 and summarized below. EC and its transportation consultant will study these alignment alternatives in further detail with the goal of developing a preferred transportation alignment. The preferred alignment, a synthesis of the various alternatives presented here, will be presented to the appropriate review organizations in the Fall of 1996.

5.2.1 Integrated New/Existing Alignments

The alternative alignments depicted in Figure 5-5 seek to minimize impacts to existing communities along currently inadequate roadways by proposing a combination of new and upgraded existing alignments. The following alignments are included: IA1, IA2, IB1-a, IB1-b, IB2, IC1, IC2, ID, IE1, IE2.

A new alignment (IA1) would be developed from SR 0029 to Luzerne County Community College along an existing railroad bed. The alignment would connect with SR 2008 (Middle Road) near LCCC. A new interchange on SR 0029 would be constructed approximately 1.5 miles west of the SR 2008 interchange, Exit 2. Due to the proximity of the ramps for the SR 2002 interchange (Exit 3) and the constraints of historic Loomis Park, the new interchange is not proposed to be full-access. It would provide access to and from SR 0029 east of the interchange and access from SR 0029 west of the interchange. An upgrade of Dundee Road (Alignment IA2) from the proposed interchange to SR 2002 (the Sans Souci Parkway) would provide access to SR 0029 at Exit 3 for westbound traffic.

West of the intersection of SR 2008 (Middle Road) with Prospect Street, two options are proposed to bypass communities in Alden. Alignment IB1-a runs along an existing railroad bed on the north side of a local school. Alignment IB1-b follows a rail bed on the south side of the school. Both alignment options connect with SR 3004 (Kirmar

LEGEND:

PRIMARY ROADWAY ALIGNMENTS
CONNECTOR ROAD

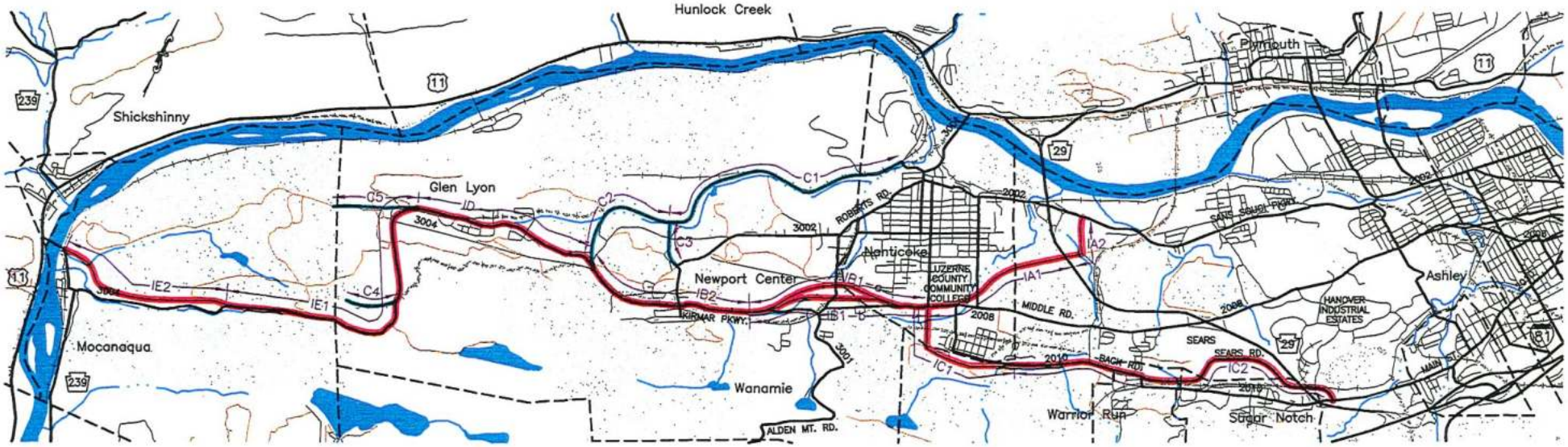


Figure 5-5

Preliminary Alignment Alternatives
Integrated New / Existing Alignments
EARTH CONSERVANCY LAND USE PLAN

Skelly & Loy, Inc. Harrisburg, PA	EDAW, Inc Alexandria, VA	Bohlin Cywinski Jackson Wilkes - Barre, PA
Hammer Siler George Associates Silver Spring, MD	Reilly Associates West Pittston, PA	Borton-Lawson Engineering Wilkes - Barre, PA

Parkway) west of the SR 3004/SR 3003 intersection in Alden. Alignments IB2, ID and IE1 are proposed upgrades to SR 3004 in Newport/Wanamie, Glen Lyon, and Conyngham Township, respectively. Modifications to the existing alignment may be required in some areas to meet the design criteria.

Segment IE2 is a new alignment developed to bypass residential communities, geometric constraints, and historic features in Mocanaqua. It provides a connection from S.R. 3004 to the County-owned bridge in Mocanaqua. Another primary roadway is proposed from SR 0029 to Nanticoke. This roadway would serve the proposed industrial distribution use in Hanover Township, and Sugar Notch and Warrior Run Boroughs. The alignment was developed to connect the road adjacent to the Sears facility with the proposed alignment along SR 2008/SR 3004.

Alignment IC2 is a proposed upgrade of existing roadways. Alignment IC1 is a new alignment following an existing rail bed south of Hanover. It intersects SR 2008 (Middle Road) at its intersection with Prospect Street. This new alignment avoids impacts to a community park in Hanover.

In addition to the primary roadway alignments proposed in these alternatives, a number of connector roads are proposed to provide access to large planned developments. Alignment C1 is a roadway that will provide access to the proposed power production facility in Newport Township. The access road to be built by the company proposing the facility, Foster Wheeler, Inc., will meet Luzerne County standards and may provide the base condition for an upgraded facility in the future.

Alignment C2 is a proposed extension of Alignment C1. Alignments C3, C4, and C5 are collector roads connecting areas of major land development with the primary roadway alignments.

5.2.2 North/South Alignments

The north/south alignments are depicted in Figure 5-6. They include alignments: NSA1, NSA2, NSB1, NSB2, NSC1-a, NSC1-b, NSC2, NSD, NSE. These alignments were developed as alternatives that further minimize impacts to existing communities. The north-south alignments connect the County bridge in Mocanaqua with SR 0029 and provide access to major land developments. They have identical connection points to SR 0029 as the integrated alignments, including the construction of the new interchange. However, the north/south alignments are proposed along entirely new alignment with the exception of the road adjacent to the Sears facility (Alignment NSC2).

Segments of these alternatives (NSA1, NSC2) follow alignments identical to those presented as integrated new/existing alignments. Under these alternatives, NSA1 does not connect with SR 2008 (Middle

LEGEND:

PRIMARY ROADWAY ALIGNMENTS
CONNECTOR ROAD

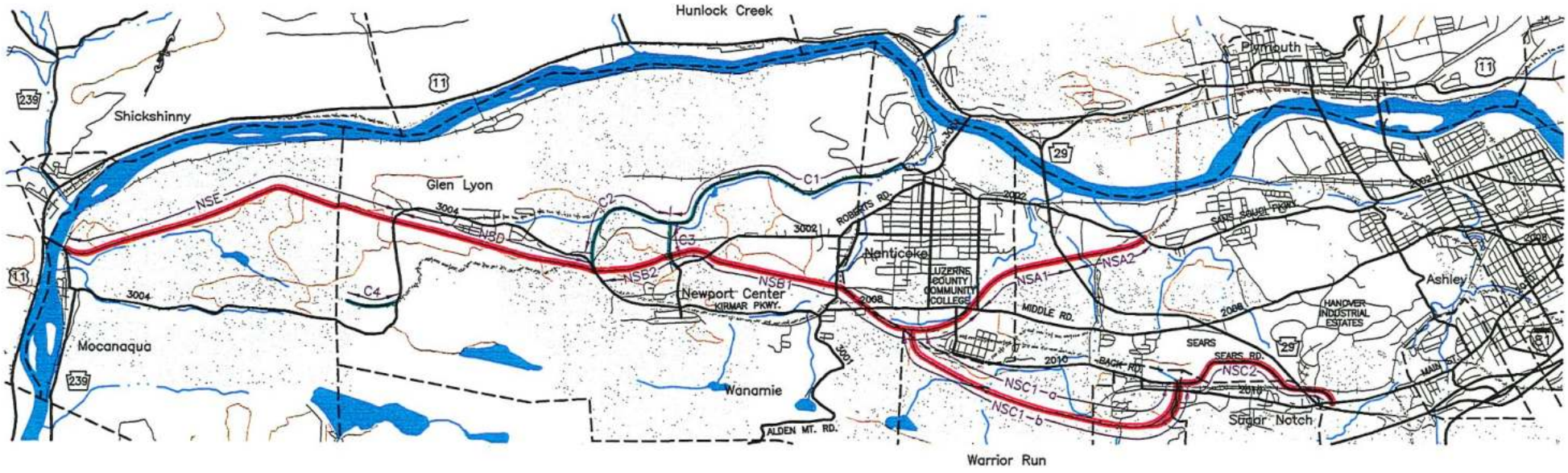


Figure 5-6

Preliminary Alignment Alternatives
North / South Alignments

EARTH CONSERVANCY LAND USE PLAN

Skelly & Loy, Inc. Harrisburg, PA	EDAW, Inc Alexandria, VA	Botdin Cywinski Jackson Wilkes - Barre, PA
Hammer Siler George Associates Silver Spring, MD	Reilly Associates West Pittson, PA	Borton-Lawson Engineering Wilkes - Barre, PA

Road). Rather, it connects to a new alignment (NSB1) which crosses to the south side of Middle Road near the Community College. This segment follows an existing railroad bed parallel to SR 2008 and traverses west crossing SR 2008 and SR 3001 into Newport Township.

Two options are possible for segment NSB1. One is a proposed alignment that crosses under SR 2008 at a grade separated intersection. The other is the construction of an at-grade intersection with SR 2008. This alignment was developed to minimize impacts to the campus of LCCC and adjacent residential communities along Middle Road.

The primary roadway alignments traverse west and connect with the Shickshinny/Mocanaqua bridge. Segment NSD minimizes impacts to Glen Lyon. The alignment of this roadways was influenced by the location of an active mine fire in that area. Segment NSE provides access to the large EC parcel in Conyngham Township (Cony-1).

Access to the proposed industrial distribution centers is provided by segments NSC1-a or NSC1-b, along an existing railroad bed. The two options are possible connections to the Sears road.

5.2.3 Southern Alignments

The southern alignments are depicted in Figure 5-7. They include alignments: S1-a, S1-b, S2, S3, S4, and S5. These alignments involve minimal impacts to existing communities. The alignments generally follow an elevation of 800 feet along Penobscot Mountain. The southern alignments are proposed as limited-access facilities with at least three interchanges. Under these alternatives, interchanges are required for connection to: SR 2010 (Sears road); SR 2008 (Middle Road); Alden Mountain Road; and SR 3004 west of Glen Lyon.

Two options are considered for the eastern terminus. Alignment S1-b originates at a new interchange on Interstate 81, south of Exit 44. Alignment S1-a connects with SR 0029 at the SR 2010 interchange (Exit 1). Extensive modification to the interchange would be required to accommodate the proposed roadway.

Segment S2 was developed to connect large planned developments in Newport Township and existing roadways in Nanticoke and Hanover with a proposed interchange. Alignment S4 connects with SR 3004 near Wanamie. Alignment S3 extends to SR 3004 west of Glen Lyon. Alignment S5 extends to the western terminus, the County bridge in Mocanaqua. The location of alignments S3 and S4 were influenced by an existing mine fire.

The connector roads in these alignments are identical to those presented in the previous alignments with the exception of C6. This roadway generally follows alignment NSB1, but its design standard would be different.

LEGEND:

PRIMARY ROADWAY ALIGNMENTS
CONNECTOR ROAD

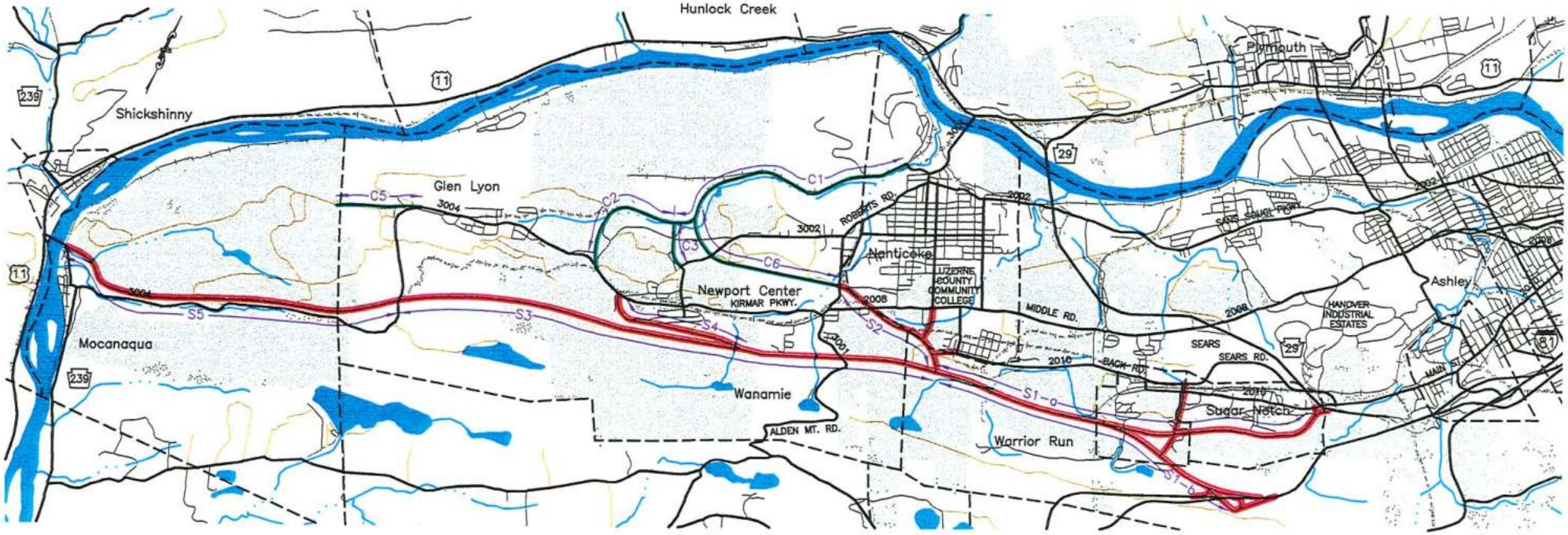


Figure 5-7

Preliminary Alignment Alternatives
Southern Alignments

EARTH CONSERVANCY LAND USE PLAN

Skelly & Loy, Inc. Harrisburg, PA	**EDAW, Inc** Alexandria, VA	Bohlin Cywinski Jackson Wilkes - Barre, PA
Hammer Siler George Associates Silver Spring, MD	Reilly Associates West Pittston, PA	Benton-Lawson Engineering Wilkes - Barre, PA

N

5.3 Utility Systems

5.3.1 Water System

Upgrades to the existing water system would be required to adequately serve all EC parcels planned for development under the preferred development concept. As shown in Figure 5-8, new water lines and tanks would be required. This plan is based on a general review of existing infrastructure and planning-level assumptions of future demand. The analysis is described in more detail in the Reilly Associates report included in Appendix A.6.

The two parcels along Route 29 proposed for corporate offices and business and technology uses would require the extension of a 14- to 16-inch sewer line from the Buttonwood area to the Community College. The Newport area parcels also would require a significant water line extension; a 14- to 16-inch line from Nanticoke into Wanamie would be necessary to fully serve the industrial and residential development proposed for that area. And, in order to service the Conyngham parcels, service from the Newport parcels would need to be extended to Conyngham behind Glen Lyon.

For some EC parcels that lie outside the coal basin boundaries, wells are proposed to service new residential developments. The parcels proposed for well systems are identified in Table 6-3.

5.3.2 Sewer System

Sewer system improvements would be needed to accommodate the proposed land uses in the preferred development concept. Based on an analysis of existing systems and future uses, a series of new sewer lines and pump stations are proposed (see Figure 5-9).

New sewer lines and pump stations would be required to service the industrial and residential uses proposed for the Newport and Conyngham parcels. Regarding the latter parcels, the analysis of existing systems revealed that insufficient capacity existed in the system servicing Mocanaqua to provide service to the EC parcels adjacent to that community. Therefore, sewer service would need to be extended from Newport; these parcels would not be suitable for septic systems given previous mining activity on these lands.

Selected parcels in Hanover and Wilkes-Barre Townships also would require new sewer lines. Some parcels within these communities, however, would be able to service future low-density residential development with on-lot septic systems. The parcels that are proposed to be serviced by septic are identified in Table 6-3.

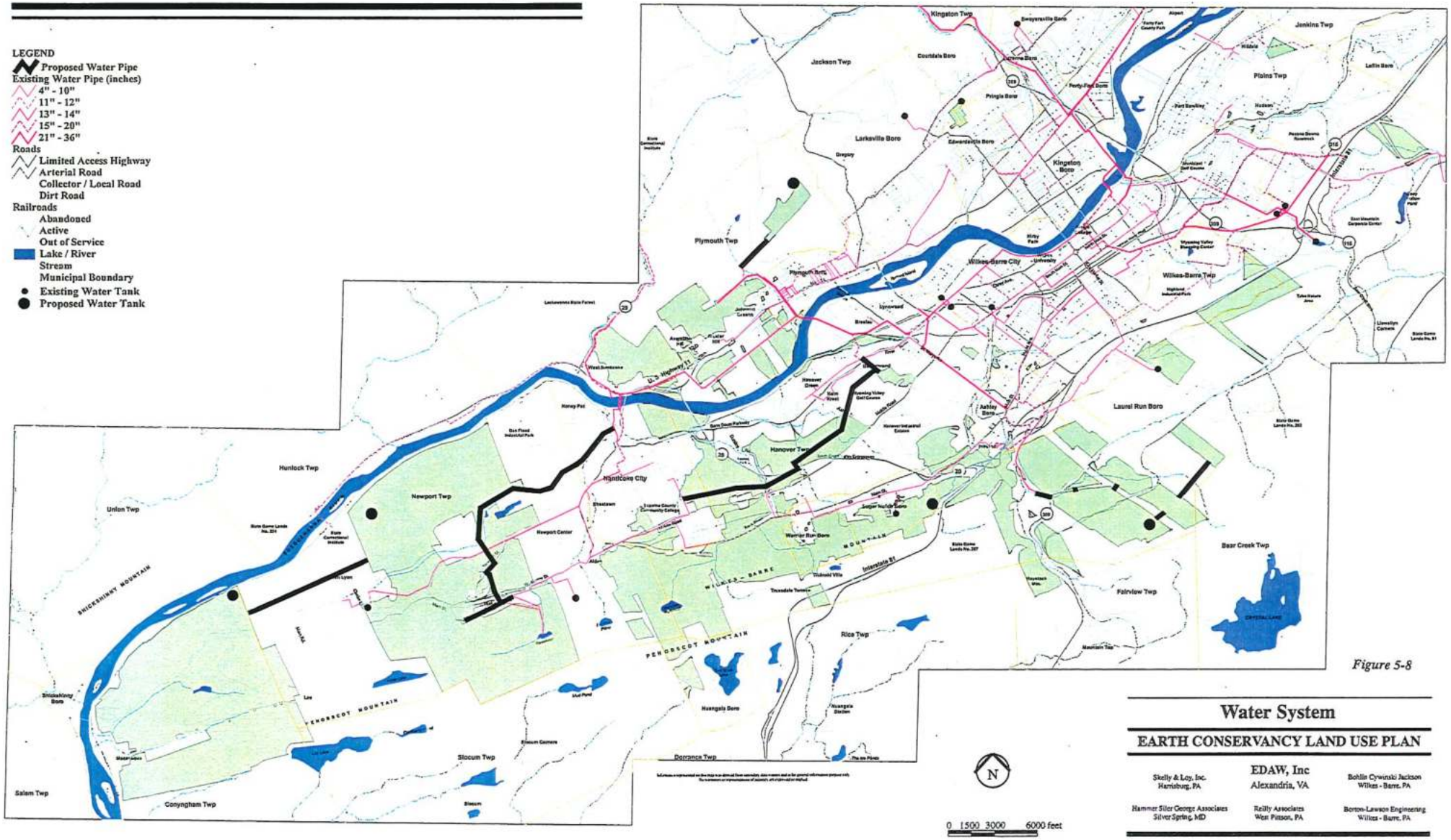


Figure 5-8

Water System

EARTH CONSERVANCY LAND USE PLAN

Skelly & Loy, Inc. Harrisburg, PA	EDAW, Inc Alexandria, VA	Bohlin Cywinski Jackson Wilkes - Barre, PA
Hammer Siler George Associates Silver Spring, MD	Reilly Associates West Pittson, PA	Borton-Lawson Engineering Wilkes - Barre, PA

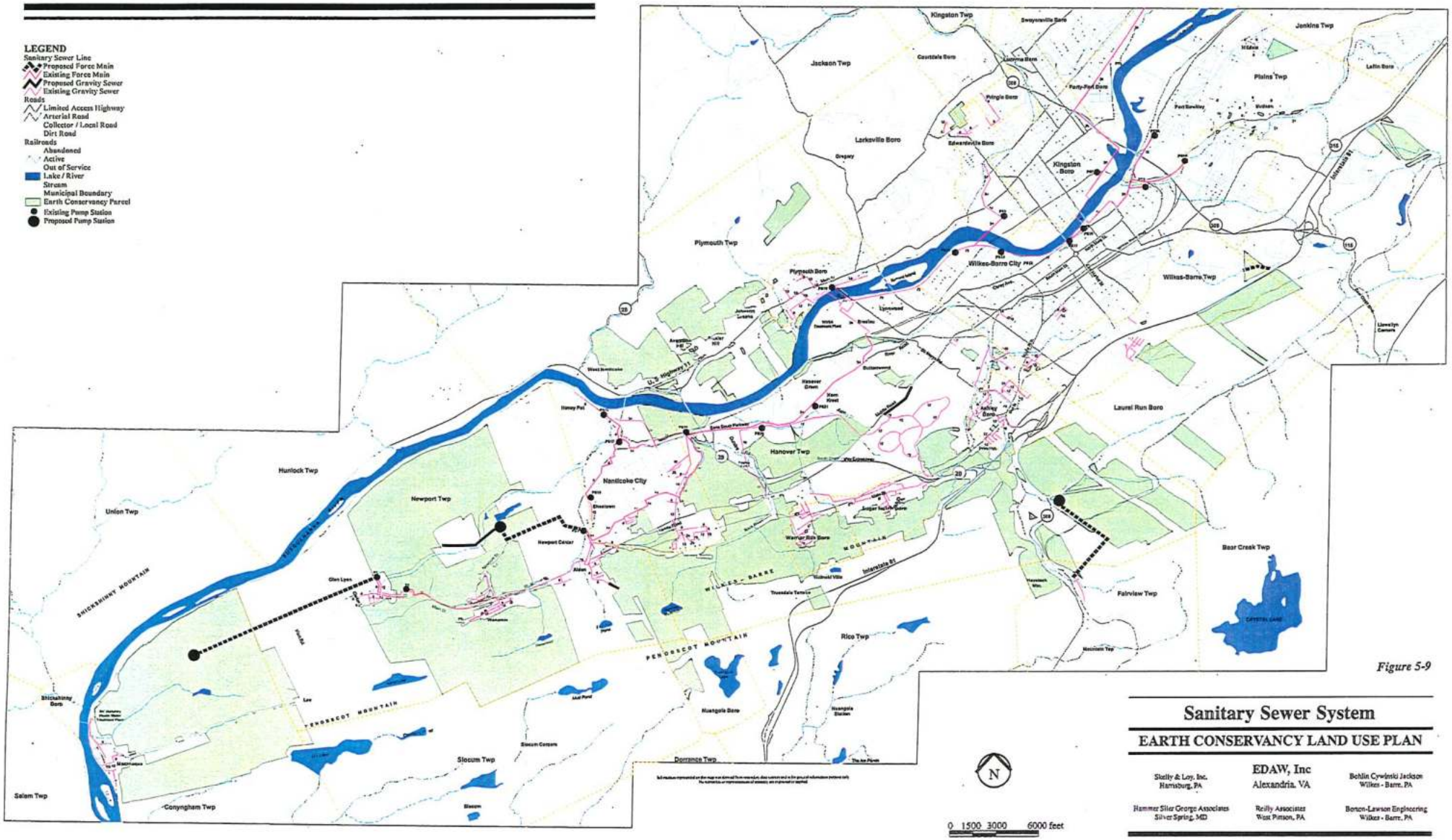
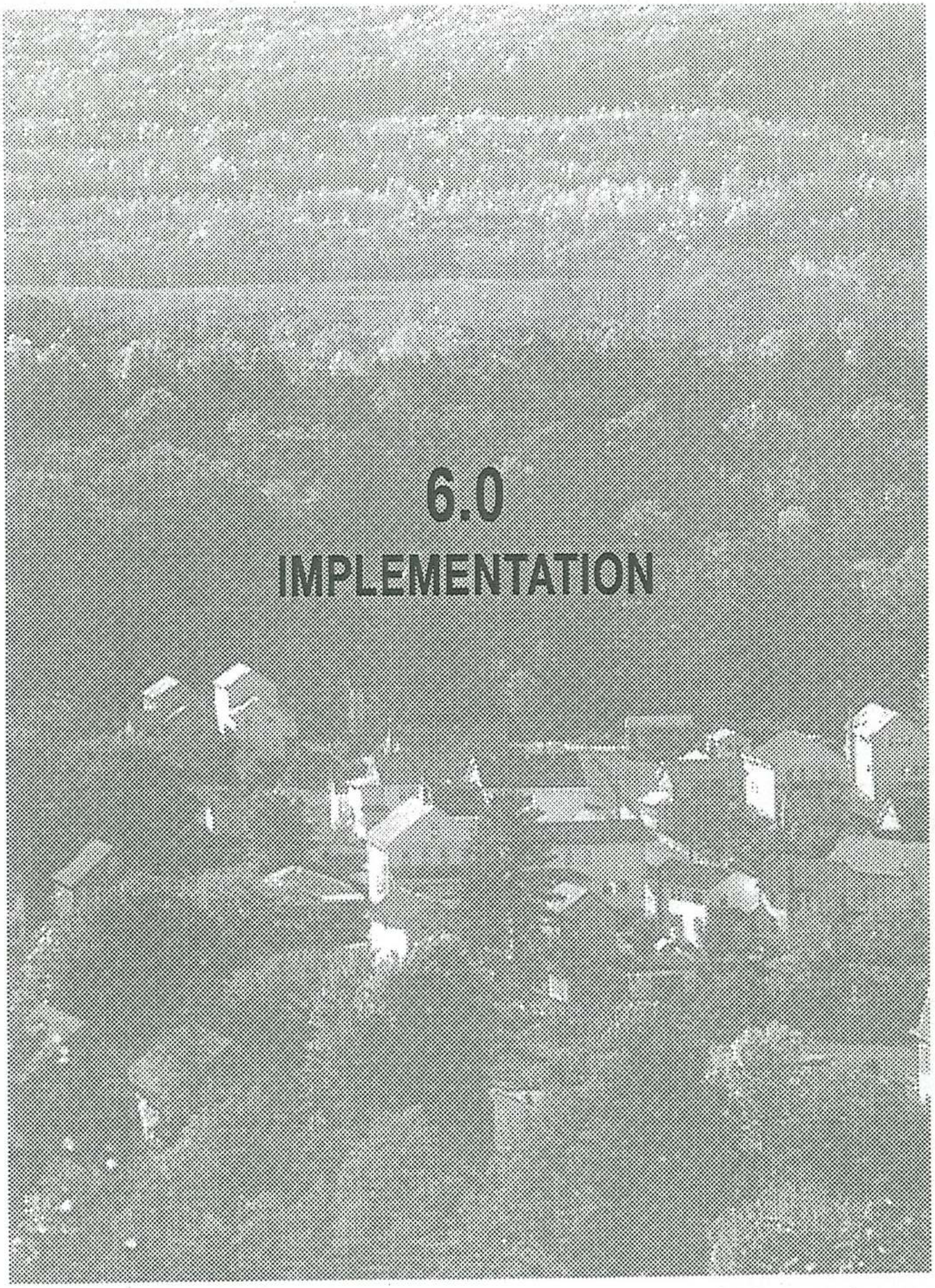


Figure 5-9

Sanitary Sewer System

EARTH CONSERVANCY LAND USE PLAN

Skelly & Loy, Inc. Harrisburg, PA	EDAW, Inc Alexandria, VA	Bohlin Cywinski Jackson Wilkes - Barre, PA
Hammer Siler George Associates Silver Spring, MD	Reilly Associates West Pittson, PA	Barton-Lawson Engineering Wilkes - Barre, PA



6.0
IMPLEMENTATION

6.0 IMPLEMENTATION

6.1 Phasing Plan

6.1.1 Overall Approach

Implementation of the Land Use Plan is proposed to occur generally over 25 years with development in some of the more isolated areas beyond that time frame. The following factors potentially affect the timing of development of the EC parcels:

- market demand for a particular use at a specific point in time;
- pre-existing leases on selected parcels that render them unavailable until some future time;
- the extent of mining-related reclamation required on a parcel;
- proximity of adequate utilities; and,
- roadway access.

Each of these factors is associated with costs (see Section 6.2 below) that similarly influence the appropriate phasing of the Land Use Plan.

To assist in preparing the phasing plan for implementation of the Land Use Plan, a simplified version of the proposed development concept was created that generalizes the land uses proposed for each parcel (see Figure 6-1). Three broad phases were then established for the planning period so that each land use could be assigned a general development timeframe. The three phases are:

- Phase 1: 1996-2001
- Phase 2: 2002-2011
- Phase 3: 2012-2021

A phasing plan that reflects EC's priorities and responds to current market trends is depicted in Figure 6-2; the development phase associated with each EC parcel over 5 acres is presented in Table 6-1. The parcels proposed for the earlier phases are those parcels with the least amount of reclamation required and are near available utilities and roadways which would minimize associated development costs. The parcels shown for later phases will require substantial investments and infrastructure improvements that are predicted to occur within the designated time periods but may take longer depending on the market demand generated for these planned uses. It is EC's intent that parcels requiring extensive reclamation would be sold only after reclamation was complete or after receipt of a commitment that the purchaser would perform the necessary reclamation.

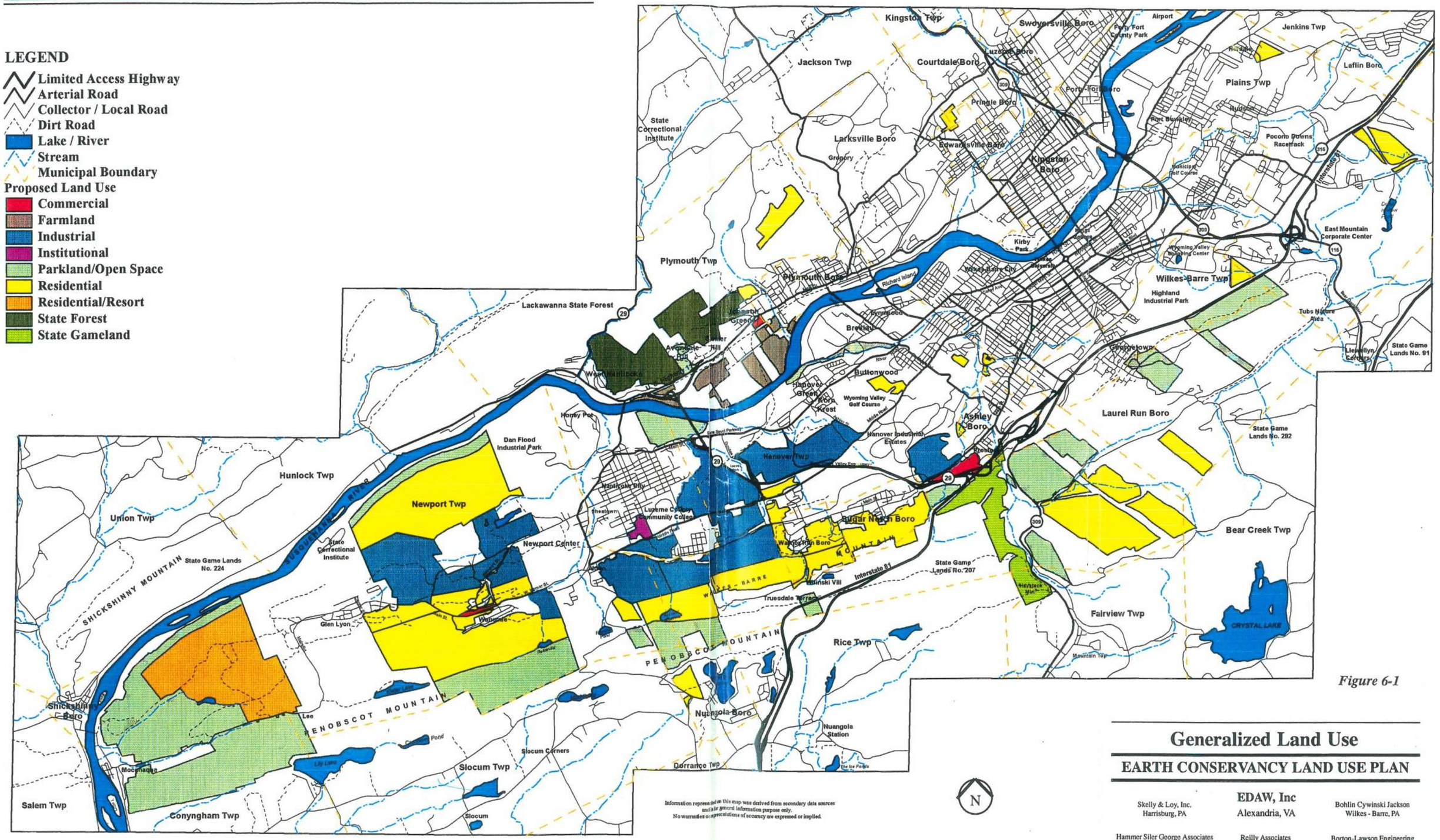
Development on some of these areas, such as the parcels designated for the second and third phases in Newport Township, is also dependent on significant access improvements. Phasing of the alternative transportation alignments presented in Section 5.2 would be similar to the Land Use Plan, with the first phase being those alignments proposed near Route 29 and Interstate 81 and the later phases being proposed further southwest towards Glen Lyon in Newport Township.

LEGEND

- Limited Access Highway
- Arterial Road
- Collector / Local Road
- Dirt Road
- Lake / River
- Stream
- Municipal Boundary

Proposed Land Use

- Commercial
- Farmland
- Industrial
- Institutional
- Parkland/Open Space
- Residential
- Residential/Resort
- State Forest
- State Gameland



Information represented on this map was derived from secondary data sources and is for general information purpose only. No warranties or representations of accuracy are expressed or implied.

Figure 6-1

Generalized Land Use

EARTH CONSERVANCY LAND USE PLAN

Skelly & Loy, Inc. Harrisburg, PA	**EDAW, Inc** Alexandria, VA	Bohlin Cywinski Jackson Wilkes - Barre, PA
Hammer Siler George Associates Silver Spring, MD	Reilly Associates West Pittson, PA	Borton-Lawson Engineering Wilkes - Barre, PA

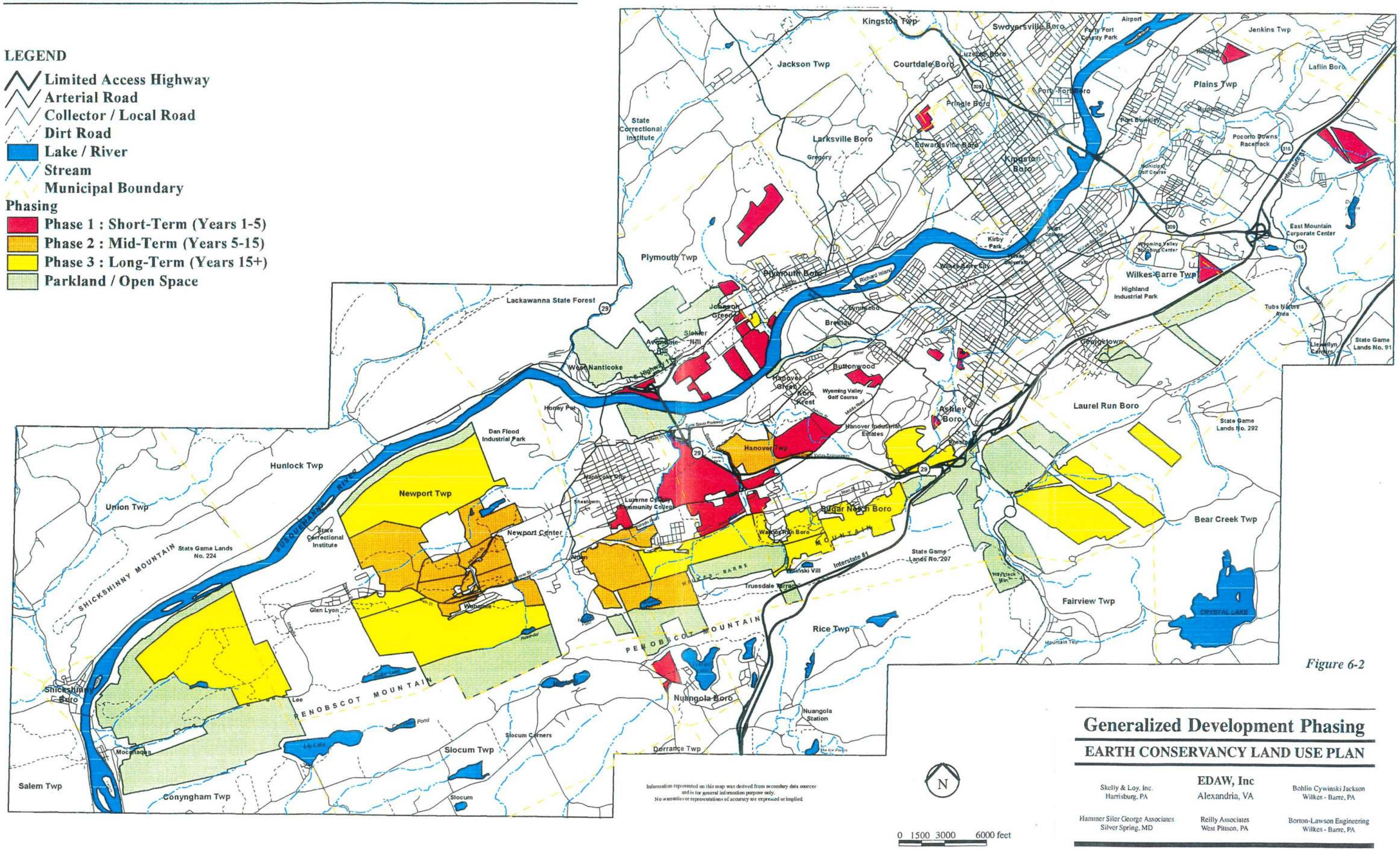


Figure 6-2

Generalized Development Phasing

EARTH CONSERVANCY LAND USE PLAN

Skelly & Loy, Inc.
Harrisburg, PA

EDAW, Inc
Alexandria, VA

Bohlin Cywinski Jackson
Wilkes - Barre, PA

Hammer Siler George Associates
Silver Spring, MD

Reilly Associates
West Pittson, PA

Borton-Lawson Engineering
Wilkes - Barre, PA

Table 6-1
EC Parcels Data Matrix

Parcel #	Municipality (principal)	Acreages		Proposed Development			Development Issues		
		Total	Developable	Proposed Land Use	Density	Dev't Phase	Existing Lease	Active Permits	Road Access
Plai-1	Plains Twp	35	27	Residential	Medium	1			x
Plai-2		5	5	Residential	Medium	1			x
Plai-4		34	12	Residential	Low	1			
Plai-5		100	59	Residential	Low	1			
Plai-6*		11	5	Residential	Low	1			x
Wilt-1	Wilkes-Barre Twp	48	36	Residential	Medium	1			x
Wilt-2		296	240	Open Space/Park	-				x
Wilt-4		11		Open Space/Park	-				
Laur-1	Laurel Run Boro	107	64	Residential	Low	3			
Laur-2		102		Open Space/Park	-				x
Laur-4		10		Open Space/Park	-				x
Laur-5		28		Open Space/Park	-				x
Laur-6		20		Open Space/Park	-				
Laur-7		55		Open Space/Park	-				x
Prin-1	Pringle Boro	34	27	Residential	Medium	1			x
Plyb-5	Plymouth Boro	15	15	Farmland	-	3	x		
Plyt-1	Plymouth Twp	19		Farmland	-	1	x		
Plyt-2		60		Farmland	-	1	x		
Plyt-3		85	24	Farmland	-	1	x		x
Plyt-4		9	9	Farmland	-	1	x		x
Plyt-5		19		Farmland	-	1	x		x
Plyt-7		85		Farmland	-	1			
Plyt-9		24		Farmland	-	1			x
Plyt-10		12		Farmland	-	1			
Plyt-11		433	126	State Forest	-	-			x
Plyt-12		24	16	Open Space/Park	-	1			x
Plyt-16		11	8	Open Space/Park	-	2			
Plyt-17		365	212	State Forest	-	-			x
Plyt-18		26	18	Residential	Very Low	1			x
Plyt-19		11	7	Commercial	Small-scale	1			x
Plyt-20		134	66	Residential	Medium	1			
Hano-1*	Hanover Twp	12	6	Residential	Medium	1			x
Hano-2		18	18	Residential	Medium	1			x
Hano-4		14	0	Residential	Medium	1			x

Table 6-1
EC Parcels Data Matrix
(continued)

Parcel #	Municipality (principal)	Acreages		Proposed Development			Development Issues		
		Total	Developable	Proposed Land Use	Density	Dev't Phase	Existing Lease	Active Permits	Road Access
Hano-5		78		Open Space/Park	-	-			
Hano-6		38	23	Residential	Medium	1			x
Hano-7a		230	186	Industrial	Light	1			x
Hano-7b		214	180	"	"	2	x		x
Hano-8		46	27	Residential	Medium	1			x
Hano-9		374	303	Industrial	Light	1			x
Hano-10		167	136	Industrial	Med/Heavy	1			x
Hano-12		54	54	Residential	High	1			x
Hano-13a		1,687	98	Industrial	Med/Heavy	3	x		x
Hano-13b		"	320	Industrial	Med/Heavy	2	x	x	x
Hano-13c		"	14	Residential	Low	2			
Hano-13d		"	135	Residential	Low	2			
Hano-13e		"	39	Residential	Low	3	x	x	
Hano-13f		"		Open Space/Park	-	-			
Hano-13g		"		Open Space/Park	-	-			
Hano-14		12	6	Residential	Low	3			
Hano-15		18		Open Space/Park	-	-			
Hano-16		28		Open Space/Park	-	-			
Hano-17		485	160	State Gameland	-	-			
Hano-18		8		Open Space/Park	-	-			
Hano-19		295		Open Space/Park	-	-			x
Hano-20		121		Open Space/Park	-	-			
Hano-21		143	120	Residential	Low	3			
Hano-22		32	32	Residential	Low	3			
Hano-24		117	51	Open Space/Park	-	-			
Hano-25		802	307	Residential	Low	3			
Hano-26		232	120	Residential	Low	3			
Hano-27		69	37	Commercial	Large-scale	3	x	x	x
Hano-28		177	143	Industrial	Light	3	x	x	x
Hano-29		10	10	Residential	Medium	1			x
Nant-1	Nanticoke City	42	38	Institutional	-	1			x
Nant-2		92	86	Industrial	Light	2			x
Nant-3		186		Open Space/Park	-	-			x
Sugn-1a	Sugar Notch Boro	618	81	Residential	Low	3	4444		x
Sugn-1b		"	31	Residential	Low	3			
Sugn-1c		"	90	Residential	Low	3			
Sugn-1d		"	76	Open Space/Park	-	-		x	

Table 6-1
EC Parcels Data Matrix
(continued)

Parcel #	Municipality (principal)	Acreages		Proposed Development			Development Issues		
		Total	Developable	Proposed Land Use	Density	Dev't Phase	Existing Lease	Active Permits	Road Access
Nuan-1	Nuangola Boro	65	61	Residential	Low	1			x
Nuan-2*		6	3	Residential	Low	1			x
Newp-1a	Newport Twp	1,996		Open Space/Park	-	-		x	
Newp-1b		"	687	Residential	Low	3			
Newp-1c		"	388	Industrial	Med/Heavy	2			
Newp-1d		"	167	Industrial	Med/Heavy	2			x
Newp-2		39	39	Industrial	Med/Heavy	2			x
Newp-2 - Res.		20	20	Residential	Medium	1			
Newp-3a		214	84	Industrial	Med/Heavy	2			x
Newp-3b		"	74	Residential	Medium	2			
Newp-3b - Res.		10	10	Residential	Medium	1			
Newp-4		20	11	Residential	High	2			
Newp-5a		184	97	Industrial	Med/Heavy	2		x	x
Newp-5b		"	87	Residential	Medium	2			x
Newp-5b - Res.		10	10	Residential	Medium	1			
Newp-6*		8	4	Residential	Medium	2			x
Newp-7		15	15	Commercial	Small-scale	2			x
Newp-16		37	4	Recreation		2			x
Newp-17a		1,863	44	Residential	Medium	3			
Newp-17b		"	379	Residential	Low	3			
Newp-17c		"	58	Commercial/Inds.		2			
Newp-19		43		Open Space/Park	-	-			
Cony-1a	Conyngham Twp	1,994	979	Residential/Resort	Low	3			x
Cony-1b		"	357	Open Space/Park	-	-	x		x
Cony-2		1,110	71	Open Space/Park	-	-			x

Legend/Assumptions:

Parcel #: only parcels over 5 acres included.
Total Acreage: approximate; based on computer-generated data or recent survey.
Developable Acreage: approximate; excludes most constraints areas.
Development Phase: 1 Short-term (1996-2001); 2 Mid-term (2001-2011); 3 Long-term (2011-2021)
* Half of total area assumed developable.

Density:	Range (net):	Average (gross):
Very-low-density Residential	5-acre lots	5.0 ac./lot
Low-density Residential	2-acre lots	2.2 ac./lot
Medium-density Residential	1/2-acre lots	0.5 ac./lot
Medium-density Residential	1/4 to 1/3-acre lots	0.4 ac./lot
High-density Residential	4 to 15 units/acre	5.0 ac./lot
Light Industrial	5 to 15-acre lots	10 ac./lot
Medium/Heavy Industrial	10 to 75-acre lots	25 ac./lot

6.1.2 Phase 1

The proposed first phase of development includes three parcels in Hanover Township adjacent to the S.R. 29 corridor that are proposed for new industrial development (Hano-7a, 9, and 10; refer to Figures 3-1 and 6-2). These parcels, totaling approximately 600 acres of developable land area (almost 1,000 acres total), are key parcels envisioned to initiate the development process on EC land holdings. At this point in the planning process, it is assumed that some or all of these properties would be developed in cooperation with the Greater Wilkes-Barre Chamber of Business and Industry, which is responsible for industrial park development in the Wilkes-Barre area.

As part of the Phase 1 development activities, improved utility services would be required to service industrial development within the Hano-7a and Hano-10 parcels. The costs of these improvements would be borne by the development entity.

A new interchange and road link between S.R. 29 and Kosciuzko Street next to the Community College, which is required to service the Hano-9 parcel and improve conditions on Middle Road, is the first transportation improvement proposed (see recommended transportation improvements in Section 5.2). Since this roadway improvement would be sponsored by PennDOT, the timing is dependent on approval by the Luzerne County Planning Commission and the Luzerne-Lackawanna Transportation Study acting as the local Metropolitan Planning Organization. The timing of these approvals will affect the timing of industrial development proposed for the Hano-9 parcel and other parcels to the west. The proposed linkage between S.R. 29 and Kosciuzko Street is EC's highest priority transportation project.

Several other significant development proposals in the first phase of development include: two parcels proposed for residential development in Hanover (Hano-6 and 12), potential expansion of the Community College across Prospect Street on a 42-acre parcel now undergoing reclamation (Nant-1), and residential development on EC land within the Nuangola Borough. (See Table 6-2 for proposed Phase 1 development parcels.) These parcels are readily developable and important as initial revenue-generating opportunities for EC in the short-term.

The phasing plan recommends that several of the outlying EC parcels proposed for residential use be sold in Phase 1 since they are not integral components of the plan and are outside the core development areas in Hanover, Newport and Conyngham Townships. In addition, there are numerous parcels less than 5 acres in size that are also recommended for sale in accordance with their zoning in the first phase. These initial sales are intended to generate revenues for EC that can contribute to the land preparation costs associated with other Phase 1 parcels, as well as to the organization's general operating budget and outstanding loan payments due over the next two years.

Table 6-2
Phase 1 Development Parcels
(1996 - 2001)

	Acreage			Proposed Development					
Parcel #	Total	Developable	Land Use	Density/FAR	Acres	Square Feet	Units	Septic	Wells
Plai-1	35	27	Residential	Medium	--	--	54		
Plai-2	5	5	Residential	Medium	--	--	10		
Plai-4	34	12	Residential	Low	--	--	5	✓	
Plai-5	100	59	Residential	Low	--	--	27	✓	
Plai-6*	11	5	Residential	Low	--	--	2	✓	
Wilt-1	48	36	Residential	Medium	--	--	90		
Prin-1	34	27	Residential	Medium	--	--	81		
Plyt-18	26	18	Residential	Very Low	--	--	4		
Plyt-19	11	7	Retail	Small-scale	--	50,000	--		
Plyt-20	134	66	Residential	Medium	--	--	165		
Hano-1*	12	6	Residential	Medium	--	--	15		
Hano-2	18	18	Residential	Medium	--	--	45		
Hano-4	14	0	Residential	Medium	--	--	0		
Hano-6	38	23	Residential	Medium	--	--	58		
Hano-7a	230	186	Office/Indust.	Light/0.21	170	1,560,000	--		
			Retail	Small-scale/0.09	10	40,000	--		
			Hotel		6	Hotel Rooms:	150		
Hano-7b+	214	180	Office/Indust.	Light/0.22	112	1,075,000	--		
			Distribution	0.25	62	670,000	--		
			Retail	Small-scale/0.19	6	50,000	--		
Hano-9	374	303	Office/Mfg.	Light/0.19	180	1,520,000	--		
			Distribution	0.16	42	296,000	--		
			Retail	Small-scale/0.14	10	60,000	--		
Hano-10	167	136	Industrial	Med/Heavy/0.24	136	1,435,000	--		
Hano-12	54	54	Residential	High	49		270		
			Retail	Small-scale	5	30,000	--		
Hano-29	10	10	Residential	Medium	--	--	25		
Nant-1	42	38	Institutional	--	--	--	--		
Nuan-1	65	61	Residential	Low	--	--	28	✓	✓
Nuan-2*	6	3	Residential	Low	--	--	1	✓	✓
Total	**1,682**	**1,280**		**Industrial/Office:**		**6,556,000**			
				Retail:		**230,000**			

* Half of total area assumed developable.
\+ Scheduled as a Phase 2 parcel, but could be accelerated to Phase 1.

Other Phase 1 activities (not all shown in Figure 6-2) include continuing the present commercial leasing activities now being managed by EC. These include the agricultural leases located in Plymouth Township and Nanticoke City and the leases for removal of six separate culm banks in Plymouth, Hanover and Conyngham Townships. Also, selective timbering of portions of the EC land holdings on Penobscot Mountain has been initiated and would continue.

6.2 Capital Improvement Costs

6.2.1 Reclamation

As presented in Section 3.3, approximate costs for reclaiming mine-scarred land have been estimated for each EC parcel (see Table 3-3). These cost estimates address reducing subsidence risk, sealing portals and shafts, removing culm banks, filling pits, and extinguishing mine fires. For the purposes of this report, the costs of extinguishing mine fires are considered prohibitive; therefore, calculations of the reclamation cost for each EC parcel exclusive of mine fire costs are presented in Table 6-3 below.

Costs have not been estimated in this report for reclamation of acid mine drainage. While the specific locations of acid mine water outfalls were mapped by Skelly & Loy (see Figure 3-4), the subsurface mine pools which are the source of the discharges extend throughout the Valley and are not specific to EC property. This serious environmental problem is beginning to be addressed locally through EPA-funded demonstration projects being undertaken by EC with assistance from Wilkes University. One project aims to demonstrate the effectiveness of passive water quality treatment through a constructed wetland, while another will aggressively treat the acid mine water through the use of physical and chemical processes. These treatment systems will be studied over the long-term to determine their effects and benefits.

Reclamation would proceed on EC parcels in accordance with the phasing plan presented above in Section 6.1. As parcels are prepared for sale or development by EC, reclamation would be scheduled. As noted above, EC's goal is to reclaim properties prior to selling them or to receive commitment from purchasers to reclaim the land; therefore, Phase 1 parcels generally do not require the extensive reclamation required of some of the later phase parcels. This timing provides EC an opportunity to secure funding for and conduct reclamation prior to selling or developing the later phase parcels. The financing and funding challenges related to conducting reclamation are discussed in Section 6.3, below.

The reclamation cost estimates have not been reduced by the potential DEP reclamation projects that could occur on some of these lands since the exact nature and timing of these projects have not been determined. The cost estimates assume standard reclamation methods at 1996 prices.

An opportunity exists for EC to reduce reclamation costs through the use of the fly-ash that results from the burning of coal material/culm in electricity generation plants. Currently, power plant operators will pay for the transport and disposal of the ash by-product. The huge pits and other land scars remaining from surface mining activities provide appropriate receptacles for this material. In this manner, the pits can be filled and remediated at a substantially reduced cost. In particular, the

Table 6-3
Site Development Costs by Parcel

Parcel #	Internal Site Development Costs							Reclamation	External Utility Costs		Total Cost	
	Sewer	*Septic*	Water	*Wells*	Electricity/ Tele/Cable	Roads	Site Prep		Sewer	Water	Total Cost	per Gross Acre
Plai-1	$303,800		$320,600		$236,300	$506,300	$40,500	$365,000	$0	$0	$1,772,500	$50,875
Plai-2	$56,300		$59,400		$43,800	$93,800	$8,160	$10,000	$0	$0	$271,460	$49,901
Plai-4	$0	*x*	$72,000		$53,000	$113,600	$51,600	$50,000	$0	$0	$340,200	$9,890
Plai-5	$0	*x*	$353,800		$260,700	$558,700	$149,865	$42,000	$0	$0	$1,365,065	$13,663
Plai-6	$0	*x*	$30,000		$22,100	$47,400	$16,305	$0	$0	$0	$115,805	$10,654
Wilt-1	$720,000		$760,000		$560,000	$1,200,000	$72,300	$0	$168,000	$0	$3,480,300	$72,205
Wilt-2*								$180,000			$180,000	
Wilt-4*								(mine fire)				
Laur-1	$0	*x*	$383,800		$282,800	$606,100	$160,620	$0	$0	$391,000	$1,824,320	$17,037
Laur-2*								(mine fire)				
Laur-4*								"				
Laur-5*								"				
Laur-6*								"				
Laur-7												
Prin-1	$487,900		$515,100		$379,500	$813,200	$50,475	$180,000	$0	$0	$2,426,175	$71,358
Plyb-5								$75,000			$75,000	
Plyt-1								$0			$0	
Plyt-2								$0			$0	
Plyt-3								$0			$0	
Plyt-4								$0			$0	
Plyt-5								$0			$0	
Plyt-7								$145,000			$145,000	
Plyt-9								$0			$0	
Plyt-10								$250,000			$250,000	
Plyt-11								$10,707,000			$10,707,000	
Plyt-12								$0			$0	
Plyt-16								$0			$0	
Plyt-17								$35,975,000			$35,975,000	
Plyt-18	$61,000		$64,400		$47,400	$101,600	$38,655	$0	$0	$0	$313,055	$12,148
Plyt-19	$26,300		$33,500		$20,400	$43,800	$16,140	$180,000	$25,000	$0	$345,140	$32,076
Plyt-20	$1,320,000		$1,393,300		$1,026,700	$2,200,000	$200,595	$0	$149,500	$810,500	$7,100,595	$53,097
Hano-1	$120,000		$126,700		$93,300	$200,000	$18,000	$0	$0	$0	$558,000	$46,500
Hano-2	$360,000		$380,000		$280,000	$600,000	$27,000	$0	$204,000	$0	$1,851,000	$102,833

Table 6-3
Site Development Costs by Parcel

Parcel #	Internal Site Development Costs							Reclamation	External Utility Costs		Total Cost	
	Sewer	*Septic*	Water	*Wells*	Electricity/ Tele/Cable	Roads	Site Prep		Sewer	Water	Total Cost	per Gross Acre
Hano-4	$0		$0		$0	$0	$21,000	$20,000	$0	$0	$41,000	$2,929
Hano-5								$75,000	$0		$75,000	
Hano-6	$460,000		$485,600		$357,800	$766,700	$57,000	$280,000	$420,000	$172,500	$2,999,600	$78,937
Hano-7a	$264,300		$411,200		$205,500	$440,400	$225,000	$385,714	$0	$507,500	$2,439,614	$13,116
Hano-7b	$255,800		$398,000		$198,900	$426,200	$247,500	$424,286	$0	$217,500	$2,168,186	$12,045
Hano-8	$540,000		$570,000		$420,000	$900,000	$69,000	$0	$11,500	$23,000	$2,533,500	$55,076
Hano-9	$430,600		$669,900		$334,800	$717,500	$561,000	$425,000	$0	$14,500	$3,153,300	$8,431
Hano-10	$193,300		$247,000		$150,300	$322,000	$251,175	$530,000	$0	$0	$1,693,775	$10,115
Hano-12	$1,103,800		$1,165,100		$858,500	$1,839,700	$81,000	$30,000	$0	$0	$5,078,100	$94,039
Hano-13a	$139,300		$178,000		$108,300	$232,100	$147,000	$1,166,135	$150,000	$0	$2,120,835	$21,641
Hano-13b	$454,700		$581,100		$353,600	$757,800	$480,000	$3,807,789	$375,000	$0	$6,809,989	$21,281
Hano-13c	$65,900		$0	x	$115,300	$247,100	$21,000	$166,591	$0	$0	$615,891	$43,992
Hano-13d	$635,300		$0	x	$1,111,700	$2,382,300	$202,500	$1,606,411	$0	$0	$5,938,211	$43,987
Hano-13e	$183,500		$0	x	$321,200	$688,200	$58,500	$464,074	$0	$0	$1,715,474	$43,987
Hano-13f								$0				
Hano-13g								$0				
Hano-14	$0	x	$0	x	$26,500	$56,800	$17,550	$50,000	$0	$0	$150,850	$12,893
Hano-15								$0	$0		$0	
Hano-16								$0	$0		$0	
Hano-17								$180,000	$0		$180,000	
Hano-18								$0	$0		$0	
Hano-19								$460,000	$0		$460,000	
Hano-20								$3,000	$0		$3,000	
Hano-21	$406,400		$429,000		$316,100	$677,400	$214,695	$0	$57,500	$34,500	$2,135,595	$14,921
Hano-22	$108,400		$114,400		$84,300	$180,600	$47,850	$0	$11,500	$23,000	$570,050	$17,870
Hano-24								$0			$0	
Hano-25	$1,039,800		$1,097,500		$808,600	$1,733,000	$1,203,000	$0	$1,150,000	$715,000	$7,746,900	$9,659
Hano-26	$406,400		$429,000		$316,100	$677,400	$348,000	$0	$57,500	$69,000	$2,303,400	$9,928
Hano-27	$70,100		$89,600		$54,500	$116,800	$104,115	$125,000	$12,500	$0	$572,615	$8,250
Hano-28	$287,900		$367,800		$223,900	$479,800	$264,795	$830,000	$0	$0	$2,454,195	$13,902
Hano-29	$200,000		$211,100		$155,600	$333,300	$14,580	$0	$0	$0	$914,580	$94,093
Nant-1	$54,000		$117,000		$42,000	$90,000	$63,390	$0	$6,250	$0	$372,640	$8,818
Nant-2	$173,100		$221,200		$134,700	$288,500	$137,445	$30,000	$0	$0	$984,945	$10,749
Nant-3								$0			$0	
Sugn-1a*	$460,200		$485,800		$357,900	$767,100	$121,500	$810,000	$0	$0	$3,002,500	$37,068
Sugn-1b*	$105,000		$0	x	$81,700	$175,000	$46,500	$310,000	$46,000	$0	$764,200	$24,652
Sugn-1c*	$511,400		$539,700		$397,700	$852,300	$135,000	$900,000	$0	$0	$3,336,100	$37,068

Table 6-3
Site Development Costs by Parcel

Parcel #	Internal Site Development Costs							Reclamation	External Utility Costs		Total Cost	
	Sewer	*Septic*	Water	*Wells*	Electricity/ Tele/Cable	Roads	Site Prep		Sewer	Water	Total Cost	per Gross Acre
Sugn-1d*	$0		$0		$0	$0	$0	$760,000	$0	$0	$760,000	
Nuan-1	$0	*x*	$0	*x*	$269,600	$577,700	$97,500	$0	$0	$0	$944,800	$14,535
Nuan-2	$0		$0		$12,800	$27,500	$8,925	$0	$0	$0	$49,225	$8,204
Newp-1a												
Newp-1b	$3,903,500		$4,119,900		$3,035,900	$6,505,900	$1,030,500	$33,000,338	$92,000	$0	$51,688,038	$75,237
Newp-1c	$551,300		$704,600		$428,700	$918,800	$582,000	$18,637,746	$750,000	$845,000	$23,418,146	$60,356
Newp-1d	$237,300		$303,300		$184,500	$395,500	$250,500	$8,021,916	$1,587,500	$1,015,000	$11,995,516	$71,829
Newp-2	$55,400		$70,800		$43,100	$92,400	$58,080		$23,000	$0	$342,780	$8,853
Newp-2 -Res.	$225,000		$237,500		$175,000	$375,000	$30,000				$1,042,500	$52,125
Newp-3a	$119,400		$152,500		$92,800	$198,900	$126,000	$635,000	$37,500	$0	$1,362,100	$16,215
Newp-3b	$832,500		$878,800		$647,500	$1,387,500	$111,000	$635,000	$0	$0	$4,492,300	$60,707
Newp-3b -Res.	$112,500		$118,800		$87,500	$187,500	$15,000				$521,300	$52,130
Newp-4	$224,900		$237,300		$174,900	$374,700	$29,760	$0	$0	$0	$1,041,560	$52,498
Newp-5a	$137,800		$176,200		$107,200	$229,700	$145,500	$227,500	$12,500	$0	$1,036,400	$10,685
Newp-5b	$978,800		$1,033,100		$761,300	$1,631,300	$130,500	$227,500	$0	$0	$4,762,500	$54,741
Newp-5b -Res	$112,500		$118,800		$87,500	$187,500	$15,000				$521,300	$52,130
Newp-6	$45,000		$47,500		$35,000	$75,000	$11,820	$180,000	$0	$0	$394,320	$50,041
Newp-7	$56,300		$71,900		$43,800	$93,800	$22,590	$0	$37,500	$0	$325,890	$21,639
Newp-16								$100,000	$0	$0	$100,000	$2,715
Newp-17a*	$495,000		$522,500		$385,000	$825,000	$66,000	$18,295	$0	$0	$2,311,795	$52,541
Newp-17b*	$2,153,500		$568,200	*75%*	$1,674,800	$3,589,100	$568,500	$157,588	$322,000	$0	$9,033,688	$23,836
Newp-17c	$109,900		$140,400		$85,500	$183,200	$87,000	$24,116	$0	$0	$630,116	$10,864
Newp-19								$0			$0	
Cony-1a	$5,562,700		$5,871,100		$4,326,200	$9,271,100	$1,468,500	$48,309,546	$1,690,000	$1,715,500	$78,214,646	$39,230
Cony-1b								$17,616,454			$17,616,454	
Cony-2								$0			$0	
Total	$27,917,800		$28,673,800		$23,500,100	$50,359,600	$10,844,985	$189,789,000	$7,396,250	$6,553,500	$345,035,035	$55,651
											assuming approximately 6,200 acres developed	

Legend/Assumptions:

* Parcel includes mine fire; reclamation costs exclude costs of extinguishing.

Site Prep: $1,500 per acre for clearing and grubbing. Site prep costs will depend on topography and vegetation on each parcel. Based on total acreage except where parcel is divided into sub-parcels (a, b, c, etc.); in those cases, based on developable acreage only.

Reclamation Costs: Apportioned to sub-parcels according to their percentage of total developable area within the parcel.

Source: Site Development Costs: Reilly Associates, 1996 (Appendix A.6); Reclamation Costs: Skelly & Loy, 1996 (Appendix A.5).

use of fly-ash as a beneficial use in reclaiming these areas should be considered. Current studies indicate no environmental degradation risk associated with this ash as a fill material.

In the future, development of new uses for fly-ash may increase demand to the point that operators will no longer need to pay to have ash carried off. EC should move quickly to take advantage of this resource as a reclamation material before shifting economics make it financially infeasible.

A potential ash disposal location in Newport Township (EC parcel Newp-1) has been identified and a possible conveyor system extending from the railroad lines along the Susquehanna River to haul the ash to this site has been described by Skelly & Loy in their mining report, Appendix A.5. This type of transportation system for the fly-ash would eliminate the need to haul the material by truck to the disposal location, thereby avoiding any negative effects from truck traffic.

6.2.2 Utilities

As part of the implementation analysis, the site development costs in addition to reclamation were estimated for all EC parcels over 5 acres that are proposed for development. These cost estimates are presented in Table 6-3, below. As shown in Table 6-3, estimates are provided for both internal and external costs. Internal development costs would be incurred for roads, water and sewer systems, site preparation, and other utilities (underground electricity, telephone, and cable lines). External costs include the costs of extending water and sewer service to the parcel if inadequate facilities currently exist. These cost estimates are based on detailed cost estimates specific to the proposed use (residential, industrial or commercial), density (low, medium, high, etc.), and the type of service provided (i.e., septic versus sewer system).

6.2.3 Transportation

Costs also have been estimated for developing the transportation network necessary to serve the proposed development. Since a number of alternative alignments have been analyzed as part of Step 4 of PennDOT's TPDP (see Section 5.2), the costs associated with each of these possible transportation improvements have been estimated and are presented in Table 6-4. A more detailed break-down of estimated costs by each road segment comprising the alternative alignments is provided in Borton-Lawson Engineering's report in Appendix A.7.

As indicated in the table, the costs of both upgrading of existing roads and constructing new roads are significant. Since these potential improvement projects would be the responsibility of PennDOT, the process of selecting preferred alternative alignments and including these projects in the statewide capital funding program needs to be initiated.

A detailed description of the PennDOT project funding process can be found in BLE's report in Appendix A.7.

Table 6-4
Transportation System Costs

Alignment Description	Segment Combinations		Length (miles)	Required Right-of-Way Area (acres)	Cost Estimate* (1996 Dollars)	Total Cost (Primary + Connector) (1996 Dollars)
Integrated	Connector Roads:	C1, C2, C3, C4, C5	5.62	20.44	$15,494,000	
	Primary Roadways:	IA1, IA2, IB1-a, IB2, IC1, IC2, ID, IE1, IE2	16.25	155.66	$55,724,050	$71,218,050
	Primary Roadways:	IA1, IA2, IB1-b, IB2, IC1, IC2, ID, IE1, IE2	16.06	153.36	$53,301,550	$68,795,550
North/South	Connector Roads:	C1, C2, C3, C4	4.65	14.59	$12,728,750	
	Primary Roadways:	NSA1, NSA2, NSB1, NSB2, NSC1-a, NSC2, NSD, NSE	16.40	198.86	$76,026,250	$88,755,000
	Primary Roadways:	NSA1, NSA2, NSB1, NSB2, NSC1-b, NSC2, NSD, NSE	16.52	200.38	$76,884,250	$89,613,000
Southern	Connector Roads:	C1, C2, C3, C4, C5, C6	7.23	31.17	$22,202,250	
	Primary Roadways:	S1-a, S2, S3, S4, S5	16.52	188.43	$98,104,350	$120,306,600
	Primary Roadways:	S1-b, S2, S3, S4, S5	15.80	178.84	$84,388,850	$106,591,100

* Costs include preliminary estimates for construction and right-of-way acquisition.

Source: Borton-Lawson Engineering, 1996 (Appendix A.7).

6.3 Financing & Implementation Strategy

Future sale and development of the Earth Conservancy's land inventory will provide an important source of funding for EC operations. However, land development proceeds alone will not be sufficient to support reclamation of EC properties. Reclamation costs have been estimated at $190 million, not including the more than $330 million to extinguish mine fires. These costs are well beyond the funding potential of almost any real estate development project. In a relatively constrained market such as Luzerne County's, development of EC property has limited potential for generating significant surplus revenues.

6.3.1 Financial Analysis

Market conditions affecting development of EC property will constrain EC's ability to cover reclamation costs from development-related revenues. The Greater Wilkes-Barre market has been characterized by relatively slow growth limited by modest economic and employment gains of recent years. Modest levels of demand for new industrial space and residential units have dampened the supportable land prices. The market prices for finished residential lots (i.e., reclaimed and graded sites serviced with utility lines to the property's edge) are so low in most parts of the region as to prohibit investment in the site improvements required to prepare large parcels of raw, unimproved land for residential development. Site improvement costs for single-family homes with public water and sewer service have been estimated by Reilly Associates to range from $50,600 per acre on half-acre lots to $90,000 per acre on third-acre lots. With ultimate sales prices of $30,000 to $72,500 per acre for finished sites, it is impossible for a developer to cover those costs and earn a reasonable return on investment, let alone pay a high price for the raw land before improvements. Raw land prices of $2,000 to $10,000 per acre offer limited potential for major funding of EC reclamation costs.

Land Sales Revenues

Major Sites. To project potential revenues from future land sales, Hammer, Siler, George Associates (HSGA) compared potential market prices for finished land to the cost of installing the site improvements required for the ultimate industrial, commercial or residential development proposed in the preferred development concept. Supportable land prices were determined based on inputs from local realtors and developers from recent land transactions. The site improvements costs were based on the data presented in Section 6.2 above, including both internal and external site improvement costs (Table 6-3). Major road access improvements are assumed to be constructed and funded by the Pennsylvania Department of Transportation.

In the HSGA financial analysis, revenues from the sale of a particular land parcel were projected only if the potential revenue from sale of finished lots would exceed the cost of improvements by at least 10 to 15 percent to allow a margin for developer profit. The timing of sales was tied to the anticipated absorption pace of industrial land and residential units in Luzerne County and the Wilkes-Barre area submarket. Projected revenues from land sales are presented in Table 6-5.

Over the past five years, development of new housing units has averaged just under 800 units per year in Luzerne County and 300 units per year in the Greater Wilkes-Barre submarket reaching from Shickshinny to Pittston. The absorption potential for the Greater Wilkes-Barre submarket could be expected to increase slightly with an increased supply of available lots for a variety of new housing types. Earth Conservancy properties are expected to capture 20 to 25 percent of the total submarket demand or roughly 70 to 85 units per year. Among that potential demand, low-density estate lots of two to five acres are expected to represent roughly 20 percent, medium-density single-family housing lots roughly 60 percent, and high-density townhouses the remaining 20 percent of annual demand. Individual homebuilders are expected to pace their land acquisitions to reflect that ultimate demand for new housing.

Industrial land absorption in Luzerne County has averaged roughly 77 acres per year over the past five years. Earth Conservancy properties are judged to be very competitive for that demand by virtue of their location, accessibility, topography and size. In the absence of any major new industrial or distribution tenant, absorption of EC industrial properties is projected to average 30 to 50 acres per year. Currently, discussions are underway with a company considering a major industrial development with acquisition of roughly 200 to 250 acres and potential spin-off demand for additional land for companies seeking to be adjacent to the new facility. Such a project would greatly increase the potential demand for and pace of industrial and residential land development in the county.

A healthy Luzerne County economy requires an inventory of improved industrial sites that will allow the area to compete for and attract new industry. Most companies seeking to develop new industrial facilities cannot afford to wait for a piece of raw land to be prepared for development; at best, they have only a year or two to find a site and construct their new plant. The Greater Wilkes-Barre Chamber of Business and Industry (GWBCBI) has taken the lead in providing the area with competitive sites for new industry, but its land inventory is dwindling. The financing strategy assumes that the GWBCBI will acquire the approximately 1,000 gross acres of Earth Conservancy land in Hanover parcels 7a, 7b, 9 and 10 along the South Cross-Valley Expressway (Route 29) at Middle Road. These sites are ideally situated to accommodate major new industry in a quality business park

environment. Future industrial parcels are projected to be sold and developed once these initial parcels have been largely absorbed.

Small Parcels. Earth Conservancy has been marketing its inventory of small sites (typically less than five acres) for home sites and small businesses. These sales are anticipated to generate $660,000 in revenue in 1996, $250,000 in 1997, $100,000 in 1998 and $40,000 in 1999.

Additional sales may be possible if larger parcels are subdivided. Development of some of the large sites is not financially feasible due to high improvement costs. However, portions of those parcels adjacent to existing roads and utilities may be developable at a much lower cost than the average prototypical costs estimated by Reilly Associates. Detailed evaluation of individual sites should identify additional small parcels which could be sold for development without interfering with long-term development of EC's holdings.

Interim Activity Revenues

In the near-term interim period prior to development, several EC parcels have potential for short-term activities to generate operating revenues. These activities include farming, selective timbering, reprocessing of culm from mine spoils piles, reprocessing of silt from mine operations, topsoil farming and possibly mining. EC has a number of current leases with farmers and culm reprocessors. Additional leases may be possible in the future if individual mine spoils piles and silt ponds are analyzed and determined to have sufficiently high levels of coal to justify their reuse in co-generation; however, to be conservative, no revenues are assumed to be received from such prospective leases. Though mining of the Baltimore Tract (Wilt-2)could be resumed in the future, this financial analysis assumes no revenues from mining. Further analysis and consideration of environmental impacts and community concerns would need to be addressed before a conclusion could be reached regarding mining. Therefore, no revenues from mining can be planned for in the short term.

Cash Requirements

In 1996, EC operating costs are budgeted at $906,000 for staff, utilities, insurance, interest and other operating costs. Included is $199,000 for surveys, appraisals, consultants and legal costs associated with land sales activities. The staff expects that these operating costs will need to continue at roughly the same level into the future. In time, the scale of land sale-related costs may decline once EC has sold off many of its smaller parcels and completed surveys on major properties offered for sale.

Table 6-5
Projected Revenues and Costs, 1996 - 2012

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Revenues - excluding parcel sales																	
Farming	$11,700	$12,200	$12,800	$12,800	$13,300	$13,800	$14,400	$15,000	$15,600	$16,200	$16,800	$17,500	$18,200	$18,900	$19,700	$20,500	$21,300
Culm Reprocessing 1/	$212,000	$180,000	$180,000	$89,000	$89,000	$89,000	$89,000	$89,000	$54,000	$54,000	$54,000	$40,000	$40,000	$40,000	$40,000	$0	$0
Timber	$125,000	$83,200	$64,900	$31,200	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Silt Reprocessing 2/	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Topsoil Farming	$0	$0	$30,000	$30,000	$30,000	$30,000	$30,000	$30,000	$30,000	$30,000	$30,000	$30,000	$30,000	$0	$0	$0	$0
Mining	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Interim, Non-Sale Revenues Subtotal	$348,700	$275,400	$287,700	$163,000	$132,300	$132,800	$133,400	$134,000	$99,600	$100,200	$100,800	$87,500	$88,200	$58,900	$59,700	$20,500	$21,300
Revenues from Parcel Sales																	
Residential Properties	$690,000	$473,000	$296,000	$139,000	$16,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Industrial Properties	$0	$0	$0	$0	$0	$0	$0	$0	$0	$57,000	$59,000	$62,000	$224,000	$234,000	$242,000	$306,000	$75,000
Institutional Properties	$0	$0	$0	$1,069,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Commercial Properties	$0	$25,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$1,633,000	$0
Sale of Key Industrial Properties 3/	$0	$2,049,000	$770,000	$770,000	$770,000	$770,000	$770,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Parcel Sales Revenues Subtotal	$690,000	$2,547,000	$1,066,000	$1,978,000	$786,000	$770,000	$770,000	$0	$0	$57,000	$59,000	$62,000	$224,000	$234,000	$242,000	$1,939,000	$75,000
Total Revenues	$1,038,700	$2,822,400	$1,353,700	$2,141,000	$918,300	$902,800	$903,400	$134,000	$99,600	$157,200	$159,800	$149,500	$312,200	$292,900	$301,700	$1,959,500	$96,300
Expenditures																	
Earth Conservancy Operating Costs	$942,000	$980,000	$1,019,000	$1,060,000	$1,102,000	$1,146,000	$1,192,000	$1,240,000	$1,290,000	$1,342,000	$1,396,000	$1,452,000	$1,510,000	$1,570,000	$1,633,000	$1,698,000	$1,766,000
Loan Repayments	$0	$1,370,000	$117,000	$113,000	$108,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total Operating Expenditures	$942,000	$2,350,000	$1,136,000	$1,173,000	$1,210,000	$1,146,000	$1,192,000	$1,240,000	$1,290,000	$1,342,000	$1,396,000	$1,452,000	$1,510,000	$1,570,000	$1,633,000	$1,698,000	$1,766,000
Cash Flow Available for Reclamation and Development Activities	$96,700	$472,400	$217,700	$968,000	($291,700)	($243,200)	($288,600)	($1,106,000)	($1,190,400)	($1,184,800)	($1,236,200)	($1,302,500)	($1,197,800)	($1,277,100)	($1,331,300)	$261,500	($1,669,700)
Potential Liability																	
Real Estate Taxes 4/	$975,000	$519,000	$449,000	$454,000	$462,000	$468,000	$487,000	$484,000	$503,000	$513,000	$529,000	$546,000	$563,000	$575,000	$590,000	$602,000	$586,000

Notes:

1/ Carrier lease for $32,000 per year may be replaced in later years.
2/ Possible silt processing lease at Loomis, yielding a total of $900,000 from 1997 through 2003
3/ Assumed payment terms: 40% in 1997, balance amortized over 5 years at 8.0% interest
4/ Possible exposure

Source: Hammer, Siler, George Associates, 1996 (Appendix A.8).

Where private development is financially feasible, the industrial and residential developers are expected to bear the site improvement costs. On almost no sites could private investors afford the cost of reclaiming the land. Reclamation of most of the EC's land will need outside funding support from state and federal government. In fact, substantial grants would be needed to offset the reclamation costs identified in this study. Other creative approaches should be considered to reclaim EC properties. As discussed in Section 6.2.1 above, one viable approach is the use of fly-ash from electrical generation plants as a fill material.

EC has approximately $1.7 million in indebtedness remaining from its initial land purchase. Of this amount, $1.37 million is scheduled for repayment in 1997.

EC, a 501(c)(3) corporation, has requested tax-exempt status from the County Board of Assessments for annual property taxes of roughly $500,000. A decision is pending. This annual assessment is projected to decline slowly with property sales while growing with inflation.

Revenue and Cost Projections

As shown in Table 6-5, property sales and income from existing leases and timbering should be just enough to cover EC operating expenses in 1996. Continued solvency depends upon the GWBCBI purchasing EC's industrial land holdings in Hanover Township (parcels Hano-7a, 7b, 9 and 10) in 1997. The resulting infusion of revenue would allow EC to achieve a positive cash flow through 1999. Without this revenue, EC would run a deficit of $1.6 million in 1997 and $0.6 million in 1998, making it impossible to repay its loans and maintain its operations. EC has no resources to pay a real estate tax liability in addition to these financial obligations.

6.3.2 Grant Funding

This preliminary analysis of EC land development potentials suggests that most of the non-industrial properties will not find buyers if the prototypical development costs accurately reflect the specific conditions found on individual parcels. Only about $5 million of the total $190 million cost of reclaiming all of the EC lands can be generated through property sales where the ultimate sales price of the property would justify private reclamation of the site. No funding can be generated from development for the extinguishing of mine fires. In a location with stronger demand for industrial and residential development sites and higher land prices, private investors could be attracted to undertake selective reclamation on well-located sites. However, market conditions in the Greater Wilkes-Barre area cannot support that level of private investment and risk.

This substantial gap between the total cost of reclaiming the EC lands and EC's ability to generate income clearly indicates the need for public

subsidy if these mining scars are to be erased from the Luzerne County landscape. In these times of fiscal austerity, the potential sources of grant funding are relatively limited. The following are some potential sources of public funding for EC's projects.

Transportation Improvements. The Pennsylvania Department of Transportation's annual capital improvements budget can be reasonably expected to fund at least the first phase of major access road improvements required to serve the EC properties in Hanover Township and Nanticoke while remedying a recognized traffic problem on Middle Road at State Route 0029.

Reclamation. The Pennsylvania Department of Environmental Protection, Bureau of Abandoned Mine Reclamation (BAMR) funds reclamation on priority lands with landowner consent. Limited reclamation through this program is already underway on EC parcels in Newport Township. The Rural Abandoned Mine Program (RAMP) is administered by the Pennsylvania Soil Conservation Service, but it has not been funded in recent years.

Land reclamation is eligible for funding through the Appalachian Regional Commission (ARC). ARC's financial support is provided through a block grant to the Commonwealth of Pennsylvania. The State would need to give priority to reclamation activities in its annual budgeting of those resources. No land reclamation has been funded from these block grant funds during the past two decades.

The U.S. Environmental Protection Agency (EPA) has a Brownfields Redevelopment pilot program which is funding over 50 states, cities, towns, counties and tribes during 1996. Each pilot project is funded at up to $200,000 over two years to facilitate coordinated public and private efforts to clean up sites contaminated with hazardous substances and return them to productive use. This program may be expanded in future years if the pilot program proves successful.

Industrial Site Development. Pennsylvania's Industrial Communities Site Program (ICSP) provides grants to bring blighted industrial land into productive uses. ICSP is designed to create competitive industrial sites when the redevelopment costs would be prohibitively high in the absence of state participation, when redevelopment efforts may take years to complete and when no immediate private investment is available. Open to municipalities, industrial development agencies, municipal authorities and redevelopment authorities, these ICSP grants may be used to:

- acquire land and buildings;
- demolish and clear buildings;
- construct new or reconstruct existing public infrastructure;
- construct new on-site private utilities;
- clean up hazardous waste and materials; and
- excavate, grade and prepare sites.

Grants are limited to $1.5 million for any single project in any fiscal year. The project must also satisfy public benefit criteria including removing industrial blight, creating new jobs for Pennsylvania residents and increasing the local tax base. It must relate to the local comprehensive community development strategy.

Additional funding may be provided for a specific project through line-item appropriation by the State Legislature.

The U.S. Economic Development Administration (EDA) makes available funding for industrial site improvements through its Public Works program. The program funds proposed industrial park/site projects with priority given to projects with commitments from identified tenants to locate on the site and those in rural areas. A local match of 20 to 50 percent is required; substantial state and local support is expected. The program does not fund reclamation efforts. Funding is relatively limited with only $155 million expected to be appropriated in Fiscal Year 1997 for all 50 states.

Other possible sources of funding for industrial development include Luzerne County's Community Development Block Grant Program and their Business Development Loan Program. The latter could be utilized as a tool to attract new business and industry to the area and could assist a potential developer in deciding to purchase EC property.

Parks and Open Space. The Keystone Recreation Park and Conservation Fund's Community Grants allow municipalities to apply for assistance for park land development, outdoor recreational space and greenway development. Grants of up to $225,000 are available for land acquisition, subject to a 50/50 local match. Similar grants are available for park rehabilitation and development, also with a 50/50 local match. The total funding level for the 15-county region was $2.0 million for the 1996 grant cycle; roughly 25 to 35 proposals are funded each year. River Conservation Grants support local efforts to conserve and enhance river resources, including implementation of projects defined in approved river conservation plans. These programs could potentially be used by Luzerne County or local jurisdictions to purchase park land from EC.

The Land Trust Grants program, open to nonprofit land trusts and conservancies, funds one-half of the cost of acquiring and planning open space and natural areas which face imminent loss. Lands must be open to public use, and priority is given to habitat for threatened species. Rails-to-Trail Grants are available to municipalities and nonprofit groups for planning, acquisition or development of rail-trail corridors to preserve these abandoned corridors for use as trails or for future rail service.

Luzerne County's Community Development Block Grant Program also could be a source of funding for parks and open space development.

6.3.3 Tax & Employment Benefits from Development of EC Lands

The Hanover Township industrial property north of Middle Road and east of Route 29 (parcel Hano-7a) provides a good example of the benefits of redeveloping former coal company lands. This parcel has 186 acres of developable land. If fully developed as planned, the site would have 1,560,000 square feet of new light industrial buildings, 40,000 square feet of retail space and a 150-room hotel with a total market value of $71.9 million and an equalized assessed value of $5.4 million. Based on the current property tax rates, this development, once complete, would generate annual property taxes of $326,000 for Luzerne County, $189,000 for Hanover Township and $1,116,000 for the Hanover Area School District. This development also would support a total of 2,600 industrial jobs, 100 retail jobs and 60 hotel jobs.

Occupational privilege taxes would generate an additional $13,800 in annual revenues. These employees also would pay local earned income taxes where they live, amounting to an estimated $557,000 annually. Their annual state income taxes would total $1.94 million.

Table 6-6 presents a summary of the potential tax and job generation potentials for EC industrial and commercial developments by local jurisdiction.

Table 6-6
Potential Tax and Employment Benefits

Jurisdiction/ Parcel	Developable Acres	Maximum Supportable Square Feet 1/	Jobs 2/	Annual Annual Property Taxes 3/	Annual Earned Income Taxes 4/	Annual Occupational Privilege Taxes 5/	State Income Taxes 6/
Plymouth Township							
Plyt-19	7	50,000	130	$52,000	$7,500	$400	$41,900
Hanover Township							
Hano-7a	186	1,675,000	2,760	$1,631,000	$694,400	$13,800	$1,944,300
Hano-7b	180	1,795,000	2,250	1,564,000	550,600	11,300	1,541,600
Hano-9	303	1,876,000	2,830	1,682,000	707,000	14,200	1,979,600
Hano-10	136	1,435,000	720	1,139,000	150,700	3,600	421,900
Hano-13a	98	392,000	420	333,000	105,500	2,100	295,400
Hano-13b	320	1,280,000	1,390	1,089,000	344,500	7,000	964,700
Hano-27	37	148,000	370	152,800	42,600	1,900	119,100
Hano-28	143	572,000	620	486,000	154,000	3,100	431,100
Subtotal	1,403	9,173,000	11,360	$8,076,800	$2,749,300	$57,000	$7,697,700
Nanticoke City							
Nant-2	86	344,000	370	$294,000	$92,600	$3,700	$259,300
Newport Township							
Newp-1c	388	1,552,000	1,680	$1,325,000	$0	$0	$1,169,700
Newp-1d	167	668,000	720	568,000	0	0	503,400
Newp-2	39	156,000	170	133,000	0	0	117,600
Newp-3a	84	336,000	360	286,000	0	0	253,200
Newp-5a	97	388,000	420	330,000	0	0	292,400
Newp-7	15	70,000	180	72,300	0	0	56,400
Subtotal	790	3,170,000	3,530	$2,714,300	$0	$0	$2,392,700
Total	2,286	12,737,000	15,390	$11,137,100	$2,849,400	$61,100	$10,391,600

Notes:

1/ Based on development densities at comparable developments and/or site layouts reflecting build-out conditions on the developable acreage.

2/ Based on one job per 600 square feet of industrial space, one job per 2,000 square feet of distribution space, one job per 400 square feet of retail space and 0.4 job per hotel room.

3/ Total for County, Township or City and School District. Based on 1994-1995 property tax rate

4/ Based on average salaries of $26,000 for industrial employees, $21,000 for distribution employees, $11,500 for retail employees and hotel employees, and earned income tax rates of 0-1%. Taxes are owed to the jurisdiction of the employees' residences; not all will be paid to the jurisdiction where the business is located.

5/ Based on a tax of $0-$10 per job.

6/ Based on the 2.8-percent state income tax rate.

Source: Hammer, Siler, George Associates, 1996 (Appendix A.8).

6.4 Municipal Action Items

6.4.1 Zoning

Several changes in existing zoning designations would be required to implement the preferred development concept. A parcel-by-parcel review of the existing zoning for each EC property over five acres was conducted for the Land Use Plan. Since EC parcels are located within several different jurisdictions, approximately ten different zoning codes were reviewed. Luzerne County governs the zoning in several municipalities, including Conyngham and Newport Townships and Warrior Run and Sugar Notch Boroughs. The remaining jurisdictions containing EC parcels over 5 acres have separate zoning ordinances. Sugar Notch is in the process of developing their own zoning code.

The zoning changes that would be required to implement the proposed plan are presented in Table 6-7 and depicted in Figure 6-3. Some EC parcels lie within more than one municipality and, therefore, are subject to different zones. All zones that apply to the properties are identified in Table 6-7. Where a zone does not result from the municipality identified in the parcel name (i.e. Hano-1 is Hanover Township), the second municipality with jurisdiction over the parcel is identified in parentheses. The proposed zones are specific to the municipalities within which the proposed non-conforming use lies.

6.4.2 Comprehensive Plans

Local zoning codes and subdivision ordinances provide the principal guidance for future land use development in the study area. No comprehensive land use plans have been developed to further direct land planning. However, Luzerne County has prepared a long-range development strategy, *Luzerne 2020* (February 1990), that provides general guidance for future development throughout the region, and Hanover Township has prepared two relevant planning documents. This section briefly reviews these reports.

Several detailed analyses of local development issues and trends were performed for *Luzerne 2020,* including studies addressing: demographic and economic trends, human resources, physical infrastructure, business parks, and housing availability. Most importantly, however, the plan includes a detailed analysis of the potential economic growth industries for the County and develops an organizational strategic action plan to achieve economic development objectives. Specific economic development strategic plans are provided for the major subareas of the County.

Table 6-7
Proposed Zoning Changes

Parcel #	Proposed			Existing Zoning		Proposed Rezoning		
	Land Use	Density	Phase			From:	To:	
Plai-1	Residential	Medium	1	R-1A/C-D	Single-Family Residential/Conservation District	C-D	R-1A	Single-Family Residential
Plai-2	Residential	Medium	1	"	"	C-D	R-1A	Single-Family Residential
Plai-4	Residential	Low	1	C-D	Conservation District	C-D	R-1A	Single-Family Residential
Plai-5	Residential	Low	1	"	"	C-D	R-1A	Single-Family Residential
Plai-6	Residential	Low	1	"	"	C-D	R-1A	Single-Family Residential
Wilt-1	Residential	Medium	1	C-1	Conservation District	C-1	R-2 or 3	One & Two-Family Res. or Multi-family Res.
Wilt-2	Open Space/Park	-		"	"	---	---	---
Wilt-4	Open Space/Park	-		R-2	"	---	---	---
Laur-1	Residential	Low	3	C-1	Conservation District	C-1	R-1	Single-Family Residential
Laur-2	Open Space/Park	-		"	"	---	---	---
Laur-4	Open Space/Park	-		R-1	Residential, Single-Family	---	---	---
Laur-5	Open Space/Park	-		C-1	Conservation	---	---	---
Laur-6	Open Space/Park	-		"	"	---	---	---
Laur-7	Open Space/Park	-		"	"	---	---	---
Prin-1	Residential	Medium	1	R-1	Single-Family Residential	---	---	---
Plyb-5	Farmland	-	3	C-1	Conservation	---	---	---
Plyt-1	Farmland	-	1	R-2	Two-Family Residential	---	---	---
Plyt-2	Farmland	-	1	"	"	---	---	---
Plyt-3	Farmland	-	1	"	"	---	---	---
Plyt-4	Farmland	-	1	"	"	---	---	---
Plyt-5	Farmland	-	1	"	"	---	---	---
Plyt-7	Farmland	-	1	"	"	---	---	---
Plyt-9	Farmland	-	1	R1/R2	One-Family Residential/Two-Family Residential	---	---	---
Plyt-10	Farmland	-	1	"	"	---	---	---
Plyt-11	State Forest	-	-	S-1R	Special Residential	---	---	---
Plyt-12	Open Space/Park	-	-	R-2	Two-Family Residential	---	---	---
Plyt-16	Open Space/Park	-	-	"	"	---	---	---
Plyt-17	State Forest	-	-	S-1R/R-2/R-1	Special Residential Dist./One/Two-Family Res.	---	---	---
Plyt-18	Residential	Very Low	1	R1/R2	One-Family Residential/Two-Family Residential	---	---	---
Plyt-19	Commercial	Small-scale	1	R-2	Two-Family Residential	---	---	---
Plyt-20	Residential	Medium	1	R-1/S-1R/M-1	One-Family/Special Res./Light Manufacturing	M-1	R-1A or B	Single-Family Residential
Hano-1	Residential	Medium	1	R-2	Two-Family Residential	---	---	---
Hano-2	Residential	Medium	1	R-1A	One-Family Residential	---	---	---
Hano-4	Residential	Medium	1	R-2	Two-Family Residential	---	---	---

Table 6-7
Proposed Zoning Changes

Parcel #	Proposed			Existing Zoning		Proposed Rezoning		
	Land Use	Density	Phase			From:	To:	
Hano-5	Open Space/Park	-	-	FP/M-1	Floodplain/Manufacturing	---	---	---
Hano-6	Residential	Medium	1	R-1A	One-Family Residential	---	---	---
Hano-7a	Industrial	Light	1	"	"	R-1A	M-1	Manufacturing
Hano-7b	"	"	2	"	"	R-1A	M-1	Manufacturing
Hano-8	Residential	Medium	1	R-2	Two-Family Residential	---	---	---
Hano-9	Industrial	Light	1	R-2/S-1R	Two-Family/Special Use Residential (Hanover)	R-2/S-1R	M-1	Manufacturing
				R-2	Two-Family Residential (Nanticoke)	R-2	I-1	Industrial
Hano-10	Industrial	Med/Heavy	1	R-1A/R-2	One-Family Residential/Two-Family Residential	R-1A/R-2	M-1	Manufacturing
Hano-12	Residential	High	1	R-1A	One-Family Residential	R-1A	R-2	Two-Family Residential
Hano-13a	Industrial	Med/Heavy	3	M-1	Mining (Luzerne County)	M-1	M-2 or 3	Light or Heavy Manufacturing (Luzerne Cnty.)
				S-1	Special Uses	S-1	M-1 or 2	Manufacturing or Heavy Manufacturing
Hano-13b	Industrial	Med/Heavy	2	S-1/S-1R	Special Uses/Special Use Residential	S-1	M-1 or 2	Manufacturing or Heavy Manufacturing
Hano-13c	Residential	Low	2	C-1/M-1	Conservation/Mining (Luzerne County)	C-1/M-1	R-1	Single-Family Residence (Luzerne County)
Hano-13d	Residential	Low	2	C-1/M-1	Conservation/Mining (Luzerne County)	C-1/M-1	R-1	Single-Family Residence (Luzerne County)
				S-1/S-1R	Special Uses/Special Use Residential	S-1/S-1R	R-1A	One-Family Residential
Hano-13e	Residential	Low	3	M-1	Manufacturing	M-1	R-1 or 2	Single or Two-Family Resid. (Luzerne Cnty.)
Hano-13f	Open Space/Park	-	-	S-1R	Special Use Residential	---	---	---
Hano-13g	Open Space/Park	-	-	"/C-1	"/Neighborhood Commercial	---	---	---
Hano-14	Residential	Low	3	M-1/R-1B	Manufacturing/One-Family Residential	M-1	R-1	Single-Family Residence (Luzerne County)
Hano-15	Open Space/Park	-	-	S-1R	Special Use Residential	---	---	---
Hano-16	Open Space/Park	-	-	S-1	Special Uses	---	---	---
Hano-17	State Gameland	-	-	"	"	---	---	---
Hano-18	Open Space/Park	-	-	"	"	---	---	---
Hano-19	Open Space/Park	-	-	S-1R	Special Use Residential	---	---	---
Hano-20	Open Space/Park	-	-	"	"	---	---	---
Hano-21	Residential	Low	3	"	"	---	---	---
Hano-22	Residential	Low	3	"	"	---	---	---
Hano-24	Open Space/Park	-	-	"	"	---	---	---
Hano-25	Residential	Low	3	"	"	---	---	---
Hano-26	Residential	Low	3	"	"	---	---	---
Hano-27	Commercial	Large-scale	3	C-2/S-1/R-1B	Highway Commercial/Special Uses/One-Fam. Res.	S-1/R-1B	C-2	Highway Commercial
Hano-28	Industrial	Light	3	M-1/C-2	Manufacturing/Highway Commercial	C-2	M-1	Manufacturing
Hano-29	Residential	Medium	1	R-2	Two-Family Residential	---	---	---
				M-1 (poss.)	Manufacturing (possibly w/i Hanover M-1 zone)	---	---	---
Nant-1	Institutional	-	1	R-2	Two-Family Residential	R-2	S-1	Special Purpose
Nant-2	Industrial	Light	2	R-2/S-1	Two-Family Residential/Special Purpose	R-2/S-1	I-1	Industrial
Nant-3	Open Space/Park	-	-	S-1/FP	Special Purpose/Floodplain Conservation	---	---	---

Table 6-7
Proposed Zoning Changes

Parcel #	Proposed Land Use	Density	Phase	Existing Zoning		Proposed Rezoning From:	To:	
Sugn-1a	Residential	Low	3	M-1	Mining	M-1	R-2	Two-Family Residence
Sugn-1b	Residential	Low	3	"	"	M-1	R-1	Single-Family Residence
Sugn-1c	Residential	Low	3	"	"	M-1	R-1	Single-Family Residence
Sugn-1d	Open Space/Park	-	-	S-1	Special Uses	---	---	---
Nuan-1	Residential	Low	1	R-1	Single-Family Residential	---	---	---
Nuan-2	Residential	Low	1	R-1/C-1	Single-Family Residential/Conservation	R-1/C-1	R-1	Single-Family Residential
Newp-1a	Open Space/Park	-	-	C-1	Conservation	---	---	---
Newp-1b	Residential	Low	3	M-1	Mining	M-1	R-1	Single-Family Residence
Newp-1c	Industrial	Med/Heavy	2	"	"	M-1	M-2 or 3	Light or Heavy Manufacturing
Newp-1d	Industrial	Med/Heavy	2	"	"	M-1	M-2 or 3	Light or Heavy Manufacturing
Newp-2	Industrial	Med/Heavy	2	"	"	M-1	M-2 or 3	Light or Heavy Manufacturing
Newp-3a	Industrial	Med/Heavy	2	"	"	M-1	M-2 or 3	Light or Heavy Manufacturing
Newp-3b	Residential	Medium	2	"	"	M-1	R-2 or 3	Two-Family or Apartment Residence
Newp-4	Residential	High	2	M-1/R-2	Mining/Two-Family Residence	M-1	R-3	Apartment Residence
Newp-5a	Industrial	Med/Heavy	2	M-1	Mining	M-1	M-2 or 3	Light or Heavy Manufacturing
Newp-5b	Residential	Medium	2	M-1/R-2	Mining/Two-Family Residence	M-1	R-2 or 3	Two-Family or Apartment Residence
Newp-6	Residential	Medium	2	R-2	Two-Family Residence	---	---	---
Newp-7	Commercial	Smale-scale	2	"	"	R-2	B-1 or 2	Neighborhood or Community Business
Newp-16	Open Space/Park	-	2	"	"	---	---	---
Newp-17a	Residential	Medium	3	M-1	Mining	M-1	R-2	Two-Family Residence
Newp-17b	Residential	Low	3	"/C-1	Mining/Conservation	M-1	R-1	Single-Family Residence
Newp-17c	Industrial/Cml.	Light	2	M-1	Mining	M-1	M-2 or 3	Light or Heavy Manufacturing
Newp-19	Open Space/Park	-	-	C-1	Conservation	---	---	---
Cony-1a	Residential/Resort	Low	3	M-1/C-1	Mining/Conservation	M-1/C-1	R-1 or 2	Single- or Two-Family Residence
Cony-1b	Open Space/Park	-	-	"	"	---	---	---
Cony-2	Open Space/Park	-	-	C-1	Conservation	---	---	---

Legend/Assumptions:

Phase:
1 Short-term (1996-2001)
2 Mid-term (2001-2011)
3 Long-term (2011-2021)

Residential Density:	Range (net):	Average (gross):
Very Low-density Resid.	5-acre lots	5.0 acres/lot
Low-density Resid.	2-acre lots	2.2 acres/lot
Medium Density Resid.	1/2-acre lots	0.5 acres/lot
Medium Density Resid.	1/4-1/3-acre lots	0.4 acres/lot
High Density Resid.	4 to 15 units/acre	5.0 units/acre

Industrial Density:	Range:	Average:
Light Industrial	5 to 15-acre lots	10 acres/lot
Medium/Heavy Industrial	10 to 75-acre lots	25 acres/lot

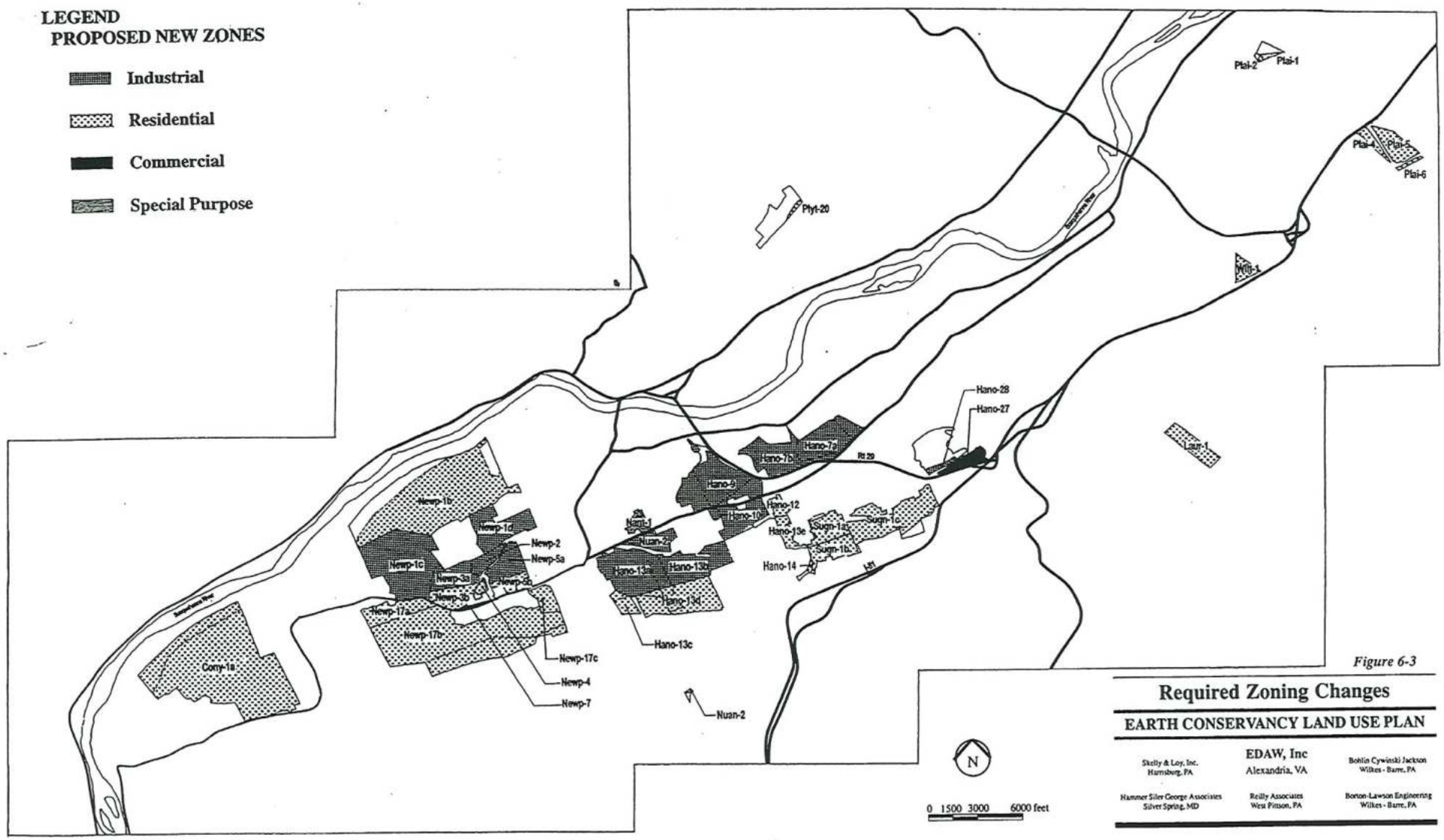


Figure 6-3

Required Zoning Changes

EARTH CONSERVANCY LAND USE PLAN

Skelly & Loy, Inc.
Harrisburg, PA

EDAW, Inc
Alexandria, VA

Boblin Cywinski Jackson
Wilkes - Barre, PA

Hammer Siler George Associates
Silver Spring, MD

Reilly Associates
West Pittson, PA

Borton-Lawson Engineering
Wilkes - Barre, PA

Goal #1 of the economic development strategic plan for the Greater Wilkes-Barre area in *Luzerne 2020* is as follows:

> Improve the economic development infrastructure, including industrial park space, waste disposal facilities, housing options, and other elements necessary to support the long term economic growth and development in the Greater Wilkes-Barre area.

To achieve this goal, the plan recommends that land parcels suitable for business and industrial parks should be acquired by the Greater Wilkes-Barre Chamber of Business & Industry. At the time *Luzerne 2020* was prepared, the Blue Coal properties were still in bankruptcy proceedings. Therefore, the plan recommends that these lands be acquired by the Chamber and put in a community land bank for future industrial development.

Implementation of this proposed Land Use Plan would accomplish the primary objectives for the former Blue Coal property identified in the *Luzerne 2020* plan by devoting large tracts for future industrial development. No revisions to *Luzerne 2020* would be required as a result of adoption of the Land Use Plan.

Hanover Township has prepared two planning documents that were reviewed during the development of the Land Use Plan. The existing conditions of the Township relating to community development, public facilities, population, housing, and economics were documented in a report entitled *Master Plan Update, Existing Conditions Data 1990.* In addition, the Township prepared a five-year plan, *Strategic Plan: 1991-1995*, which identified detailed goals for the municipality, including goals related to the former Blue Coal Company lands. Specifically, the plan states that under a best case scenario:

> The courts release the Blue Coal lands, and these lands are sold privately to a single developer who shares the values and the development goals of the Township. The developer and the Township enter into a joint cooperative effort to prepare a long-range development plan for the Blue Coal lands; and, the Township assists the developer to secure State grants for the purpose of providing the infrastructure needed to support the development of these lands. The Township also undertakes a pro-active role with regard to the marketing of the Blue Coal lands as well as other Township land that are suitable for commercial and industrial development.

Since 1991 when the plan was prepared, EC purchased the Blue Coal lands, thereby providing an opportunity for Hanover Township and EC as the owner/developer to work together to achieve mutual development goals.

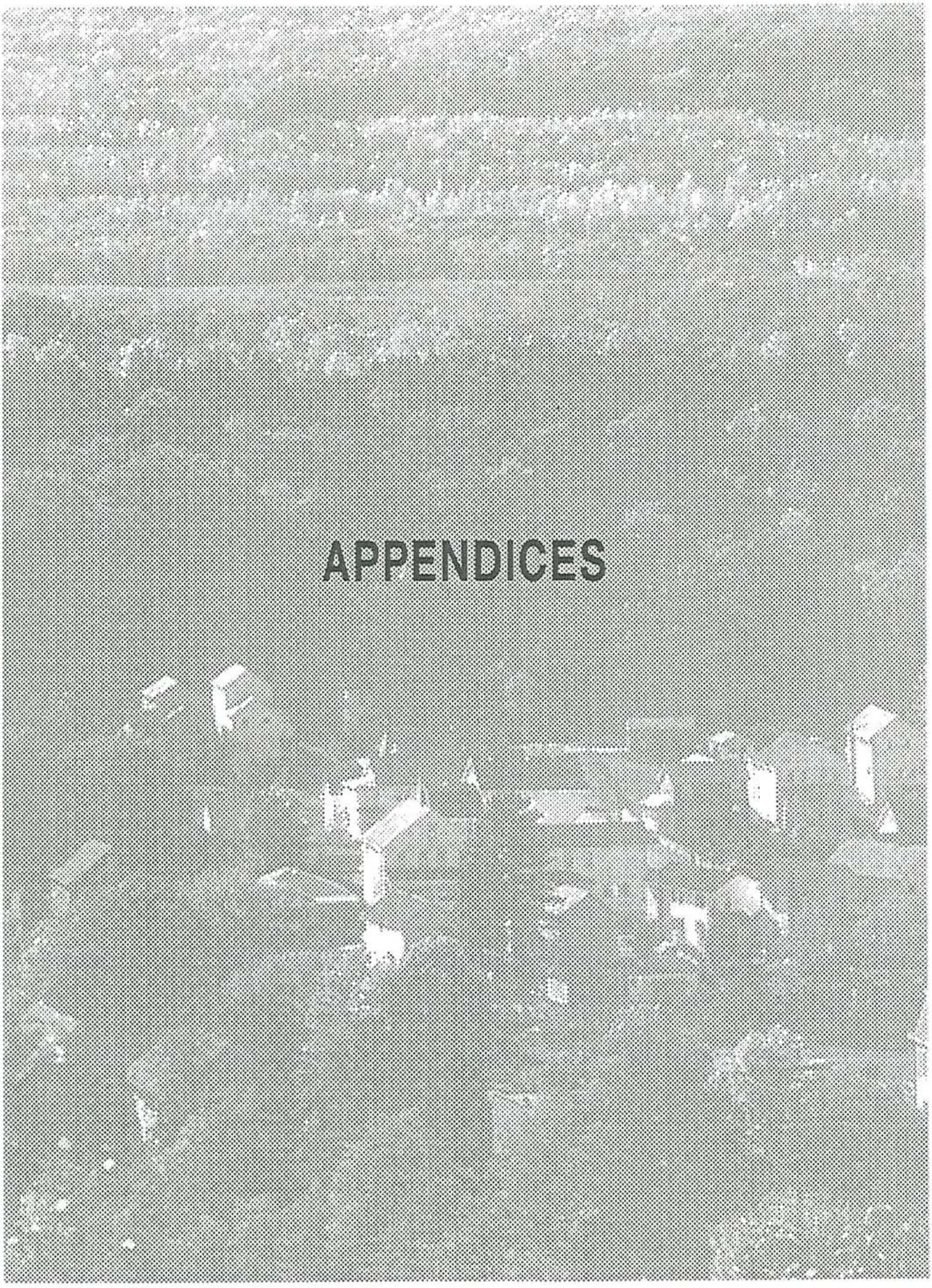
6.5 Plan Review Process

The Land Use Plan has been prepared to guide future land development decisions by Earth Conservancy's Board of Directors. Completion of this planning effort marks a new phase in the actions and direction of EC. EC's goal is to follow the Plan's guidance and realize the vision of the Land Use Plan. EC's major task will be to overcome the significant physical and financial challenges that could create obstacles to success.

Reviewing the progress of EC in implementing the Plan should be the responsibility of a committee of the EC Board. The plan review process should include periodic review of reclamation, development, land use, and phasing decisions for consistency with the Plan and, where applicable, establish revised development goals for specific EC parcels consistent with the overall goals and vision for the region.

The Board will be faced with the reality that the Plan must be dynamic in order to best serve the long-term interests of EC and the region. As times change, so may the types of land uses that best address local needs and trends. Phasing of the Plan may also need to be adjusted to respond to changing situations. The Land Use Plan will provide the Board with the guidance necessary to make these critical future decisions.

APPENDICES



APPENDICES

Eight appendices accompany this report as follows:

A.1 EDAW 1996 Summer Student Program Poster
A.2 LUPC Workshop Summaries, EDAW, Inc.
A.3 Economic Input Report, Hammer, Siler, George Associates
A.4 Environmental Features Report, Skelly & Loy, Inc.
A.5 Mining Report, Skelly & Loy, Inc.
A.6 Utility Systems Report, Reilly Associates
A.7 Transportation System Report, Borton-Lawson Engineering
A.8 Financing/Funding Strategy, Hammer, Siler, George Associates

These appendices provide important and detailed background data supplementing the information presented in this document. They have been prepared over the course of the twelve-month planning process and are considered an integral part of the Earth Conservancy Land Use Plan.

The appendices are provided in a separate bound document and available for review at Earth Conservancy's offices at 101 South Main Street, Ashley, Pennsylvania. Arrangements for review can be made by calling (717) 823-3445.