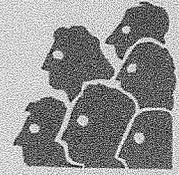


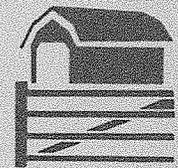
**Official
Comprehensive Plan**



**East Hempfield
Township**



Lancaster County, PA



January 1994



Gehringer-Roth Associates

Community Planners • Lancaster, PA • (717) 560-2022

The information included in this Comprehensive Plan has been developed over a period of approximately three (3) years. Due to the length of the adoption process, some of the information contained in the Comprehensive Plan may be dated. However, the bulk of the information is believed to be current, and the dated information does not affect the usefulness and purpose of the Comprehensive Plan.

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The Board of Supervisors would like to thank all past and present members of the Township Planning Commission and Zoning Hearing Board for their valuable input and assistance in the preparation of this document.

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I. INTRODUCTION



A. PURPOSE OF THE PLAN

Like any business, local governments need to chart future plans so that they can assure an efficient use of resources. Local governments are in the business of assuring the public welfare and delivering public services. The preparation of a comprehensive plan provides a deliberate framework of information that can be used to make future decisions regarding local government functions.

One definition of comprehensive planning is "the efficient allocation of municipal resources toward municipal goals and objectives"; this definition embodies the essence of this study.

This study first catalogs, maps, and describes the Township's resources. These resources include many things, such as land, streams, roads, utilities, parks, neighborhoods, schools, staff, police, ambulance, and fire equipment, businesses, people, and so on. Analyses are performed to determine the capabilities of these resources to need, serve, or accommodate particular land uses.

Next, a set of community goals and objectives are formulated. These goals can include general health and safety-type objectives, like the provision of adequate housing and employment opportunities, or the protection of the environment. Community-wide goals are also important and could look to control growth or improve recreation facilities. Specific neighborhood goals can improve a local imbalance of public services, or preserve the historical architecture of a given area. Finally, problem-solving goals seek to correct existing or foreseeable deficiencies or problems, such as improving the design of a particular road intersection or preventing the construction of a use that threatens compatibility with adjoining land uses.

Third, the community goals and objectives are applied to the municipal resources, yielding a future land use scheme/transportation network. In addition, some guidelines are offered regarding the future delivery of public services. It is important to note that the time frame for this Comprehensive Plan is to the year 2000. All recommendations made within this Plan are structured around that time frame. However, there is some analysis that

projects needs for the year 2010, but this analysis is provided only as a guideline for long-term capital improvement decisions. Local officials will need to update this Plan by the year 2000, or sooner if conditions change more rapidly.

Finally, implementation strategies are discussed and recommended that enable the Township to set in motion the analyses and information presented in the Plan. These strategies will involve those planning technologies currently available for use by local governments within the region. In the end, any planning process is meaningless unless its recommendations find application as part of the Township's business—the protection of the public welfare and the delivery of public services.

B. HOW TO USE THIS PLAN

This Comprehensive Plan has been assembled to serve several important purposes. Principally, the Plan is aimed at assisting local officials in the administration of the Township's land use planning program. Many action-oriented recommendations have been expressed throughout the Plan text; these recommendations have been printed in *bold italicized letters* so that the decision-maker's attention is immediately drawn to them. The several maps within the Plan have also been carefully prepared and colored so that the information can be easily visualized. The many analyses utilized throughout the study were devised to maximize utility of the findings. Step-by-step descriptions of these methodologies have been furnished to enable the reader to gain a better understanding of the issue, and its planning implications. Finally, a detailed table of contents appears at the beginning of the text which provides quick reference to the appropriate sections of the study. All of these features will aid local decision-makers in their evaluation of future planning proposals.

A second important function of this Plan is its collection of important information. The term "Comprehensive Plan" accurately describes the composition of this report; its contents are quite comprehensive. Accordingly, the Plan provides convenient access to a wealth of up-to-date information concerning its many interrelated factors. This information will serve not only Township officials, but service agencies, property owners, residents, business leaders, and prospective developers. The cataloging of existing conditions will also provide the groundwork upon which future Plan updates can be more easily accomplished.

Finally, the Plan conveys a set of policies regarding future development within the Township. These policies are based upon the Township's community development objectives and can be useful to many landowners. For example, residents can get a glimpse of land use that is projected around their homes. Farmers north of PA Route 283 can continue to farm with relative assurance that their agricultural setting will not be disrupted. Prospective developers can use the Plan to package development proposals that conform to the

Township's goals, thereby ensuring a smooth development review process. Business leaders can glean a sense of secure investment climate from the Township's organized government administration and future land use scheme. In all, the Plan considers many competing special interests and devises a strategy to assure their relative harmonious coexistence.

In summary, it is important for all of those persons involved and/or interested in the future of East Hempfield Township to read and understand this entire Plan, at least once. Then, local decision-makers should keep it handy when evaluating future development proposals, service adjustments, or public investments. The Plan's format will avail considerable information, analysis and expertise without requiring its complete rereading. In the end, it is hoped that the Plan will become a powerful yet practical tool in local decision-making.

C. HISTORIC SKETCH

When Lancaster County was formed as one of Pennsylvania's original counties in 1729, it contained 17 townships. Hempfield Township was one of the original townships. The original Hempfield Township consisted of what is now known today as Columbia, Mountville and East Petersburg Boroughs, and Manor, East and West Hempfield Townships. Manor Township was formed from the southern portion of Hempfield Township in 1740. In 1814, the Township was further divided to form the Boroughs of Columbia and Mountville. Then, in 1818, the western portion of the Township was divided to form West Hempfield Township. Finally, East Petersburg Borough was incorporated in 1947. The remaining 21 square miles became East Hempfield Township as it is today.

Hempfield Township was named after the profitable hemp and flax crops that grew in western Lancaster County during the 1700's and early 1800's. East Hempfield Township's rich land also had an effect on its history. Its limestone soils and the abundance of water have made it a productive agricultural area. It was also rich in mineral deposits, such as lead, zinc and silica sand.

The village of Bamford sprang up during the early to mid-1800's, east of Landisville, as a result of the lead and zinc deposits that were mined there. Bamford was just the first of many towns that were developed in East Hempfield Township. Other major towns include Landisville, Rohrerstown, Salunga, and East Petersburg (which became a borough in 1947).

Today, these villages still play a role in providing social, cultural and governmental functions, but have lost much of their earlier prominence. Replacing the development of these towns has been the residential suburbanization and commercial/industrial development of the Township since 1960. The Township's population was recorded at 9,680 in 1964. By 1977, the Township had grown to 13,504 persons, and by 1983 the population was 15,152. East Hempfield Township bears a large percentage of the growth that

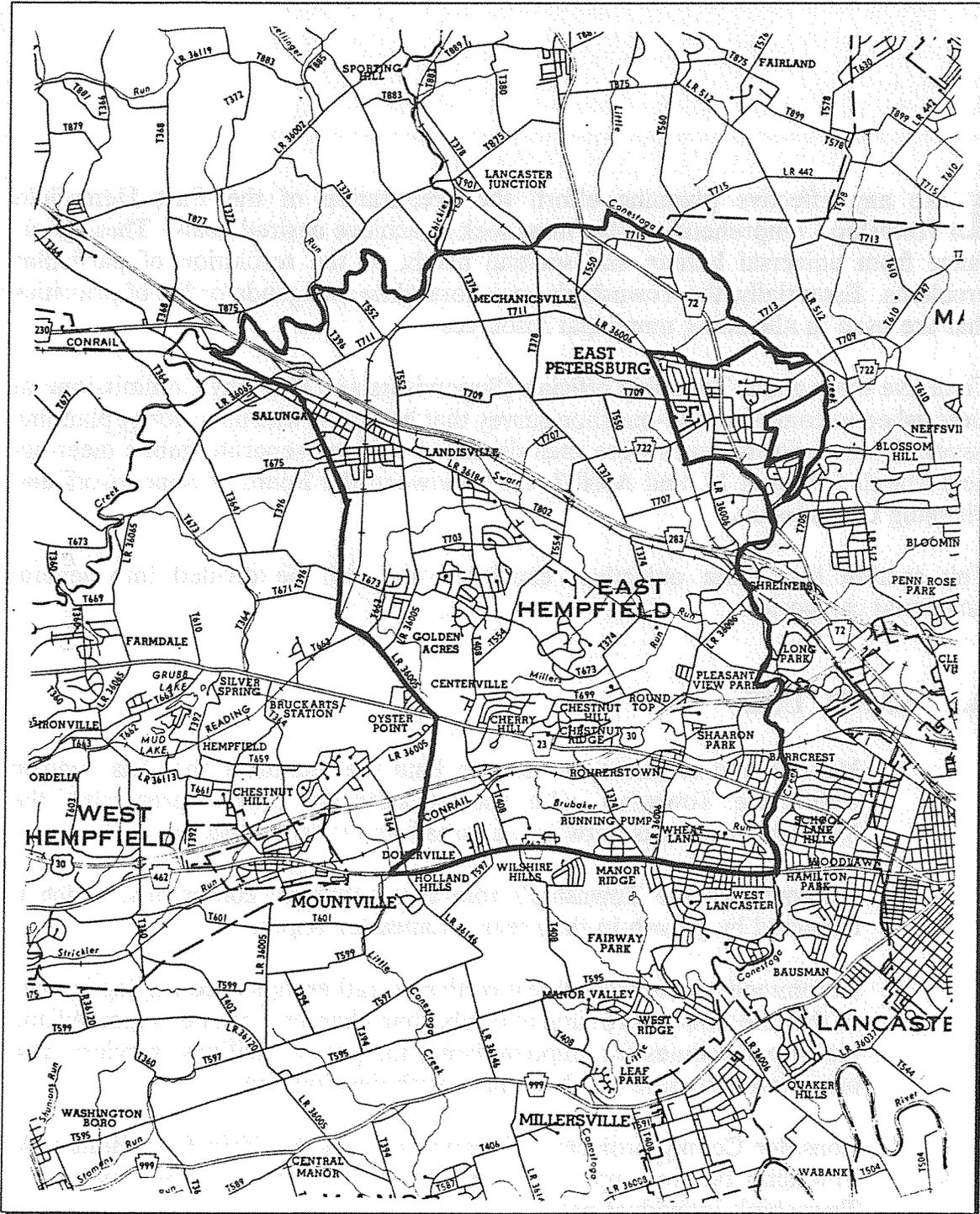
has radiated outward from Lancaster City. This trend has continued and in 1990, the Township's population was reported to be 18,597.

D. REGIONAL CONTEXT

East Hempfield Township is situated in the west-central portion of Lancaster County in southcentral Pennsylvania. (See following page for Regional Location Map.) The Township lies directly northwest of the City of Lancaster, which serves as the County seat of government. East Hempfield contains a total area of 21.3 square miles. The Township is roughly 6.1 miles long and 5.1 miles wide at its extreme points. The Township's boundaries consist of a combination of natural and man-made lines. The Chickies Creek forms the Township's northwestern border with Rapho Township. The Township is contiguous with Penn Township to the north. The Little Conestoga Creek forms the Township's eastern border with Manheim and Lancaster Townships. The Township is contiguous to Manor Township to the south, and West Hempfield Township to the west. East Petersburg Borough is situated within the northeast corner of the Township. East Petersburg has played and continues to play a symbiotic role with East Hempfield Township, primarily serving as a center for goods and services to the residents living in the agricultural/rural area of the Township, north of PA Route 283.

East Hempfield Township is linked with the Lancaster region geographically and economically. One Federal (U. S. Route 30) and six State roads (PA Routes 283, 23, 462, 741, 72, and 4020) connect the Township with Lancaster City and other parts of the County. As part of the Lancaster region, East Hempfield Township residents enjoy excellent access to many of the large metropolitan areas of the eastern United States. Routes 283, 222, I-76, 30, and 322 provide convenient access that links Lancaster County with Philadelphia, Baltimore, New York, Wilmington, Pittsburgh, and Washington, D.C. In addition, many important regional roadways directly connect Lancaster County with nearby cities. York, Harrisburg, Reading, and Lebanon are less than an hour's driving time from Lancaster City and East Hempfield Township.

REGIONAL LOCATION MAP



II. COMMUNITY PLANNING GOALS



Like any effective planning effort, the preparation of the East Hempfield Township Comprehensive Plan must seek to achieve desired goals. These goals range from universal human and societal needs, to the resolution of particular problems. Essentially, the Township's goals formulate an agenda or list of priorities that are used in allocating municipal resources.

To derive these goals, Township officials (Supervisors and Planning Commissioners) were asked to complete a 35-question survey that helped to identify priority planning issues. These priority issues were then discussed at three separate public meetings held March 5, March 14, and April 2, 1991, between the Board of Supervisors and Planning Commission.

This section lists those objectives expressed and will be divided into several functional categories.

A. LAND USE

1. Manage and continue the diverse land use character that has evolved within the Township, with special attention toward preserving the "pleasant" contrasts between suburban and rural landscapes;
2. Acknowledge the Township's role as a suburban community, which is impacted by growth in the greater Lancaster region;
3. Accommodate a manageable growth rate, rather than encouraging growth, so that the Township's rural and suburban character can be preserved and realistic schedules for improvements for public facilities, services, and other infrastructure can keep pace with development;
4. Consider County projected allocation of growth within East Hempfield Township but rely upon self-determined projections, based upon the Township's individual past;
5. Continue a firm but cooperative philosophy of development review so that high quality developments are more likely to occur;

6. Coordinate future land uses with the need to reduce traffic congestion;
7. Assure that future land uses are compatible with existing, adjoining land uses;
8. Allocate future land use according to projected population figures so that developments are staged within this Plan's time frame;
9. Coordinate this Plan's land use recommendations with the findings of the Township's official sewage plan;
10. Prohibit use of on-lot utilities to accommodate growth areas, as Township will ultimately be asked to extend utilities or retrofit package system when on-lot systems fail;
11. Affirm agricultural land use as a valid and important component of the Township's future;
12. Halt the strip development pattern occurring north of PA Route 283;
13. Protect productive farmlands as a means of prolonging agricultural viability without financially overburdening local farmers;
14. Discourage the loss of farmland in areas with prime agricultural soils;
15. Concentrate growth areas, rather than allow scattered site or strip development with their increased service and transportation costs;
16. Seek greater diversity in housing types and cost; however, don't sacrifice site development quality as a means of reducing housing prices;
- 7 17. Promote affordable housing through cluster techniques and the re-use of existing buildings;
18. Promote the use of clustering to provide more usable open space within each development;
19. Encourage the use of linear paths and bikeways amid new developments in the form of attractive design incentives;
20. Explore the limited use of "livable communities" design concepts if suitable locations can be identified, and acceptable community designs can be scrutinized by local officials;
21. Encourage the preservation of the residential appearance of buildings within Rohrerstown and Landisville;
22. Protect the viability and identity of existing villages;

23. Discourage new regional commercial centers in favor of "close-to-home" convenience commercial centers;
25. Discourage strip commercial developments in favor of planned centers, which create a "sense of place," by coordinated access, parking, signage, landscaping, and loading areas;
26. Limit future commercial sites so as to not promote routine tenant turnover to "new and shinier" centers, thereby causing vacancies at existing older locations. Encourage the ongoing maintenance and upgrading of existing commercial areas;
27. Encourage the placement of sit-down restaurants, as opposed to more fast-food franchises, through limited adaptive re-use of historic buildings along major roads;
28. Strictly maintain the extent of commercial use within Rohrerstown and Landisville;
29. Create a separate commercial office designation to acknowledge the shifting economic trends, and provide a high quality campus office setting;
30. Identify and avail high quality industrial growth areas as a means of offering employment and contributing to the Township and School District's tax bases;
31. Limit industrial land uses to the current U. S. Route 30 corridor;
32. Strengthen performance, siting, and buffering requirements for commercial and industrial uses;
33. Provide recreational facilities in close proximity to residents;
34. Promote lineal bikeways and walkways as recreation and convenient pedestrian circulation;
35. Protect sensitive, unique and/or valuable environmental features throughout the Township;
36. Integrate open spaces throughout the growth areas, south of PA Route 283;
37. Discourage developments on steep slopes; however, if allowed, require qualified architectural design that complements steep terrain;
38. Seek to protect remaining concentrations of woodland;
39. Maintain public access to State-stocked Swarr Run; and,

40. Coordinate the findings and recommendations of this Plan with those advocated by the Lancaster County Planning Commission, with particular emphasis on the creation of an "urban growth boundary (UGB)."

B. TRANSPORTATION

1. Coordinate future land use and roadway functions to maximize efficient use of the Township's existing major roads;
2. Coordinate existing roadway functions with appropriate design standards;
3. Coordinate future transportation improvements with projected roadway functions and adjoining planned land uses;
4. Assure that future developments provide for access designs and locations that minimize traffic congestion and safety problems;
5. Acknowledge and plan for the "regional" traffic that passes through the Township on a regular basis;
6. Encourage developer-provided transportation improvements that are needed; and,
7. Review and, if necessary, adjust road design or use to alleviate acute traffic accident locations.

C. PUBLIC UTILITIES

1. Maximize the efficient use of the Township's public utility systems;
2. Encourage the extension of public utility lines to future development areas, as depicted in this Plan, at developers' expense;
3. Identify means to assure that adequate water quality and quantity is provided for domestic use and firefighting purposes;
4. Discourage sizable residential development in areas that are not served by public utilities;
5. Promote the use of gravity-flow sewage systems over pressurized systems;
6. Require adequate storm water management measures that prevent adverse impact to surrounding properties and watercourses; and,
7. Cooperate with the Lancaster County Solid Waste Management Authority in the disposal of Lancaster County's solid waste.

D. PARKS AND RECREATION - See Chapter II (Study Goals) of the East Hempfield Township Comprehensive Recreation and Open Space Plan.

III. NATURAL AND CULTURAL FEATURES



This section will catalog, map and describe the Township's land use resources. This information will be extremely useful in allocating future land uses within the Township. Additionally, natural resource information will be instrumental in the formulation of land development policies that protect the environment.

A. GEOLOGY/GROUNDWATER

The geology of an area plays an important role in determining the surficial shape of the environment. Throughout the ages, underlying rock is subjected to natural weathering forces that chemically and physically erode its original shape. These weathered materials then form soils which remain stationary or can be transported to another area. Then, these soils possess distinct characteristics that often dictate which land uses can be accommodated.

Geology is also a primary determinant of groundwater quality and quantity. Certain rock types and structures convey water better and yield more abundant well sources. For example, limestone areas are characterized by solution channels that readily allow the passage of water; whereas, other local metamorphic rocks have very low secondary porosity. Rock type and structure can affect the degree of filtration that takes place within the groundwater, and the chemical composition of the rock can also contribute to the chemical properties of its groundwater.

Finally, the physical properties of underlying rock determine its strength and suitability to support development. These properties determine the ease of excavation, and ability to support the foundations of various structural types.

The Soils and Geology Map on page 17 illustrates the geologic conditions within the Township. The Township is underlain by two types of rock. Clastic rocks, which are primarily composed of quartzite, schist, and phyllite, make up approximately 11% of the Township's land area. Carbonate rocks, which consist of limestone and dolomite, account for 89% of the Township.

The clastic rocks underlie the higher elevation of Chestnut Ridge, located in the west-central part of the Township. The Harpers and Chickies Formation Undivided, Antietam Formation and Harpers Formation comprise this area.

These geologic formations are primarily composed of phyllite (shale), quartzite and schist. These rocks are very resistant to the weathering and decaying action of rain, freezing and thawing. As a result, the rock remains intact, producing a rugged and sometimes steep topography.

The carbonate rocks located in East Hempfield Township consist of the Vintage, Stonehenge, Epler, Buffalo Springs, Zooks Corner, Kinzers, Ledger, and Conestoga Formations. These formations are composed primarily of limestone interbedded with dolomite. Because these geologic formations are interbedded, a slight undulating topography results due to the differences in resistance to erosive forces inherent in the various rocks. The weathering of these limestones and interbedded rocks produce the gently rolling landscape associated with the more fertile lands located in the northern half and extreme southern portion of the Township. Because limestone is characterized by its weak resistance to erosive forces, it breaks down more rapidly, thus producing new soil. This limestone-based soil is generally well-drained and highly fertile. Because limestone is highly erosive, several distinct implications for land use planning arise.

First, as groundwater passes through limestone, it creates subsurface solution channels (underground tunnels conveying groundwater). These solution channels continually become larger thereby increasing their capacity to carry additional groundwater. This condition provides a ready source of water for wells that are drilled into the solution channels. On the other hand, the formation of large solution channels and caverns can create sinkhole problems that pose obvious and significant safety hazards for land uses located on the surface.

Another characteristic of limestone geology deals with its suitability for on-lot sewage disposal methods. On-lot sewage septic fields rely upon the subsurface soil and rock particles to filter impurities from the effluent entering the groundwater. In the limestone formations, the presence of solution channels can intercept effluent and agricultural fertilizers containing nitrates before the soil has had the chance to purify them; then, the polluted groundwater can travel along the solution channel and degrade other water sources.

Future development in those areas underlain by significant amounts of limestone should be cautious of the unstable nature of limestone, aware of particular groundwater quantity and quality characteristics, protective of the agricultural richness of the resultant soils, and wary of the reliance upon on-lot sewage disposal methods. Any drilling of domestic or public water supplies within those areas of the Township underlain by limestone should be thoroughly and routinely tested for contamination.

A table has been constructed on pages 14 and 15 showing the relationship between the geology of the Township and such land use planning elements as quantity of groundwater resources, porosity and permeability, ease of excavation, and foundation stability. The four elements mentioned above are important to consider when allocating and planning land use activities. This

table is intended for a reference use only and should be utilized to determine general characteristics of the formation types.

The porosity and permeability of a geologic formation refers to how quickly and easily water, air, and other substances pass through the rock. A classification of low permeability means that the rock is essentially impermeable. A classification of moderate refers to a permeability of about 14 feet per day. A high permeability means that substances may pass through the rock at a rate somewhere between 14 feet per day and 847 feet per day.¹

The ease of excavation refers to how pliable the rock is when moving it or drilling it. The classifications range as follows:

Easy - Can be excavated by hand tools or lightweight power equipment.

Moderately Easy - Rippable by heavyweight power equipment at least to weathered-rock/fresh rock interface and locally to greater depths.

Intermediate - Rippable by heavyweight power equipment to depths chiefly limited by the maneuverability of the equipment. Hard rock layers or zones of hard rock may require drilling or blasting.

Moderately Difficult - Requires drilling and blasting for most deep excavations, but locally may be ripped to depths of several feet due to closely spaced joints, bedding, or weathered rock.

Difficult - Requires drilling and blasting in most excavations, except where extensively fractured or weathered.²

Foundation stability can be classified as either good, fair or poor. Good foundation stability means that the bearing capacity of the rock is sufficient for the heaviest classes of construction, except where located on intensely fractured zones or solution openings. Fair foundation stability is determined by the presence of the water table, the type of rock composition, and weathering depth. Poor foundation stability means that foundations must be artificially stabilized to allow sufficient bearing capacity for light or moderate construction.³

¹Alan R. Geyer and J. Peter Wilshusen, *Engineering Characteristics of the Rocks of Pennsylvania* (Harrisburg, PA: Pennsylvania Geologic Survey, 1982), p. 14.

²Ibid., p. 14.

³Ibid., p. 14.

GEOLOGIC FORMATION CHARACTERISTICS

Formation Name (Composition)	Symbol	Porosity & Permeability	Groundwater	Ease of Excavation	Foundation Stability
VINTAGE FORMATION (Dark-gray, knotty, argillaceous dolomite having impure, light gray marble at the base; maximum thickness is 650 feet.)	Ev	Joint and solution openings provide a secondary porosity of moderate magnitude; low permeability.	Median yield is 30 gal./min.; water is relatively hard.	Difficult; bedrock pinnacles are a special problem; fast drilling rate.	Good; solution cavities and bedrock pinnacles should be thoroughly investigated.
STONEHENGE FORMATION (Gray, finely crystalline limestone.)	Os	Joint and solution channel openings provide a secondary porosity of low to moderate magnitude; high permeability.	Median yield is 100 gpm; highest yields are obtained from fractures and solution cavities; water is relatively hard.	Difficult; bedrock pinnacles are a special problem; fast drilling rate.	Good; should be excavated to sound bedrock and thoroughly investigated for cavernous areas.
EPLER FORMATION (Gray interbedded limestone and dolomite.)	Oe	Joint and solution channel openings provide a secondary porosity of low to medium magnitude; low permeability.	In the Lancaster Valley, Epler is a fair source for public supply and industrial use (51% of wells studied have yields greater than 25 gpm).	Difficult; bedrock pinnacles are a special problem; fast drilling rate.	Good; should be excavated to sound bedrock and thoroughly investigated for cavernous areas.
BUFFALO SPRINGS FORMATION (Light-gray to pinkish-gray, fine to coarsely crystalline limestone and interbedded dolomite; sandy beds are found locally; maximum thickness is about 1,000 feet.)	Ebs	Solution channels provide a secondary porosity of moderate magnitude; low permeability.	In the Lancaster Valley, the median yield is 10 gal./min.	Difficult; bedrock pinnacles are a special problem; moderate drilling rate; locally, sandstone beds slow the drilling rate.	Good; thorough investigation for sinkholes and irregular bedrock surface should be undertaken.
ZOOKS CORNER FORMATION (Medium-gray, very finely crystalline dolomite; silty and sandy; some shaly beds; laminated; minor amounts of medium-gray limestone; total measured thickness is 1,500 to 1,600 feet.)	Ezc	Openings along bedding, cleavage, joint, and fault planes provide a low to moderate secondary porosity; moderate to high permeability.	One of lower yielding carbonate-rock aquifers in Lancaster County; median yield is 6 gal./min. yields of over 1,000 gal./min. have been reported, however.	Difficult; fast drilling rate.	Good; thorough investigation for solution cavities should be undertaken.
KINZERS FORMATION (Dark-brown shale; contains the trilobite <i>Olenellus</i> ; 150 feet thick.)	Ek	Joint- and cleavage-plane openings provide a secondary porosity of moderate magnitude; moderate permeability.	Median yield is 30 gal./min.; well yields range from less than 1 to 400 gal./min.	Moderately easy; unweathered rock is difficult; quartz boulders are a special problem; moderate drilling rate.	Good; should be excavated to sound material.

GEOLOGIC FORMATION CHARACTERISTICS

Formation Name (Composition)	Symbol	Porosity & Permeability	Groundwater	Ease of Excavation	Foundation Stability
LEDGER FORMATION (Light-gray, locally mottled, massive, pure, coarsely crystalline dolomite; siliceous in middle part; beds weather to rust stained, granular, cherty layers; approximately 2,000 feet thick.)	EI	Joint- and bedding-plane openings and solution channels provide secondary porosity of low to high magnitude; low to high permeability.	Median yield is 30 gal./min.; well yields range from less than 1 to 400 gal./min.; 82% of wells tested had yields greater than 25 gal./min.	Difficult; bedrock pinnacles are a special problem.	Good; solution openings and bedrock pinnacles should be thoroughly investigated.
CONESTOGA FORMATION (Medium-gray, impure limestone having black, graphitic shale partings; conglomerate at base; total thickness is unknown, but is at least 300 feet thick.)	Oc	Joint and some solution channel openings provide a secondary porosity of low magnitude; moderate to low permeability.	Median ground-water yield is 25 gal./min.; some wells encounter solution openings for very large yields; water may be very hard.	Difficult; bedrock pinnacles and numerous quartz veins are special problems; fast drilling rate; quartz veins slow the drilling rate.	Good; thorough investigation for possible collapse areas should be undertaken.
CHICKIES FORMATION (Light-gray to white hard quartzite and quartz schist.)	Ech	Joint- and cleavage-plane openings provide a secondary porosity of very low magnitude; very low permeability.	Median yield is 20 gpm; most water is obtained from the fractured, weathered zone at the top of bedrock; water levels show strong seasonal influx, except for wells in major stream valleys; water is usually soft.	Difficult; slow drilling rate, in part due to many quartz veins that exceed 12 inches in width; large boulders may be a special problem; locally highly fractured and highly weathered and moderately easy to excavate.	Good; should be excavated to sound material.
ANTIETAM FORMATION (Light-gray, buff weathering quartzite and quartz schist; some ferruginous quartzite; fine-grained; maximum thickness is about 300 feet.)	Ea	Joint- and cleavage-plane openings provide a secondary porosity of low magnitude, low permeability.	Median yield is 20 gal./min.; for maximum yield, valleys, faults, and other fracture zones are most favorable well sites.	Difficult; slow drilling rate, in part due to many quartz veins that exceed twelve inches in width; large boulders may be a special problem; where highly weathered, moderately easy to excavate.	Good; should be excavated to sound material.
HARPERS FORMATION (Dark-greenish gray phyllite and albitemica schist; coarse-grained; abundant quartz; maximum thickness is about 1,500 feet.)	Ch	Joint- and cleavage-plane openings provide a secondary porosity of low magnitude; low permeability.	Median yield is 24 gal./min. Yields are usually obtained from the fractured, weathered zone at the top of the bedrock; water is mostly soft and of good quality; iron may be a problem.	Weathered zone is moderately easy to excavate; unweathered rock is difficult; quartz boulders are a special problem; fast to moderate drilling rate.	Good; should be excavated to sound material.

GROUNDWATER SUPPLY

Another important environmental factor to consider in East Hempfield Township is the direct relationship between land use characteristics and groundwater. An understanding of local groundwater conditions is important in allocating future land uses so as to protect important groundwater recharge areas, assure adequate well water for rural areas, and in planning for future sewage facilities. The fourth element of the geologic formation table on pages 14 and 15 describes the average and median groundwater yields for each geologic formation. These descriptions are based upon general observations and by no means dictate the actual groundwater yields of any given locale within the Township. A more detailed description concerning groundwater follows. The geologic conditions present within the Township affect both groundwater supply and groundwater contamination.

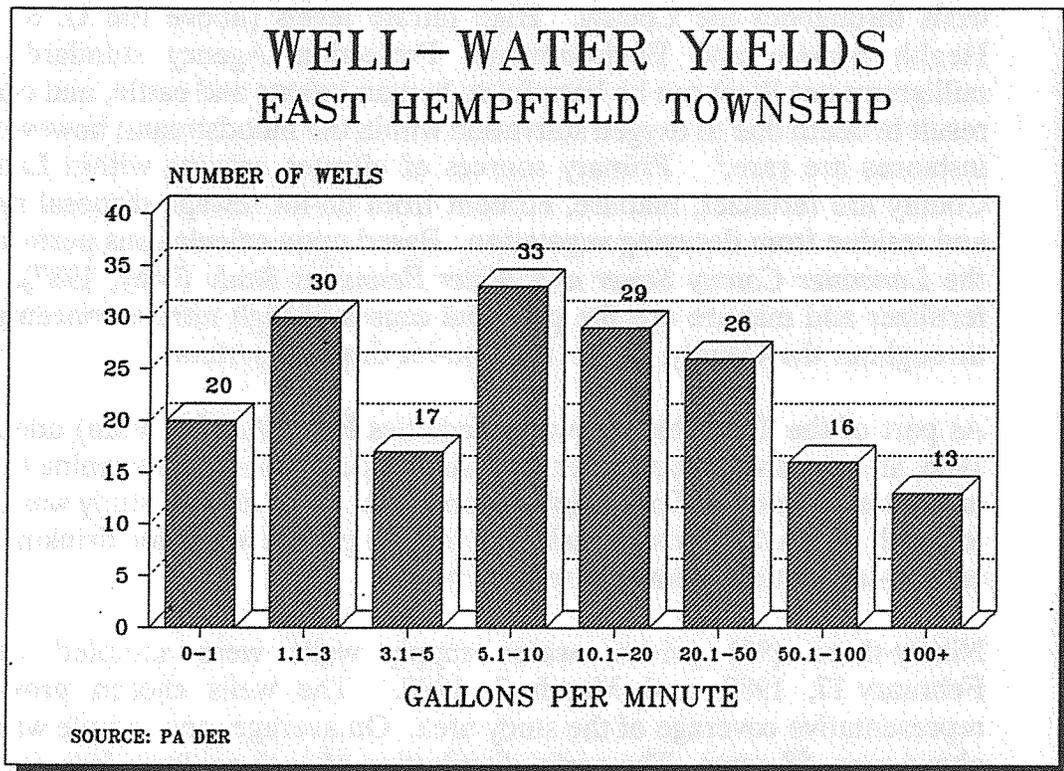
Based upon two studies entitled *Summary Groundwater Resources of Lancaster County, Pennsylvania* and *Engineering Characteristics of the Rocks of Pennsylvania*, a table has been constructed listing the groundwater yields of the Township's respective geologic formations:

GROUNDWATER YIELDS			
Map Symbol	Formation Name	Range of Yield (gpm)	Median Yield (gpm)
Ev	Vintage Formation	2, 7, 70'	N/A
Os	Stonehenge Formation	N/A	100
Oe	Epler Formation	(51% of the wells tested reported yields greater than 25 gpm)	
Ebs	Buffalo Springs Formation	(only 38% of the wells test reported yields greater than 25 gpm)	10
Ezc	Zooks Corner Formation	3 to 105	20
Ek	Kinzers Formation	2, 25, 30'	N/A
El	Ledger Formation	2 to 550	30
Oc	Conestoga Formation	20,250	25
Ech	Chickies Formation	1 to 30	6
Ea	Antietam Formation	3 to 40	5
Eh	Harpers Formation	3 to 40	5

*Only three wells tested.

Second, more recent information was obtained from the Pennsylvania Department of Environmental Resources' Bureau of Topographic and Geologic Survey. The recently compiled Groundwater Inventory System for Lancaster County reports the following yields for wells located in East Hempfield Township.

Of the 184 wells reported in East Hempfield Township, reported yields range from 0 to 200 gallons per minute. The average yield is 23.5 gpm, while the median yield is 10 gpm.



"A typical household with three family members would require an average 0.2 to 0.4 gallons per minute (gpm). Peak rates of use would range between 3 and 5 gpm for the same household. Actual well yields needed to supply this demand depends upon the amount of storage capacity in the household system."⁴

About 36% of all wells tested showed median yields below 5 gpm. This would suggest that the majority of the Township can be adequately supplied with groundwater for domestic uses. With regard to public water supplies, it appears that the formations of Ledger, Vintage, and Kinzers offer the best potential for significant sustained yields. The formations of Zooks Corner and Buffalo Springs produce the lowest yields and should not be considered for additional public supply. The formations which pose the best conditions for significant public groundwater supply are located in the central part of the Township. Detailed groundwater studies and analyses will be necessary prior to any eventual operation of additional public or industrial groundwater wells.

⁴Gannett Fleming Environmental Engineers, Inc., *Lancaster County Sewer and Water Resources Study* (Harrisburg, PA: May, 1987) p. 8.

GROUNDWATER QUALITY

Lancaster County is plagued with widespread groundwater contamination. High concentrations of nitrates have been identified within many water supply wells throughout the County. High nitrate levels (above the U. S. Public Health Service and Environmental Protection Agency standard of 10 milligrams per liter) can be harmful to human infants and cattle, and can even result in death due to oxygen starvation within the bloodstream; however, such instances are rare.⁵ Primary sources of nitrates existing within Lancaster County are fertilizer, manure, effluent from on-lot sewage disposal systems, and residue from decaying vegetation. Based upon calculations performed in the *Lancaster County Sewer and Water Resources Study* (May, 1987), excess fertilizer and manure are the principal causes of high nitrate concentrations throughout the County, rather than on-lot disposal systems.⁶

As part of the Township's Sewage Facilities Plan (Act 537 Plan) adopted in 1988, an extensive groundwater analysis was performed to determine the level of nitrates within the Township's groundwater. The area of study was limited to north of PA 283, where residents rely on private wells for drinking water and on-lot septic systems for sewage needs.

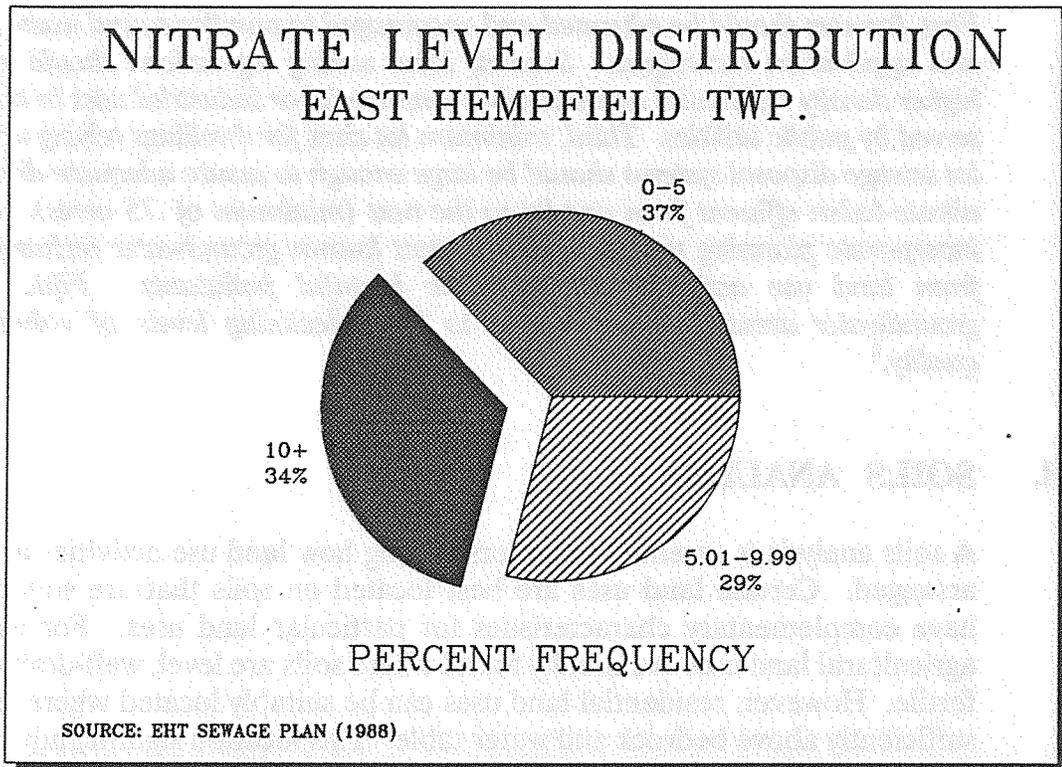
Ninety-three (93) private water supply wells were sampled between February 17, 1988, and March 7, 1988. The wells chosen provided a representative coverage of the study area. On average, one sample was taken about every 58 acres. The aerial distribution of each geologic formation, and the number of well samples from each, is as follows:

Formation	No. of Wells Tested	Aerial Distribution
Zooks Corner	28	37%
Buffalo Springs	32	28%
Ledger	7	14%
Stonehenge	9	10%
Kinzers	6	5%
Epler	10	4%
Vintage	1	.5%
Total	93	98.5%

⁵Gannett Fleming Environmental Engineers, Inc., *Lancaster County Sewer and Water Resources Study* (Harrisburg, PA: May, 1987), p. 160.

⁶*Ibid.*, pp. 160—162.

The results of the water tests revealed that the average nitrate-nitrogen concentration of all well samples was 8.4 ppm. The percentage distribution of the analysis is shown below.



Sixty-six percent of samples contained less than 10 ppm nitrate-nitrogen, the maximum allowed by EPA guidelines. Conversely, 34% contained over 10 ppm. There are three major areas where the nitrate levels are above 10 ppm: an area along Colebrook Road, south of Chickies Creek; a second area centered on the intersection of Colebrook Road and State Road; and an area north and south of East Petersburg Borough. The remaining areas are about equally divided between concentrations of 0 to 5 ppm and 5.01 to 9.99 ppm, with a few scattered values above 10 ppm.

This groundwater quality analysis indicates that there are some constraints to development relying on on-lot sewage disposal. In those areas where the nitrate level is above 10 ppm, development utilizing on-lot disposal systems will not be permitted by the Pennsylvania Department of Environmental Resources (DER). In other areas where the nitrate levels are elevated, the minimum lot size required by DER may be substantially larger than that allowed by zoning regulations.

Remedial measures to improve groundwater quality can include pumping and treatment of groundwater, construction of walls and caps to block water movement, biological treatment of groundwater in place, and site excavation. All of these measures are very expensive and impractical for widespread contamination. Consequently, practical remedial actions appear limited to the treatment of groundwater withdrawn for specific water uses. By comparison, the

prevention of groundwater contamination is far less costly. Many of these preventive measures require actions at the State and County levels; however, some can be undertaken at the local level.⁷

First, farmers should be educated and encouraged to practice sound waste storage and application techniques. Second, local zoning regulations should prohibit higher density residential and intensive commercial or industrial uses in areas not served by public utilities. Third, minimum lot sizes for dwellings relying upon on-lot sewage disposal systems should be large enough to assure adequate dilution of nitrate-laden effluent from one lot to the next (minimum of .75 acres). Fourth, incorporate planning measures that protect known groundwater recharge areas from land use activities that generate harmful pollutants. Fifth, protect groundwater areas that are known to have declining levels of volume and quality.⁸

B. SOILS ANALYSIS

A soils analysis is essential in understanding how land use activities are to be arranged. Certain land uses are best located on soils that are suitable and have complementary characteristics for particular land uses. For example, agricultural land uses are usually found where soils are level, well-drained, and fertile. However, residential land uses can be suitably located where soils are sufficiently above bedrock and water table. This location significantly reduces the costs associated with excavating a foundation, as well as locating and designing an on-lot sewage disposal system. Finally, industrial uses favor soils that are relatively flat and sturdy so as to withstand the heavy weights associated with the operation of large plants. The soil/land use relationships described here do not illustrate all the possibilities that affect and eventually determine actual land use designations and/or facility siting. Nonetheless, this section will provide a more complete analysis of the Township's soils and their characteristics with relation to their general suitability for various land use activities. The Soils and Geology Map contained on page 17 illustrates the geographic distribution of various soils and their land use implications.

Because of Lancaster County's leading position as an agriculturally productive region, the United States Department of Agriculture (USDA), Soil Conservation Service, has recently completed its second soil survey of the County. This recent survey was completed in 1985 and utilizes the best soil classifying and mapping technologies available at the present time. Consequently, some soil names and their locations are likely to differ from those compiled in the County's former soil survey which was issued in 1959. Obviously, these changes are not suggesting that the soils have changed, but that the methods of soil identification and classification have been refined.

⁷Gannett Fleming Environmental Engineers, Inc., *Lancaster County Sewer and Water Resources Study* (Harrisburg, PA: May, 1987), pp. 162-164.

⁸*Ibid.*, pp. 162-164; p. xxx.

The *Soil Survey of Lancaster County, Pennsylvania* (1985) shows the Township containing three of the County's six general soil groups. In East Hempfield Township, nearly all of the northern two-thirds of the Township is composed of the agriculturally productive Duffield-Hagerstown soil group. This soil group is comprised of nearly level to steep, well-drained soils found in undulating broad valleys. These soils are formed in residuum from limestone.

The second soil group found within the Township is the Manor-Chester-Glenelg soil group. This group is located in the southwest section of the Township in the vicinity of the Chestnut Ridge. This soil group is characterized by nearly level to very steep, well-drained soils on broad ridge tops and side slopes. These soils are formed in residuum from mica schist, granitized schist, quartzite, and gneiss.

Finally, the third soil group is the Letort-Pequea-Conestoga soil group. These soil types are located in the southeast corner of the Township and are generally described as nearly level to very steep, well-drained soils on side slopes of ridges. These soils are formed in residuum from graphitic and micaceous limestone and schist. The following lists the specific soil types found within the Township, their name, symbol, and agricultural rating.

SOIL TYPES IN EAST HEMPFIELD TOWNSHIP			
Soil Symbol	Soil Name	Slope Percentage	Agricultural Rating
Hg	Holly silt loam	0-3	IIIw
BdA	Bedington silt loam	0-3	I
BdB	Bedington silt loam	3-8	Ile
BdC	Bedington silt loam	8-15	IIIe
BeD	Bedington Channery silt loam	15-25	IVe
CbA	Chester silt loam	0-3	I
CbB	Chester silt loam	3-8	Ile
CbC	Chester silt loam	8-15	IIIe
CkA	Clarksburg silt loam	0-5	IIw
CIB	Clymer very stony loam	3-8	VI s
DbA	Duffield silt loam	0-3	I
DbB	Duffield silt loam	3-8	Ile
CnA	Conestoga silt loam	0-3	I
CnB	Conestoga silt loam	3-8	Ile
GbB	Glenelg silt loam	3-8	Ile
GbC	Glenelg silt loam	8-15	IIIe
GbD	Glenelg silt loam	15-25	IVe
GdB	Glenville silt loam	3-8	Ile
HaA	Hagerstown silt loam	0-3	I
HaB	Hagerstown silt loam	3-8	Ile
HbC	Hagerstown silty clay loam	8-15	IIIe
HbD	Hagerstown silty clay loam	15-30	IVe
Cm	Comus silt loam	0-3	I
HfB	Hollinger silt loam	3-8	Ile
HfC	Hollinger silt loam	8-15	IIIe

SOIL TYPES IN EAST HEMPFIELD TOWNSHIP			
Soil Symbol	Soil Name	Slope Percentage	Agricultural Rating
HfD	Hollinger silt loam	15-25	IVe
Ln	Lindside silt loam	0-3	IIw
MaB	Manor silt loam	0-3	IIe
MaC	Manor silt loam	8-15	IIIe
MaD	Manor silt loam	15-25	IVe
MbB	Manor very stony silt loam	3-8	VI _s
MbD	Manor very stony silt loam	8-25	VI _s
MbF	Manor very stony silt loam	25-60	VI _s
Ba	Baile silt loam	0-3	Vw
Nc	Newark silt loam	0-3	IIw
BsC	Brecknock very stony silt loam	8-25	VI _s
Ne	Nolin silt loam	0-3	I
Pa	Penlaw silt loam	0-3	I
Lg	Linden silt loam	0-3	I

PRIME FARMLAND

One primary consideration of soils mapping is the identification of prime farmlands. The U. S. Department of Agriculture (USDA) describes prime farmland as "the land that is best suited to producing food, feed, forage, fiber, and oilseed crops. It has the soil quality, growing season, and water supply needed to economically produce a sustained high yield of crops when it is treated and managed using acceptable farming methods. Prime farmland produces the highest yields with minimal inputs of energy and economic resources, and farming it results in the least damage to the environment."⁹ Prime farmland is characterized by an adequate source of water supply, favorable climatic conditions, proper chemical properties, good permeability to air and water with few or no rocks, resistance to erosion, and level of fairly level topography.¹⁰ The USDA encourages all levels of government and private individuals to effectively use these valuable resources to meet the nation's short- and long-range food and fiber needs.

About 55% of the soils within Lancaster County are considered prime farmlands. These soils have enabled the County and its farmers to attain State and national distinction as one of the most productive sources of agricultural products.

Prime farmland soils are those soils with an agricultural rating of Class I or II. In addition, some conservation and agricultural agencies consider soils of Class

⁹Soil Conservation Service, *Soil Survey of Lancaster County, Pennsylvania* (Washington, DC: United States Department of Agriculture, May, 1985), p. 45.

¹⁰*Ibid.*, p. 45.

III to be of regional agricultural importance. The Soils and Geology Map on page 17 shows all Class I and II soils as green, and Class III soils as brown. Nearly all the land north of PA Route 283 is prime farmland. South of PA Route 283 the Soils and Geology Map indicates that the majority of the soils are prime farmland. However, much of the land is developed with urban land uses and the identification of prime farmland is insignificant. There are, however, small pockets of active prime farmland south of PA Route 283, particularly south of Marietta Pike and west of Rohrerstown Road, and between Old Harrisburg Pike and PA Route 283.

DEVELOPMENT CONSTRAINTS

Another soils consideration relates to those soils that have constraints for building development. Such constraints can include a wide range of soil characteristics, including steep slopes, wetness, depth-to-bedrock, frost action, shrink-swell, low strength and cohesiveness, and flooding. Other soil constraints become important if on-site sewage disposal methods are contemplated. These constraints include steep slopes, wetness, flooding, slow percolation rates, poor filtration characteristics and high secondary porosity due to fractures and solution channels. It is important to identify and locate those soils that possess these building development and on-site sewage disposal constraints so that the projected land uses can be kept away from these environmentally sensitive areas.

The following table lists those soils that possess "severe" constraints for these specified activities, along with their particular problems.

SOILS WITH SEVERE DEVELOPMENT CONSTRAINTS			
Soil Symbol	Soil Name	Severe Building Development Constraint	Severe On-Lot Sewage Disposal Constraint
BcD	Bedington Channery silt loam	slope	slope
CkA	Clarksburg silt loam	wetness	wetness & percs slowly
GbD	Glenelg silt loam	slope	slope
GdB	Glenville silt loam	wetness	wetness & percs slowly
HbD	Hagerstown silty clay loam	slope	slope
Cm	Comus silt loam	flooding	flooding
HfD	Hollinger silt loam	slope	slope
Ln	Lindside silt loam	flooding & wetness	flooding & wetness
MaD	Manor silt loam	slope	slope
MbD	Manor very stony silt loam	slope	slope
MbF	Manor very stony silt loam	slope	slope
Ba	Baile silt loam	wetness	wetness & percs slowly
BsC	Brecknock very stony silt loam	slope	slope
Nc	Newark silt loam	flooding & wetness	flooding & wetness
Ne	Nolin silt loam	flooding	flooding
Hg	Holly silt loam	flooding & wetness	flooding, wetness, percs slowly
Pa	Penlaw silt loam	wetness	wetness & percs slowly
Lg	Linden silt loam	wetness	flooding & wetness

These soils have been identified on the Soils and Geology Map by a cross-hatched pattern. Any future development areas should be specifically excluded from these sensitive soil conditions to minimize environmental degradation and the threat to public health, safety and welfare.

C. SURFACE WATERS

DRAINAGE BASIN DESCRIPTIONS

The way in which water moves through our environment has definite land use implications. First, streams and their floodplains present hazards to intensive development. Next, the habitats that are created by erosion are often uneconomical to develop, yet offer high quality conservation and recreational experiences. Finally, the watershed or drainage basin is a basic geographic unit used to plan and design sanitary and storm sewer systems. Systems that can make use of gravity-fed lines can reduce the initial capital cost and long-range operation and maintenance costs of these utilities.

East Hempfield Township is dissected by two major drainage basins. The Chickies Creek watershed drains the northwest corner of the Township, while the remainder of the Township drains into the Little Conestoga Creek watershed. Approximately 12% of the Township drains into the Chickies Creek, and 88% drains into the Conestoga Creek.

The Chickies Creek watershed drains 127 square miles between its headwaters in the Furnace Hills, in West Cornwall Township, Lebanon County, to the Susquehanna River, south of Marietta. The main stream channel has a length of 29.7 miles, with an average bottom gradient of 17 feet per mile. The upper half of the watershed is hilly to undulating land, and the lower half consists of a wide agricultural valley with gently rolling topography. Only a minor portion of the watershed is forested, and those areas are, generally, the uplands and steeply sloped valleys. The remainder of the watershed is a combination of urban land uses and agriculture.¹¹

The Little Conestoga Creek watershed is an elongated rectangular-shaped basin with near level to rolling topography. This watershed drains an area of 65.5 square miles of primarily agricultural and developed land. The main stream channel is 20.4 miles long and has a bottom gradient of 12.5 feet per mile.¹²

These two drainage basins described above can be further subdivided into minor watersheds associated with smaller streams and tributaries. All of the drainage basins, both major and minor, are illustrated on the Natural Features

¹¹E. H. Bourgard and Associates, *Water Resources Study for the Lancaster County Planning Commission, Lancaster County, Pennsylvania* (Harrisburg, PA August, 1966), pp. 14-15.

¹²*Ibid.*, p. 17.

Map located on page 32. Primarily, the Township's overall drainage pattern is influenced by the underlying carbonate geology. The drainage patterns of both the Chickies Creek and the Little Conestoga Creek are characterized by an angular or karst pattern. These conditions are typical of limestone geology where the permeability of the residual soil, and secondary porosity of the underlying bedrock, cause much of the surface waters to become readily absorbed.¹³

SURFACE WATER QUALITY

While there are no water quality sampling stations located in East Hempfield Township, there is one which monitors the Chickies Creek located at the PA Route 441 bridge. This station is sampled quarterly. Between 1980 and 1987, there were 27 water samples taken. Of those 27 samples, 1 sample contained excessive ammonia-nitrogen levels, 9 samples showed elevated nitrate-nitrogen levels, and most samples were reported to have higher than normal fecal coliform levels. The *Lancaster County Sewer and Water Resources Study* attributes the bulk of water quality contaminants to the use of manure and chemical fertilizers, rather than direct discharges from municipal wastewater treatment plants.¹⁴

The water quality data shown above suggests that agricultural pollutants, such as manure and chemicals, are contributing to the water quality degradation of the Chickies Creek.

Within the past few years, a heightened awareness has emerged regarding the control of agriculture-related runoff. Much of this newfound interest has been generated through the efforts to reverse degradation of the Chesapeake Bay. Several states and various Federal agencies have developed voluntary and mandatory programs aimed at improving the quality of waters that reach the Bay. Studies have conclusively demonstrated that agricultural runoff entering the Bay from the Susquehanna River are seriously contributing to the Bay's pollution problems.

Several local municipalities within the region have begun taking steps to minimize the impact of agricultural runoff. Erosion control filter strips are being required through local zoning regulations to reduce the erosion of farmland soils and fertilizers. *East Hempfield Township should develop and implement manure management regulations aimed at reducing surface water pollution resulting from the over fertilization of agricultural lands. Additionally, the Township should keep abreast of any regulatory options available to address this important issue and encourage agricultural practices that promote the conservation of the Township's prime agricultural soils and reduce the level of*

¹³Douglas S. Way, *Terrain Analysis, 2nd Edition* (Stroudsburg, PA: Dowden, Hutchinson and Ross, Inc., 1973), p. 105.

¹⁴Gannett Fleming Environmental Engineers, Inc., *Lancaster County Sewer and Water Resources Study* (Harrisburg, PA: May, 1987), p. 16.

harmful contaminants that enter the surface water system. The Township should also monitor future urban development so as to reduce pollutant loads resulting from urban runoff.

HIGH QUALITY WATERS AND SCENIC RIVERS

None of the watersheds within East Hempfield Township are designated as "high quality or exceptional value" waters according to the Pennsylvania Department of Environmental Resources, Chapter 93. In addition, no State-designated scenic river corridors are located in the Township.

FLOODPLAIN PROTECTION

East Hempfield Township is fortunate in that flooding is not a widespread problem. The main storm season for the area is spring and summer. During these months, intense rainfall may occur for short periods of time, with an associated quick rise in the water depth of a stream. This situation typically causes some road flooding, but major flood damages have not usually been suffered.¹⁵

The lack of severe flooding conditions within the Township is attributable to the physical features of the watersheds and stream channels. However, of equal importance is the fact that local residents have generally not attempted to develop the low-lying stream banks and floodplains.¹⁶

Road flooding along most creeks in East Hempfield Township is caused primarily by inadequate drainage. At some locations, flooding levels are increased due to limited carrying capacities of stream culverts. During storm events, trees, and other debris may be washed away and carried downstream, collecting against bridges and obstructing stream flow. The accumulation of debris greatly reduces the carrying capacity of bridges and culverts, increasing flooding into unpredictable areas, increasing velocity of flow immediately downstream, and eroding entrances and bridge approach embankments. Presently, there are no flood protection structures within the Township limits. The Township does, however, have zoning laws that regulate building and development in areas that possess high risk of flooding.¹⁷

East Hempfield Township currently participates in the State and Federal floodplain protection programs. The East Hempfield Township Zoning Ordinance strictly regulates development within the 100-year floodplain. The floodplains found in East Hempfield were identified from the *Soil Survey of Lancaster County, Pennsylvania* and are associated with the drainage of the

¹⁵*Flood Insurance Study, Township of East Hempfield, Lancaster County, Pennsylvania* (Washington, DC: Federal Emergency Management Agency, March, 1979), p. 6.

¹⁶*Ibid.*, p. 6.

¹⁷*Ibid.*, p. 6.

Little Conestoga Creek, Chickies Creek, Swarr Run, Miller Run, and Brubaker Run.

STORM WATER MANAGEMENT

One of the public's most frequently described planning problems is the impact from storm water runoff. As an area develops, the patterns, volumes, and velocities of storm water runoff are likely to change. These changes can create severe impact on downstream properties that were not anticipated by area residents. Consequently, the residents blame these impacts and resultant problems on the development itself.

Storm water runoff can be effectively managed; however, this management often involves complicated engineering studies which usually result in costly improvements. Nonetheless, East Hempfield Township adopted a storm water management ordinance in 1986. This ordinance was developed to correct the storm water runoff problem by requiring all pre-development site conditions to be "good sod." Unfortunately, since the ordinance was designed to help control individual site runoff, the ordinance is effective for small watersheds only. This is because it does not control the interaction of various detention basins. However, a solution is currently being worked on by the Lancaster County Engineer's Office. The office has recently begun work on preparing an ordinance to address storm water runoff on a regional basis. However, the implementation of such a regional storm water management program is several years away.

D. WETLANDS

Much recent attention has been focused upon the importance of wetlands. "Wetlands provide food and habitat for an abundance and diversity of life not rivaled by most types of environments. Wetlands include swamps, marshes, bogs, and similar areas. All wetlands have value, although their value is highly variable. Productivity in wetlands is measured in terms of living things. A tidal marsh does not yield its crop directly to man, but its yield is reflected in the abundance of finfish, shellfish, and waterfowl.

"Wetlands provide food and habitat for an abundance of animal life; are breeding, spawning, feeding, cover, and nursery areas for fish; and are important nesting, migrating, and wintering areas for waterfowl.

"Wetlands also provide several direct benefits to man. They serve as buffer areas which protect the shoreline from erosion by waves and moderate storm surges. Wetlands act as natural water storage areas during floods and storms by retaining high waters and gradually releasing them after subsidence, thereby reducing damaging effects. Wetlands, especially seasonally inundated freshwater wetlands, are often groundwater recharge areas. That is, during dry periods, there are points at which rain and surface water infiltrate underlying or nearby aquifers which are often the sources of local drinking water.

Wetlands also purify water not only by filtering and removing pollutants, but also by assimilating and recycling them."¹⁸

The wetland system in East Hempfield Township is strongly related to the floodplains described previously and is therefore protected from development by floodplain regulations. There are, however, some wetlands located beyond the floodplains and deserve protection from development. Wetlands are shown on the Natural Features Map. *Local officials should establish planning design and review procedures that will enhance the conservation of wetlands. Such procedures can be inserted in zoning and subdivision and land development ordinances and can dovetail with existing State and Federal permit requirements.*

E. IMPORTANT WILDLIFE HABITATS

As an area is converted from its natural to a man-made state, the delicate balance of the local ecosystem is often disrupted. This imbalance ruins or strains the environment's ability to support varied forms of plant and animal species. In turn, local species become threatened or endangered.

State and Federal agencies have become increasingly concerned over the protection of local natural habitats as a means of protecting wildlife diversity. The protection of these habitats can also serve other equally important functions like the control of erosion, the recharge of groundwaters, the attenuation of pollutants, the abatement of noise, dust, and glare, and the provision of valuable passive recreation opportunities. For these reasons, all levels of government and other conservation-oriented groups have become involved in the protection of these habitats.

Like these groups, East Hempfield Township is also committed to ensuring the safety of these important areas. Consequently, this section will catalog those areas where documented and/or suspected incidences of unique, sensitive, or threatened species exist. Then, these areas will be mapped so that intensive development activities can be directed elsewhere and/or adequate review measures can be implemented to provide protection without requiring the confiscation of the land.

Information for this section was obtained from the Pennsylvania Natural Diversity Inventory (PNDI). This agency conducts an ongoing process that cumulatively updates and refines data regarding rare, endangered, or otherwise significant natural features. This inventory uses some 800 sources of information to map, describe, and disseminate facts about important natural features.

It is the policy of PNDI not to release detailed site specific information about significant natural features for general exposure to the public. This protects

¹⁸U. S. Army Corps of Engineers, *Are You Planning Work in a Waterway or Wetland?* (Baltimore, MD: c. 1985).

the features from persons who become curious and attempt to locate and collect such features. Instead, PNFI will provide generalized locations of known or historic natural features occurrences.

PNFI contains records of three species of special concern. These species include the Allegheny Cave Amphipod, the Bog Turtle, and the Virginia Rose. These records have not been confirmed in recent years, and only on-site inspection can confirm whether they still inhabit the area. Representatives from the Lancaster County Nature Conservancy inventoried the Township and could not locate any of the species indicated above, nor any other areas worthy of natural area designation.

F. UNIQUE GEOLOGICAL FORMATIONS AND CAVES

The geology of an area is largely responsible for its landform. Unique geologic formations can produce scenic vistas and places of special interest. Similarly, underground caves also provide recreational, scientific, and educational opportunities that deserve protection. Following literary research regarding these two types of natural features, only one cave and one unique geologic formation were determined to be located within the Township. The following lists those resources cited in the Pennsylvania Department of Environmental Resources' publications entitled *Caves of Southeastern Pennsylvania* and *Outstanding Scenic Geological Features of Pennsylvania*:

<u>MAP SYMBOL</u>	<u>FORMATION/CAVE NAME AND DESCRIPTION</u>
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F1	Getz Farm Fossil Locality - Approximately one mile north of Rohrerstown there exists a unique site of Lower Cambrian fossils, chiefly trilobites; the site from which an almost 500 specimen collection came, now at the Peabody Museum (Yale University); the type locality for the trilobite (<i>Olenellus getzi</i>). Trilobites are present in shale of the Kinzers Formation. ¹⁹
----	---

C1	Donnerville Cave - This small cave can be found by traveling one mile east from Mountville on Pa. 462. At this point, turn north onto Donnerville Road. A short macadam lane on the east side of the road leads to a small trash-filled quarry.
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The entrance to Donnerville Cave, on the south quarry wall, is six feet high and three feet wide. A drop at the entrance requires one to scramble upward six feet in order to enter the cave. A small chamber, ten feet high, four feet wide, and ten feet long, is encountered five feet from the entrance. A narrow

¹⁹Alan R. Geyer and William H. Bolles, *Outstanding Geologic Features of Pennsylvania* (Harrisburg, PA: Pennsylvania Department of Environmental Resources, Bureau of Topographic and Geologic Survey, 1979), p. 429.

crawl-way continues from the chamber for about 15 feet, where a slot in the ceiling admits one to a cavity eight feet wide, six feet long, and one foot high. In order to measure the terminating cavity, the author had to squirm through the above-mentioned slot which is only eight inches wide.

The Donnerville area is underlain by Cambrian carbonate rocks. Donnerville Cave is excavated in the Upper Vintage Formation, which is here massive dolomite. The cave follows a course due east along a calcite vein in the northward dipping Vintage Formation. Some varicolored quartz can be found interbedded in the calcite vein. The basal shale member of Kinzers Formation outcrops directly above the cave.²⁰

G. HISTORIC SITES

East Hempfield Township, like much of southeastern Pennsylvania, is fortunate to possess a rich cultural and architectural heritage. Today, this heritage is apparent from the many older individual buildings, structures, and related settlements that are scattered throughout the Township. Local officials and residents recognize the value in conservation and rehabilitation, plus restoration or adaptive reuse of these various historic resources as a means of providing a glimpse into an area's important past. Additionally, historic preservation can provide educational opportunities regarding historic lifestyles and architectural styles. Well-maintained historic areas can create a sense of unique identity that stimulates civic pride and economic vitality, and can become a basis for tourism. Furthermore, many local recreation and conservation facilities make use of historic sites for administrative offices, interpretive and educational centers, and public meeting or special events facilities.

Hempfield was one of the original townships at the time of the separation of Lancaster County from Chester County. Old Hempfield Township was later subdivided into East Hempfield and West Hempfield Townships. In reference to the name, it should be noted that "hemp" was one of the most important and lucrative of all crops in Lancaster County in the eighteenth century.

Most of the early (pre-1750) settlers in the land now encompassed in East Hempfield Township were of Germanic or Swiss origins; many were Mennonites. Among the early settlers may be numbered the names of Brubaker, Neff, Baughman, Kauffman, Landis, Kneisley (Nissley), Lichy, Long, and Summy. There also were a few Scotch-Irish Presbyterians, such as Josiah Scott.

²⁰J. R. Reich, Jr., *Caves of Southeastern Pennsylvania* (Harrisburg, PA: Pennsylvania Department of Environmental Resources, Bureau of Topographic and Geologic Survey, 1974), page 23.

Villages of this township include Landisville, Salunga, and Rohrerstown. Some development took place on the site of Landisville about 1808-1810, and this was spurred on by John Landis after 1825. The establishment of the Landisville Camp Meeting about 1870, plus the presence of the main line of the railroad, caused growth in Landisville in the last three decades of the 1800's. Salunga, actually almost the west end of Landisville, was laid out by Col. Hostetter about 1847.

Rohrerstown was originally called Hempfield. It was laid out as 89 building lots by Christian Rohrer on March 9, 1812. The town grew rather slowly after its first decade, with some notable exceptions in the 1870's and 1880's. The eastern part of the town, on the south side of Marietta Pike, grew around the turn of this century.

The following lists and briefly describes those 68 different historic sites cited in the Township by the Historic Preservation Trust of Lancaster County. These sites are also illustrated on the Cultural Features Map located on page 39.

Survey #	Map #	Brief Description
071-19-2	H1	Two-story limestone farmhouse with an interior that contains much good Federal-style interior woodwork that is original, including an open staircase in the center hall and several cupboards. Circa 1803.
071-19-3	H2	Two-story brick house with the use of Flemish bond brick work. Circa 1825-1845.
071-19-4	H3	Two-story, five-bay facade limestone house identified as one of the two important early buildings of Main Street in Landisville. Circa 1808-1810.
071-19-5	H4	A large residence showing a proficient adaptation of the Second Empire-style. Circa 1870-1890.
071-19-6	H5	One-story, Germanic-style log meeting house. Unquestionably this is one of the most intact and most important of all surviving log structures from the eighteenth century in Lancaster County. Circa 1742.
071-19-7	H6	One-story stone mill now adapted for a residence. Circa 1770's-1780's.
071-19-8	H7	Two-story, Germanic-style stone farmstead. Circa early 1800's.
071-19-9	H8	Two-story, brick farmstead with an exterior that is an unusually intact example of a substantial rural dwelling of its period. Circa 1859.
071-19-10	H9	Two-story, brick and stone Federal-style farmstead. This structure is considered to be one of the most important and intact of all Federal period farmsteads in Lancaster County. Circa 1814-1818.
071-19-11	H10	Two-story, stone tavern now converted into a residence. Circa 1750-1775.
071-19-12	H11	Two-story, limestone house with original center hall floor plan relatively intact. Some simple Federal-style woodwork also remains. Circa 1823.
071-19-13	H12	Frame constructed wooden bridge. Circa 1873. Listed on National Register of Historic Places.

Survey #	Map #	Brief Description
071-19-14A	H13	Large brick tobacco warehouse with four different sections built at varying times. Circa 1875-1900.
071-19-15A	H14	The original East Hempfield Township High School (now IU-13 Learning Center). A brick "Depression" version of the art deco or modern style. Circa 1936-1937.
071-19-16A	H15	Two-story, five-bay facade, Georgian-style stone house. Currently, this house is nominated to the National Register of Historic Places and is listed on the Historic American Buildings Survey. Circa 1790.
071-19-17A	H16	Three-story, golden brick Colonial Revival-style house. Circa 1904.
071-19-18A	H17	Three-story, golden brick Colonial Revival-style house. Circa 1904.
071-19-19A	H18	Two-story, frame house with German siding. This house is a well-maintained example of a typical house of the 1850-1885 period in rural and small-town Lancaster County. Circa 1875.
071-19-20A	H19	Two-story, brick house with its exterior entirely intact to the original design. Circa 1896.
071-19-21A	H20	Three-story, brick Italianate-style hotel/tavern. A fine representative example of the type of small-town hotel that has been destroyed all too often. Circa 1864-1875.
071-19-22A	H21	Two-story, brick Italianate-style millers dwelling. Circa 1880.
071-19-23A	H22	Two-story, rough cast over stone farmstead. The overall character and maintenance of this group of farmstead buildings is excellent. Circa 1808.
071-19-24A	H23	Two-story, stone house. Circa 1798.
071-19-25A	H24	Two-story, brick and stone Federal-style farmstead. Among the more important Federal period farmsteads extant in Lancaster County. Circa 1815-1825.
071-19-26A	H25	One-and-a-half story, brick house with a basic exterior that offers an interesting example of a type of one-story house far more common in Lancaster City than in the countryside. Circa 1850's.
071-19-27A	H26	Two-story, brick Italianate-style house. Exemplifies a rather unusual adaptation on moderate scale of the symmetrical Italianate-type house usually favored for far larger mansions. Circa 1860-1870.
071-19-28A	H27	Two-story, stone/brick farmstead. Circa pre-1844.
071-19-29A	H28	A simple two-story, brick late Federal-style house. Circa 1839.
071-19-30A	H29	Large three-story, brick Second Empire-style house. One of the more elegant examples of the Second Empire-style in Lancaster County domestic architecture. Circa 1882.
071-19-31A	H30	Three-story, brick Second Empire-style house. Circa 1876.
071-19-32A	H31	L-shaped, two-story, brick vernacular house. A representative example of a local type of house favored in the last three decades of the nineteenth century. Circa 1890-1891.
071-19-33A	H32	Three-story, golden brick perpendicular Gothic-style church. Circa 1906.
071-19-34A	H33	Two-story, stone farmstead. One of the few properties in Lancaster County that has been in the continuous ownership and occupancy of one family since the mid-1700's. Circa 1769.

Survey #	Map #	Brief Description
071-19-35A	H34	Two-story, brick Mennonite meetinghouse. This church is typical of the majority of rectangular, plain Mennonite churches built in Lancaster County from the mid-1800's to the present day. Circa 1895.
071-19-36A	H35	Two-story, stone farmstead. This house is significant chiefly as a later stylistic survival, of an earlier type and form of dwelling in the first decade of the Victorian period. Circa 1846.
071-19-37A	H36	Two-story, stone Georgian-style house. One of Lancaster County's major surviving Georgian residences predating the Revolutionary War. Circa 1755-1765.
071-19-39A	H37	Two-story, brick house. Circa 1880.
071-19-40A	H38	Two-story, brick house. Circa 1900.
071-19-41A	H39	Two-story, brick schoolhouse. Circa 1890.
071-19-43A	H40	Two-story, brick farmhouse. This structure is typical of mid-1800 farmsteads in Lancaster County. Circa 1846.
071-19-45A	H41	Two-story, frame farmhouse. Circa mid-1800's.
071-19-46A	H42	Two-story, log farmhouse. Circa 1829.
071-19-47A	H43	Frame constructed covered bridge. Listed on the National Register of Historic Places. Circa 1855.
071-19-48A	H44	Two-story, stone farmhouse. Circa 1830.
071-19-49A	H45	Two-story, stone farmhouse. Circa 1800-1810.
071-19-50A	H46	One-and-a-half-story, stone structure and a three-story, brick warehouse. Circa 1830 and 1880, respectively.
071-19-51A	H47	Two-story, yellow brick house. Circa 1900-1910.
071-19-52A	H48	Two-story, brick house. Circa 1900.
071-19-53A	H49	Two-story, brick house. Circa 1860.
071-19-54A	H50	Two-story, brick house. This is a well-maintained and substantially intact example of the type of house built during the last part of the nineteenth century, and even into the twentieth century, in many parts of Lancaster County. Circa 1870.
071-19-55A	H51	Two-story, brick house. Circa 1880.
071-19-56A	H52	One-story, frame gas station. Used until just recently as a gas station, this building may or may not have been built for that purpose. Circa 1940.
071-19-58A	H53	Two-story, brick firehouse. Circa 1932.
071-19-59A	H54	Two-story, brick Romanesque Revival-style church. Circa 1912.
071-19-60A	H55	One- and two-story, frame cottages. These cottages were built on the 25-acre camp meeting site. Circa 1870-1880.
071-19-61A	H56	Two-story, brick farmhouse. Circa 1860.
071-19-63A	H57	Two-story, brick railroad station. This station was built by the Conestoga Transportation Company which ran trolleys from Lancaster to outlying towns. Their lines reached Salunga between 1900 and 1910. This was a line connecting Lancaster City and Elizabethtown. A praiseworthy example of adaptive reuse with little alteration to the original architecture. Circa 1900-1910.
071-19-64A	H58	One-and-one-half story, brick Art Moderne-style plant. Circa 1930.
071-19-65A	H59	Two-story, brick farmhouse. Circa 1880.

Survey #	Map #	Brief Description
071-19-67A	H60	Two-story, brick early Federal-style farmhouse. Circa early 1800's.
071-19-68A	H61	Three-story stone grist mill. Circa 1815.
071-19-71A	H62	Three-story, brick tobacco warehouse now used as a shoe outlet. Circa 1910-1915.
071-19-72A	H63	Two-story, brick Federal-style farmhouse. Circa 1838.
071-19-74A	H64	Two-story, stone farmhouse. Circa 1844.
071-19-75A	H65	Two-story, stucco Foursquare-style house. Circa 1900.
071-19-76A	H66	Two-story, stone Federal-style farmhouse. Circa early 1800's.
071-19-80A	H67	Two-story, frame farmhouse. Circa 1820-1840.
	H68	Two-story, stucco tavern. Circa 1920.

Recent amendments to the Pennsylvania Municipalities Planning Code enable local governments to plan and zone for the protection of historic resources; therefore, it is advised that the Township adopt local ordinances for this purpose. Such ordinances should require developers to design and construct future buildings that remain congruous with these important historical resources. It is also important that the Township maintain an up-to-date record of these inventoried historic properties, including a general description of their significant attributes, so that prospective developers can properly plan and design their projects.

H. ARCHAEOLOGICAL RESOURCES

Like historic sites, archaeological resources provide a glimpse into an area's distant past. In the case of archaeology, this past refers to times before local historic records were kept, or prehistoric times. Archaeological resources can provide valuable artifacts and remains, or simply information that can assist in the identification, dating, and understanding of prehistoric cultures. Many times archaeological sites are surveyed merely to verify the presence of a prehistoric culture at that location. Once this information is known, the actual evidence of such culture (artifacts and other objects) becomes less important. Such sites might then provide interesting themes for local conservation-recreation areas. To identify important archaeological resources, information was obtained from the Pennsylvania Historical and Museum Commission (PHMC), Division of Archaeology and Protection.

According to the Chief of the State Division of Archaeology and Protection, Kurt W. Carr, only two known archaeological sites are currently recorded in East Hempfield Township. The following is a general description regarding the methodology and findings concerning archaeological research within East Hempfield Township, as provided by the staff of the Division of Archaeology and Protection:

"The determination of areas of high probability for the presence of prehistoric archaeological sites in this township was based on a comparison of the topographic setting of the recorded archaeological sites to the general topography of the township. Extensive research has shown that the location of prehistoric sites is closely related to a number of environmental variables. Relatively flat ground, converging streams, springheads, saddles, floodplains, swamps, and water in general (including streams that are extinct today) are the most important factors. We use 7.5" U.S.G.S. topographic maps in developing these maps. East Hempfield Township is found on the Columbia East and Lancaster 7.5 minute U.S.G.S. maps.

"The topography of East Hempfield Township is dominated to the north by Chickies Creek and to the northeast by Conestoga Creek. Numerous small streams and runs are found throughout the township. In these areas we would expect to find sites ranging from the earliest time periods in the area, the Paleoindian Period (before 8000 B.C.) through historic times.

"The P.A.S.S. files contain only two recorded sites in East Hempfield Township. This is more a product of a lack of archaeological survey than an accurate reflection of prehistoric settlement patterns. Surveys in other parts of Lancaster County have shown that sites are present in many topographic settings. Numerous sites are recorded in townships adjacent to East Hempfield. On the Columbia East quad, no sites are recorded in East Hempfield Township. Six sites are recorded in other municipalities on this quadrangle. These sites range from the Late Archaic period to historic times.

"The two sites recorded in East Hempfield Township are located on the Lancaster quadrangle. One of these is a single component Archaic period site. The other is a multi-component prehistoric site that contains a Late Archaic and a Late Woodland occupation.

"Statistically, the numerous sites already recorded for Lancaster County cover the Paleoindian (pre-8000 B.C.) through historic periods, including every size site from small camps to large complex towns. Approximately one-fifth of the recorded sites are multi-component, covering more than one time period. There is a high potential for the presence of stratified sites containing several of these periods in separate layers in areas with deep soil deposits. These types of sites are extremely important to our understanding of changing cultural adaptations and are usually determined eligible to the National Register of Historic Places.

"Paleoindian sites are the rarest type known in Pennsylvania, numbering only around 230 for the entire state. Twelve of these sites are found in Lancaster County. They represent the evidence of the first human inhabitants of the area and date before 8000 B.C.

"The Archaic period, lasting in this area from about 8000 B.C. to 1000 B.C., is well represented among the recorded sites. It is a period of population increase and diversification in response to changing environmental conditions. This period tends to be represented by small sites associated with short-term occupation or specific activities. They are often found along the smaller streams, near springheads, or as one component of multi-component sites in any setting. The knowledge of the distribution and form of Archaic sites in this heavily populated area is very important to an understanding of changing adaptations.

"Sites from the following Woodland period (1000 B.C. - A.D. 1550) are more-often confined to settings that provide more open ground, such as floodplains, terraces, and some hilltops. They represent the presence of villages that were used for extended periods of time by larger numbers of people. This county includes sites from the relatively rarely seen Middle Woodland period as well as villages from the Late Woodland Shenks Ferry Culture and the Protohistoric Susquehannock Culture. These sites contain a wide variety of archaeological remains and are the most useful type of site for examining prehistoric social organization. For this reason they are usually determined eligible to the National Register. Four of them are currently listed on the Register."

Based upon this information, PHMC also rendered a map of the Township to depict areas of known and/or suspected archaeological significance. These areas are highlighted on the Cultural Features Map found on page 39. Local ordinances should require the protection and/or surveying of significant archaeological resources. Developers should coordinate preliminary site surveys with the PHMC prior to the substantial excavation or development of a site. The mapped archaeological resource areas should be used as a "triggering-mechanism" for some archaeological investigation prior to development.

IV. DEMOGRAPHIC STUDIES



The allocation of municipal resources must consider the population to be served. Obviously, the overall size of a population is related to the amount of services or planned growth area that must be provided. In addition, particular groups within the population have different service needs. This section will present past, current, and expected population statistics. In addition, a description of family, housing, and socioeconomic characteristics will be presented.

A. HISTORIC POPULATION GROWTH

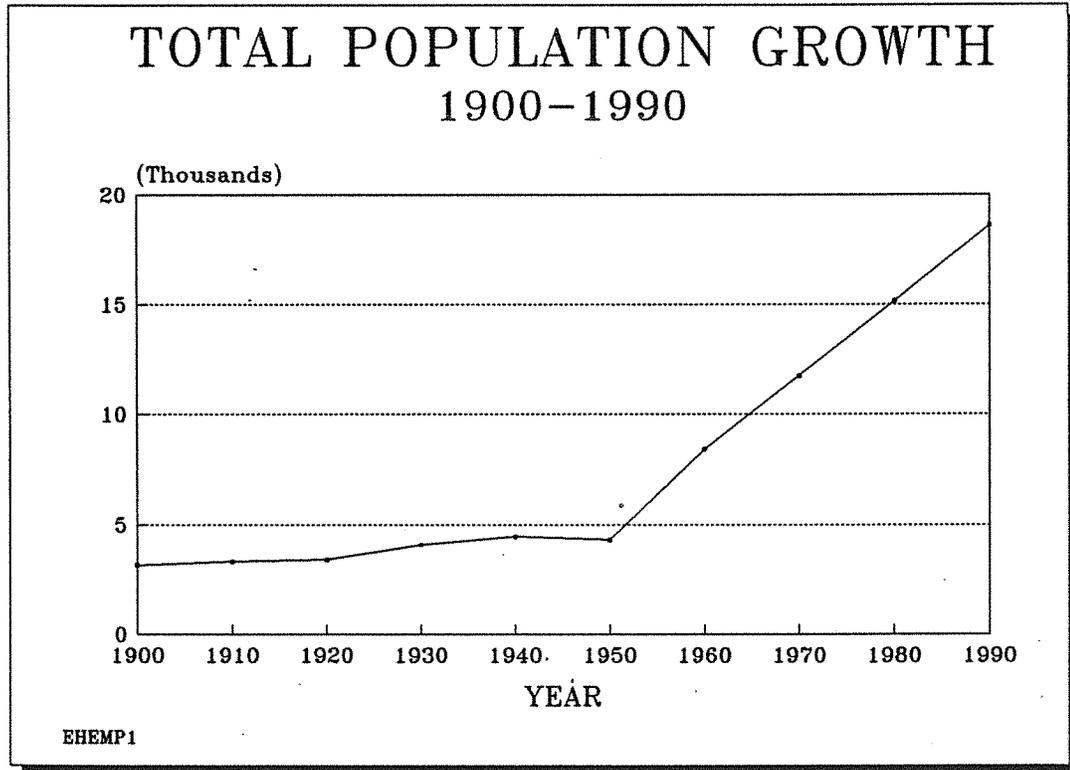
The historical growth patterns of a municipality can provide some insight as to the growth which might be expected in the future. The following table lists the amount of population growth that has occurred since the turn of the century.

Total Population Growth			
Year	Total Population	Net Change	Percent Change
1900	3,168	—	—
1910	3,327	159	5.0%
1920	3,408	81	2.4%
1930	4,095	687	20.2%
1940	4,462	367	9.0%
1950	4,322*	-140	-3.1%
1960	8,417	4,095	94.7%
1970	11,739	3,322	39.5%
1980	15,152	3,413	29.1%
1990	18,597	3,445	22.7%

Source: U. S. Census Bureau

*A portion of East Hempfield Township was incorporated into the creation of East Petersburg Borough in 1946.

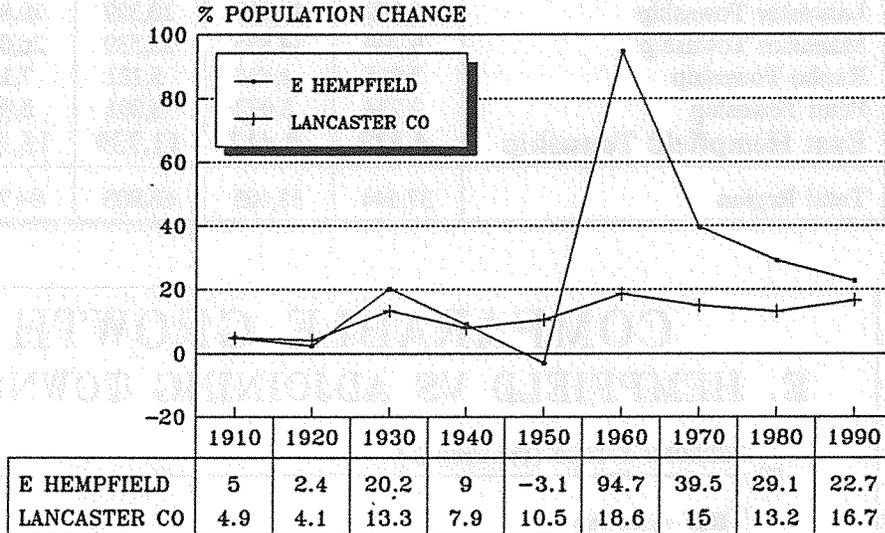
The line diagram below illustrates this historic growth rate:



As the preceding graph reveals, East Hempfield's growth has had two distinct periods during this century. The first half saw the Township's population experience slow but steady growth, which eventually leveled off during the 1940's. Generally, however, the population ranged between 3,000 and 4,500. Since 1950, a different trend has emerged. Dramatic population growth has occurred in each decade since 1950. Overall, this growth has resulted in more than a quadrupling of total residents in East Hempfield Township. During the 1950's and 1960's the Township's growth followed the national "baby boom" trends. In the 1970's and 1980's, the growth is probably related to Countywide or other local development patterns.

A comparison of the Township's and County's population growth trends provides further insight to the regional factors affecting local growth. The following graph represents the population percentage increases by decade for East Hempfield Township and Lancaster County.

COMPARABLE GROWTH E HEMPFIELD VS LANCASTER CO

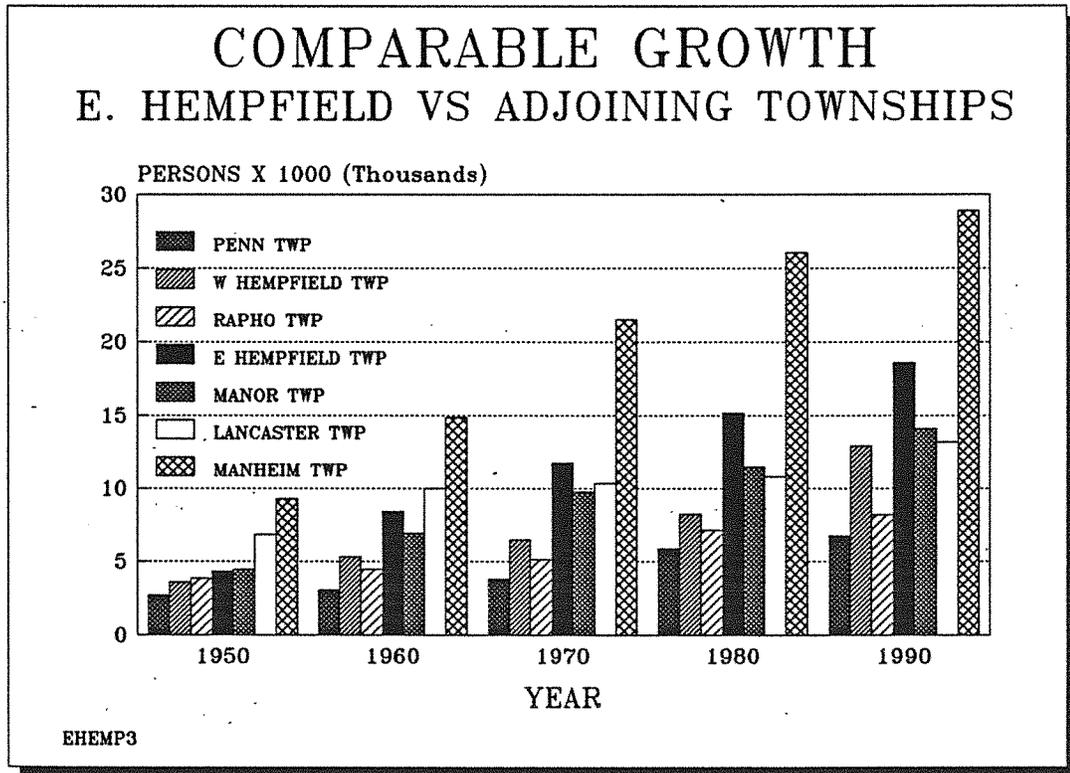


EHEMP2

The above graph indicates that East Hempfield followed the County population trends from 1910 to 1940. During the 1940's, East Hempfield's population declined in comparison with the rest of the County. After 1950, however, the Township's tremendous growth has completely outpaced that occurring within Lancaster County as a whole. This trend is typical to suburbanizing municipalities whose large population gains account for much of the County's growth, while outlying rural areas typically experience minor growth, and urban municipalities (city and boroughs) alternate between minor gains and losses. The Township's recent growth explosion testifies to the importance of updating local planning information, goals, and policies, so as to effectively manage newfound development pressures and impacts.

A comparison of the growth in East Hempfield Township with other adjoining townships can provide insight to the development influences and pressures that have been realized in the immediate area. These insights could offer a glimpse of the magnitude of development pressure that might be expected during the next decade. The following table and histogram report population counts for those townships that adjoin East Hempfield Township.

Municipality	1950	1960	1970	1980	1990
West Hempfield Township	3,578	5,318	6,505	8,239	12,942
Manor Township	4,461	6,939	9,769	11,474	14,130
Lancaster Township	6,859	10,329	10,329	10,833	13,187
Manheim Township	9,289	14,855	21,539	26,042	28,880
Rapho Township	3,865	4,484	5,121	7,157	8,211
Penn Township	2,734	3,072	3,801	5,865	6,760
East Hempfield Township	4,322	8,417	11,739	15,152	18,597
Total Region	37,644	53,105	68,803	84,762	102,707



More specifically, the following table ranks those adjoining townships by net growth between 1950 and 1980.

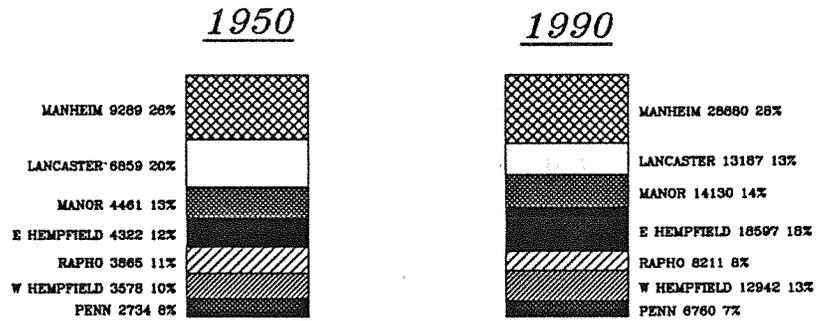
1950 to 1990 Population Change		
Municipality	Net Change (Persons)	Percentage Change
Manheim Township	19,591	211%
East Hempfield Township	14,257	330%
Manor Township	9,669	217%
West Hempfield Township	9,364	262%
Lancaster Township	6,328	92%
Rapho Township	4,346	112%
Penn Township	4,026	147%
Total Region	65,063	173%

As the table reveals, slightly less than 22% of all of the development occurring within the region was located in East Hempfield Township. This, combined with the 30% of the region's development occurring in Manheim Township, indicates that over half of the region's development has occurred within two adjacent municipalities. It is not surprising to see that the suburban development occurring north and west of Lancaster City was at the expense of a 14% decline in the City's population.

The following table and bar chart illustrate the percentage proportion comprised within East Hempfield Township, and each of its neighboring townships, according to 1990 population counts.

Shift Share Analysis East Hempfield Township vs. Adjoining Municipalities 1990 Population		
Municipality	1990 Population	Percent of Region
Manheim Township	28,880	23%
East Hempfield Township	18,597	18%
Manor Township	14,130	14%
West Hempfield Township	12,942	13%
Lancaster Township	13,187	13%
Rapho Township	8,211	8%
Penn Township	6,760	6%
Total Region	102,707	100%

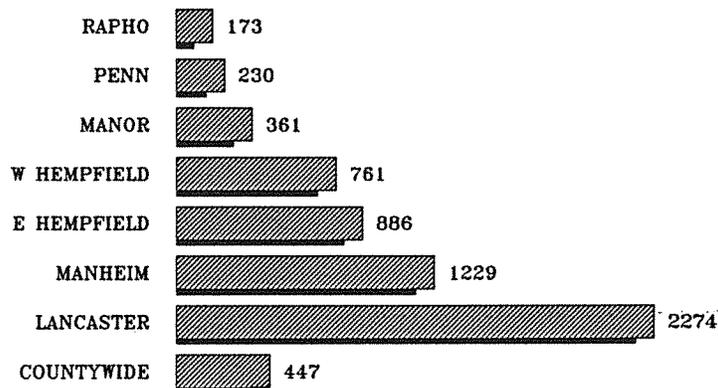
SHIFT SHARE ANALYSIS E HEMPFIELD VS ADJOINING TWPS



EHEMP4

Presently, East Hempfield Township accounts for about 18% of the population in this local region, and ranks second behind Manheim Township. More importantly, however, East Hempfield Township gained 6% more of the region's population between 1950—1990. The following bar chart illustrates the respective densities of adjoining townships; East Hempfield's density in 1990 was estimated to be 886 persons per square mile. This placed the Township third among the seven townships comprising the local region, and almost twice that of the Countywide average.

1990 COMPARABLE DENSITIES ADJOINING TOWNSHIPS PERSONS/SQ.MI.



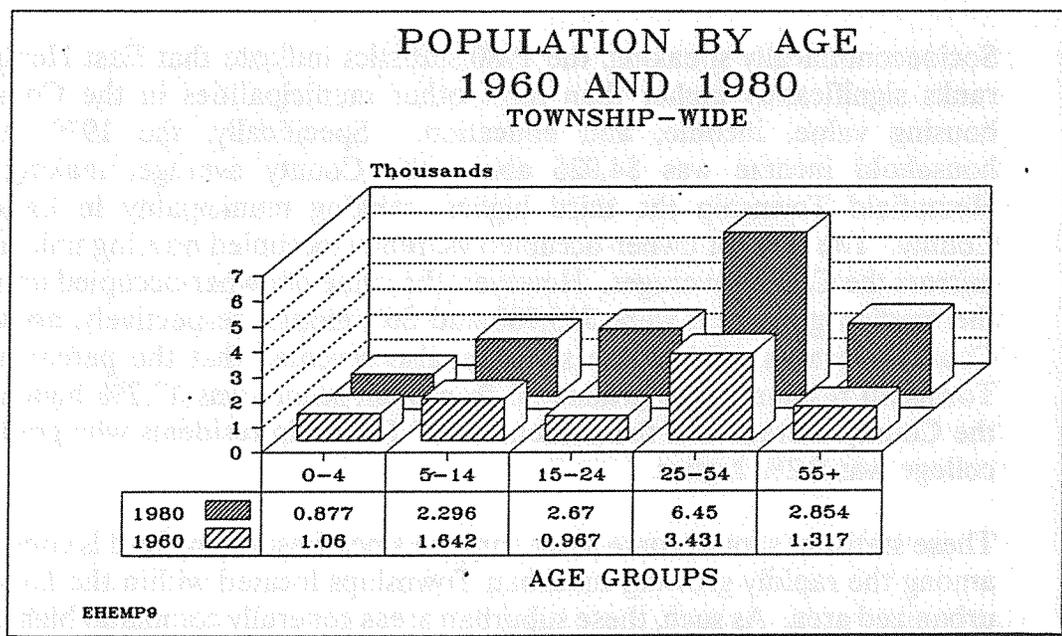
EHEMP5

B. SOCIOECONOMIC DATA

The following tabulates 1980 Census information for the Township pertaining to age, income, housing, education, and employment.

Population Counts by Age Group (Township-wide) 1960 Total Population 8,417			
Age Groups	Total	Percent of Total	Females
0-4	1,060	12.6	543
5-14	1,642	19.5	839
15-24	967	11.5	515
25-54	3,431	40.8	1,735
55 & Over	1,317	15.6	698

Population Counts by Age Group (Township-wide) 1980 Total Population 15,152			
Age Groups	Total	Percent of Total	Females
0-4	877	5.8	434
5-14	2,296	15.2	1,151
15-24	2,670	17.6	1,344
25-54	6,450	42.5	3,238
55 & Over	2,854	18.8	1,534



As this graph indicates, the population of East Hempfield Township has grown progressively older between 1960 and 1980. The largest single change was a 176% increase in persons between the ages of 15 and 24, followed by a 117% change in persons 55 years and older. The third largest change was an 88%

increase in those between 25 and 54 years of age. A 40% increase was recorded by the 5 to 14 year old age group. Finally, the 5 year old and under age cohort witnessed a decline of 17.3% between 1960 and 1980.

Generally, the 25-54 year old cohort continues to be the largest single age group within the Township, despite the large percentage changes posted by the two adjoining age groups between 1960 and 1980.

	Township	Lancaster County
<u>Income Data</u>		
1979 median household income	\$21,961	\$17,935
1979 per capita income	\$8,876	\$7,089
Number of families below 1979 poverty level (%)	3.0%	5.3%
<u>Housing Data</u>		
Percent of housing units that are owner-occupied	67.6%	68.7%
Percent of housing units that are renter-occupied	32.4%	31.3%
1980 median value of owner-occupied units	\$62,900	\$47,200
1980 median gross rent of renter-occupied units	\$243/mo.	\$180/mo.
<u>Education Data</u>		
Persons 25+ years old and high school graduates	77.3%	59.6%
Persons 25+ years old with 4+ years of college	22.2%	13.0%
<u>Employment Data</u>		
Unemployed persons 16+ years old (%)	295 (2.5%)	7,491 (2.7%)
Disabled persons aged 16 to 64 years old (%)	173 (1.7%)	6,414 (2.7%)

Socioeconomically speaking, the 1980 statistics indicate that East Hempfield ranks significantly higher than most other municipalities in the County in housing value, income, and education. Specifically, the 1979 median household income was \$4,026 above the County average, making East Hempfield Township the third highest ranking municipality in Lancaster County. The ratio of owner-occupied vs. renter-occupied housing units nearly mirrors the County averages. However, the value of owner-occupied units and the median gross rent were \$15,700 and \$63/month, respectively, above the County averages. Education statistics also revealed that the percentage of Township residents who graduated from high school was 17.7% higher than the County average and the percentage of Township residents who graduated college was 9.2% higher.

These statistics should come as no surprise since East Hempfield is considered among the rapidly growing suburban Townships located within the Lancaster urbanized area. As such, these suburban areas generally command higher land values than do rural townships, which in turn dictates, to a large degree, who can afford to live there.

C. POPULATION PROJECTIONS

Population projections are important to the future allocation of parkland and delivery of recreation services. The projections become a building block that will be used repeatedly to forecast future spatial and service needs. Consequently, great care must be exercised to assure these figures represent the "best guess" as to how the Township will grow.

It is important to understand that no population projection can accurately forecast all of the factors that might cause a particular rate of growth. Instead, historical trends are analyzed and compared with perceived current trends to see how accurately they predict recent data; then, the most accurate method is used to predict future conditions.

Four different population projection techniques were applied to the Township's historic trends; each of these will be summarily discussed, and one will be selected for use.

Method 1 (Lancaster County Planning Commission Projection)

In May, 1984 the Lancaster County Planning Commission produced a set of population projections for each of the County's municipalities. This method calculated a Countywide projection (using a cohort-component method) and then assigned a ratio of the growth based upon each municipality's proportion of the 1980 County population. The following tabulates the resulting projections for East Hempfield Township.

<u>1990</u>	<u>2000</u>	<u>2010</u>
19,010	22,620	25,930

Method 2

This method uses a geometric extrapolation projection technique. It forecasts a growth rate based upon historical population trends. By analyzing the percentage increases recorded in the Township since 1950, it was determined that the Township has grown by an average of 46.5% during each decade. This technique assumes that the Township will grow at an average rate similar to that experienced since then. By applying this growth rate to the 1989 school census figures, the following projections result:

<u>1990</u>	<u>2000</u>	<u>2010</u>
18,597	27,245	39,913

Method 3

This method employs the geometric extrapolation and shift-share projection techniques. Specifically, East Hempfield Township's and its neighboring municipalities', excluding Lancaster City, historic growth rates (1950 - 1990) were totaled and extrapolated. Then East Hempfield Township's proportional share of 1990 total population (18%) was applied to each of the population

projections for the region. This method assumes that the same growth and development influences that have been affecting those municipalities that adjoin, will directly affect the Township.

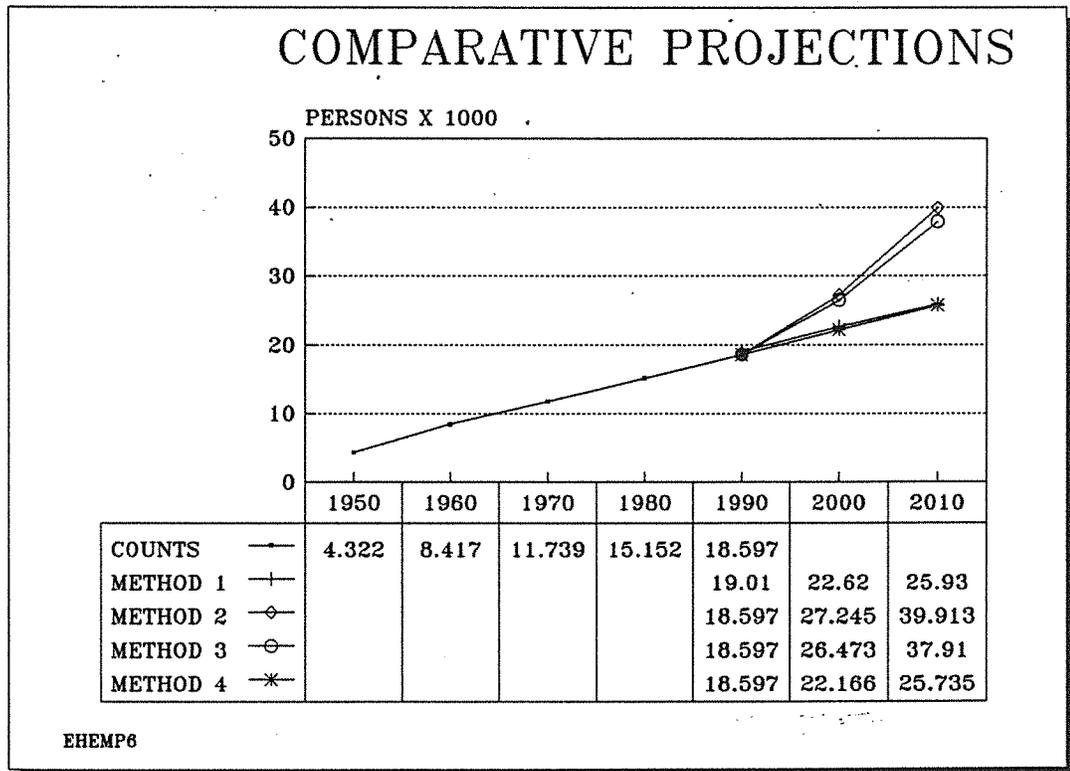
<u>1990</u>	<u>2000</u>	<u>2010</u>
18,597	26,473	37,910

Method 4

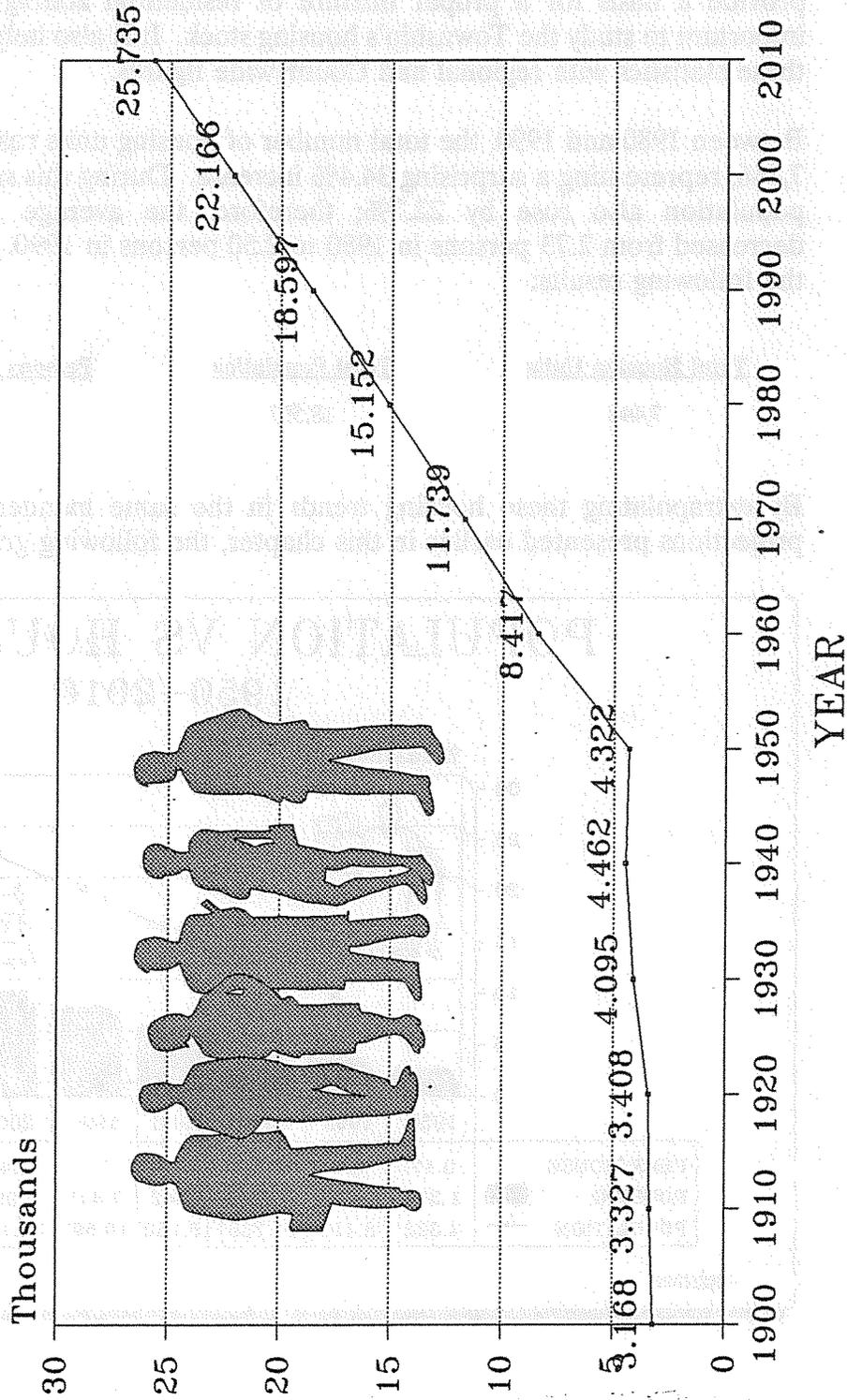
This method relies upon an arithmetic extrapolation projection technique. It forecasts growth at the same numeric levels as the past. Specifically, it was calculated that an average of 3,569 new residents have been added to East Hempfield Township in each decade since 1950. This same net increase is then added to the 1990 population figure, yielding the following projections.

<u>1990</u>	<u>2000</u>	<u>2010</u>
18,597	22,166	25,735

Each of the results of these four projections has been plotted along with the Township's historical growth patterns. From the following graph, it is easier to visualize a "natural" growth curve for the Township. The full-size graph on the next page plots the Township's historic growth patterns and the most reliable population figures derived from Method 4.



POPULATION COUNTS/PROJECTIONS 1900 THRU 2010



EHEMP8

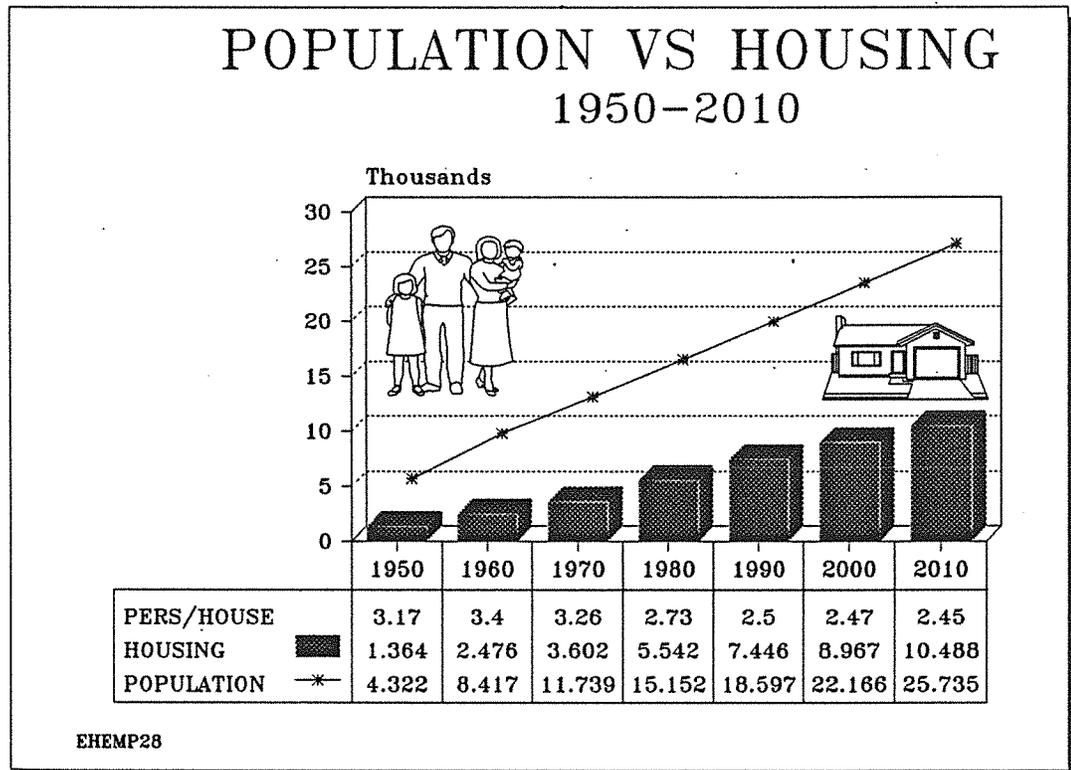
D. HOUSING ANALYSIS

To assure that a wide range of housing opportunities are available, and to provide a basis for a proper mixture of residential zoning densities, it is important to study the Township's housing stock. It is also helpful to compare these statistics with regional and Countywide figures.

Between 1980 and 1990, the total number of housing units rose from 5,542 to 7,446, representing a surprising 34.4% increase. During this same period, the population also rose by 22.7%; therefore, the average household size decreased from 2.73 persons in 1980 to 2.50 persons in 1990. This produced the following results:

<u>Total Housing Units</u>	<u>Total Population</u>	<u>Persons Per Household</u>
7,446	18,597	2.50

By extrapolating these housing trends in the same manner as population projections presented earlier in this chapter, the following graph results:



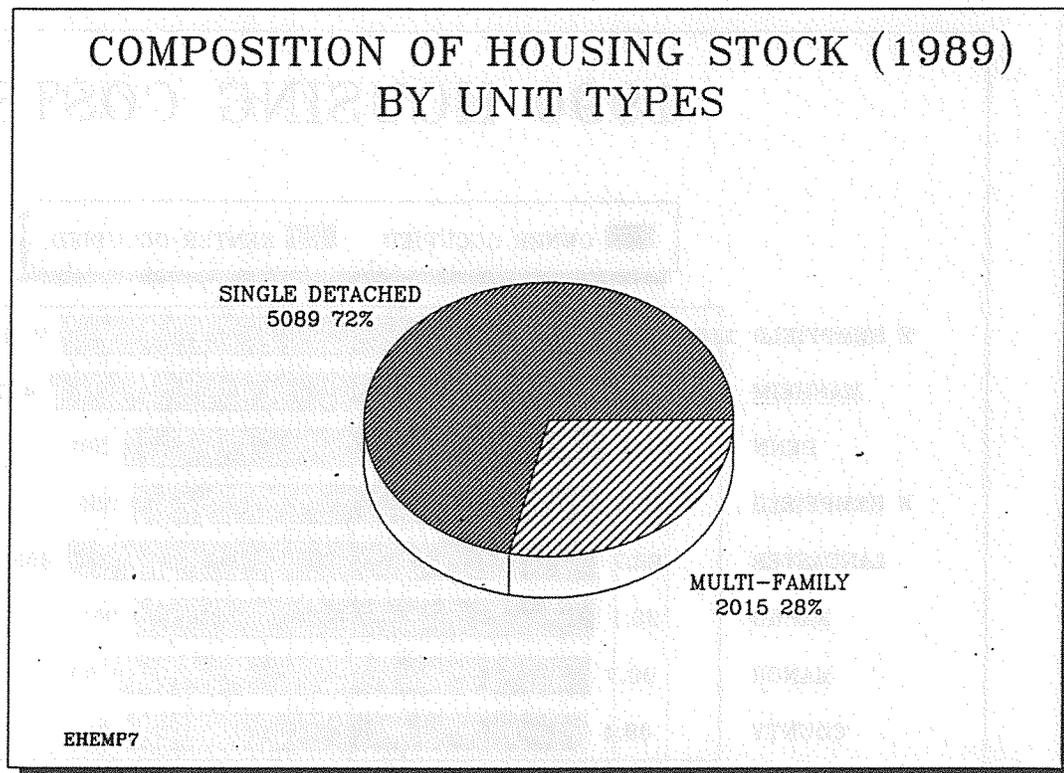
This graph suggests that the number of dwelling units created will continue to proportionately outpace population growth. Accordingly, average household size will continue to decrease slightly.

The 1980 Census (1990 data not yet released) reported 5,542 total occupied housing units within the Township, of which 1,798 (32.4%) were rental units.

Within Lancaster County, 31.3% of all occupied housing units are rented; therefore, East Hempfield Township had slightly more rental units than the average Lancaster County municipality.

By using U. S. Census Bureau Annual Building Permit Reports (1980—1990), it is estimated that East Hempfield Township has the following ratio of detached and multiple-family housing units, as compared with Lancaster County:

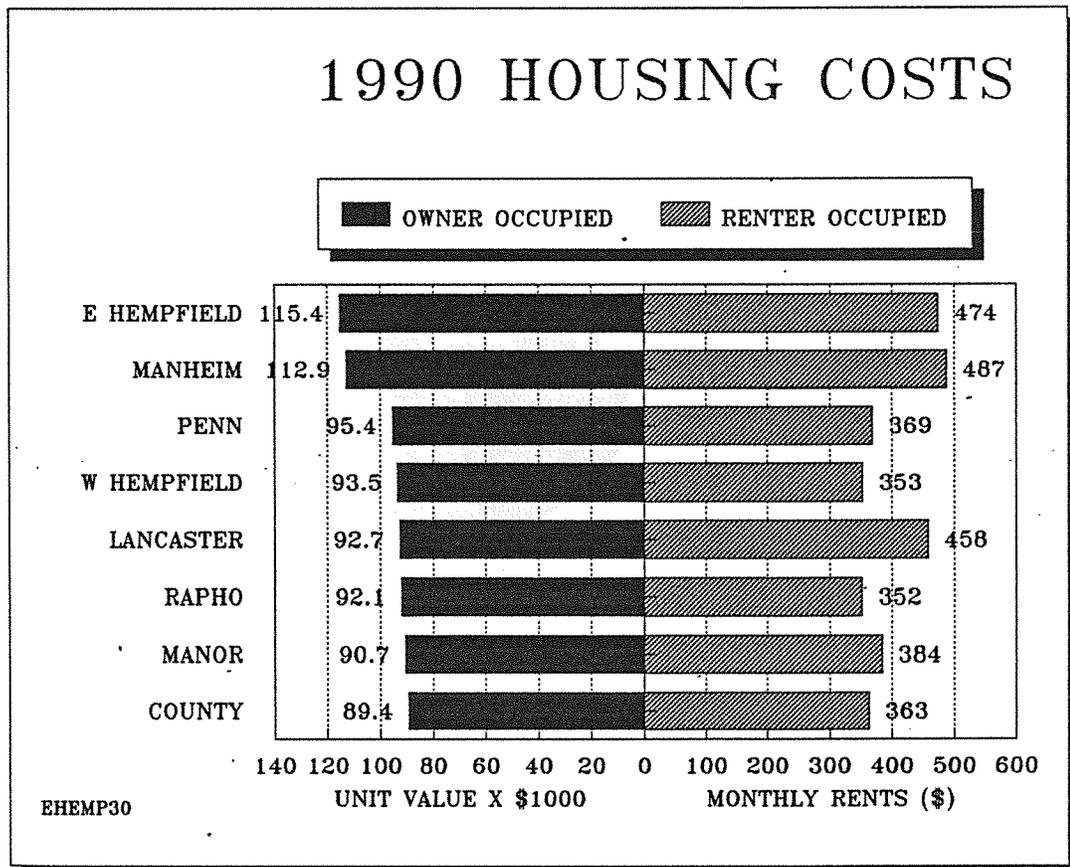
	<u>East Hempfield Township</u>	<u>Lancaster County Townships</u>	<u>Lancaster County</u>
Single-family detached units (including mobile homes)	5,089 (71.6%)	77,798 (76%)	99,210 (63.6%)
Multiple-family dwellings	2,015 (28.4%)	24,522 (24%)	56,879 (36.4%)



While the preceding information is not exact (as it assumes that all issued permits were "built-out"), it nonetheless provides some insight regarding local and Countywide building trends. As can be seen, East Hempfield Township's percentage of multiple-family dwellings surpasses that of the average Lancaster County township. Conversely, when the boroughs and City are reflected, East Hempfield Township's ratio of multiple-family dwellings fall short by 8%.

The following lists 1990 median values of owner-occupied housing units and median rents for renter-occupied units for East Hempfield, its neighboring townships, and Lancaster County.

Municipality	Owner-Occupied Median 1990 Housing Value	Renter-Occupied Median 1990 Rent/Month
East Hempfield Township	\$115,400	\$474
Manheim Township	\$112,900	\$487
Penn Township	\$ 95,400	\$369
West Hempfield Township	\$ 93,500	\$353
Lancaster Township	\$ 92,700	\$458
Rapho Township	\$ 92,100	\$352
Manor Township	\$ 90,700	\$384
Lancaster County	\$ 89,400	\$363



Within the local region, East Hempfield Township has the highest median value for owner-occupied housing. In fact, only rural Colerain Township recorded higher owner-occupied housing values within Lancaster County. The median value of owner-occupied housing within East Hempfield Township is \$26,000 (29%) higher than all of Lancaster County.

Median monthly rents for East Hempfield Township ranked second within the local region and Lancaster County, behind Manheim Township. Again, renters within East Hempfield Township pay \$111 (30.5%) more per month than do those within Lancaster County, on average.

To promote more affordable housing for the future, several planning guidelines are offered. First, newer design schemes for higher density detached, attached, scattered site, and multiple-family can achieve a "livable" setting, while reducing associated development costs. Zero-lot-line detached units, neo-traditional village design, accessory building apartments, and cluster housing are all residential design concepts that can provide amenity at lower per unit costs.

Second, local officials may wish to rethink many land development design standards that have evolved in recent decades, based upon society's sole dependence upon automobile transportation. With neo-traditional designs, many of today's land development standards are excessive, and consumptive, which contribute to increased housing prices and rents. In appropriate locations, it may be beneficial to employ design standards that are more geared toward pedestrian movements, rather than automobile movements. Consequently, street and right-of-way and cartway widths, turning radii, and zoning yard setbacks and lot sizes can be lessened, all of which should reduce development costs.

Third, inclusionary zoning provisions can be implemented to assist in the availability of affordable housing. By requiring developers to include within their developments a prescribed percentage of homes built for low and middle income households, additional affordable housing can be provided.

Local officials are urged to consider all of these preceding techniques in assisting to meet the increasing demand for moderately-priced housing.

V. EXISTING LAND USE



An important element of any comprehensive planning effort is the inventorying of existing land uses. The historical mapping of land use activities provides periodic gauging of development trends within the Township. Next, the character of existing land uses furnishes insight as to the quantities and types of land uses that are desired by the public or have market demand. Finally, existing land use studies and associated maps provide valuable assistance in the identification of future development areas. All of these considerations are fundamental to the formulation of a future land use scheme and regulatory policies that respond to the Township's goals and objectives.

To provide a detailed land use inventory, several information sources were utilized. First, 1989 Lancaster County property tax records were researched and the information was mapped yielding a lot-by-lot inventory of land uses. Second, a windshield survey was conducted in December, 1989, to field check and verify the information obtained from the tax records. Finally, this land use inventory was reviewed by local officials in order to assure further accuracy. The following analysis and discussion describes the categories used to inventory and report existing land uses. The Existing Land Use and Adjacent Planning Map, located on page 68, illustrates the findings of this analysis.

A. AGRICULTURE

Agricultural land uses appear to be highly concentrated in those areas of the Township north of PA Route 283. However, there are other areas within the Township that have concentrations of agricultural activity, particularly the east-central portion of the Township between U. S. Route 30 and PA Route 283.

In those areas south of PA Route 283, agricultural activity continues to dot the landscape amid vast residential, commercial, and industrial developments. However, the individual agricultural uses located in this area are small and appear likely to be swallowed up by ever-increasing surrounding development.

Agricultural land uses that continue to operate engage mostly in crop production, but there are some farms specializing in livestock, dairy, and poultry production. Also included within the agricultural category are accessory agricultural uses. These uses include farm buildings and dwellings, roadside

stands, bed and breakfasts (if contained on a farm), and secondary businesses that are run by farmers to supplement their income.

Finally, many of the farms contain nineteenth century farmhouses that have varying degrees of historic architectural significance that contribute to the feeling of a once dominant agrarian society. Attempts at preserving this feeling, as well as the rural/agricultural landscape found within parts of the Township, would also contribute to the historical integrity of these buildings and their environs.

B. SINGLE-FAMILY RESIDENTIAL

This category contains single-family detached dwellings on individual lots (including freestanding mobile homes).

While the land area north of PA Route 283 is dominated by agriculture, the land area south of the highway is dominated by single-family residential development.

East Hempfield Township has become the third most populous municipality in Lancaster County due to its tremendous increase in residential development during the past several decades. The largest concentrations of residential development are located in the western, central, and southeastern portions of the Township. Several important factors have contributed to this tremendous increase in suburban residential development since 1950. First, East Hempfield Township shares a close proximity to Lancaster City, which affords existing and would-be residents a short commute to the region's major employment center. In addition, abundant commercial, recreational, and social opportunities are located within the City's urbanized area. With such close proximity to Lancaster City and its urban benefits, East Hempfield Township appears attractive to people who want to live in a suburban or rural-type environment, but who also want to be close to the economic and social hub of the region.

Another important factor which enhanced the attractiveness of East Hempfield Township during the 1950's and 1960's was the construction of the U. S. Route 30 Bypass and PA Route 283. These two expressways traverse through the Township and quickly and effectively link the majority of the Township with other parts of Lancaster County, as well as interstate highways and points beyond the region. The major access routes into downtown Lancaster City, which include Columbia Avenue, Marietta Pike, Old Harrisburg Pike, and Manheim Pike, among others, also pass through the Township, making accessibility to the City quite manageable. This transportation network formed the main arteries within the Township to which new subdivisions radiating were linked.

As demand for residential development began to increase, the need to provide public sewer and water also rose. Sewer and water infrastructure was laid down throughout the southern and central part of the Township, in response to the

increase in proposed residential development. As a result, in order to make the initial infrastructure construction cost effective, new residential units were encouraged to be constructed and connected to the service lines of both public sewer and water. In order for this to happen, liberal development policies were implemented so that residential construction was encouraged to occur in many parts of the Township.

These factors combined, not to mention that much of the Township possesses excellent development conditions, have contributed to the overall and continued residential development explosion that has occurred over the last several decades.

Prior to the boom in residential development, which began in the 1950's, there were several established villages with concentrations of single-family dwellings.

Landisville is the largest of these villages and still contains a significant number of older single-family residences, ranging from large Victorian mansions to ranch homes, tightly situated on a grid-style street pattern. Salunga village is adjacent to Landisville and contains similar type dwelling units. Rohrerstown is another older established village centered on the intersection of Rohrerstown Road and Marietta Pike. Rohrerstown, like Landisville and Salunga, contains a very dense residential community interspersed with commercial and public land uses. These villages represent the residential, social, commercial, and governmental centers of the Township prior to 1950. In many ways, they still retain their prominence within the Township as mixed use centers with single-family residential uses still predominant.

The remaining single-family residential development within the Township is primarily characterized as post-World War II planned subdivisions. In the southeast corner of the Township there are several distinct but contiguous neighborhoods. The Wheatland Hills neighborhood is located just behind the first block of Columbia Avenue's commercial strip. It extends from the Jamesway Plaza east to Conestoga Boulevard, and north to Brubaker Run. This neighborhood is characterized by older housing units situated along tree-lined avenues. There is a newer extension of this neighborhood closer to Brubaker Run. This newer area is characterized by loop roads and cul-de-sacs with slightly larger residential lots.

North of the Wheatland Hills neighborhood is the exclusive neighborhood of School Lane Hills. Built during the late 1970's and early 1980's, this neighborhood is characterized by estate-like, Colonial style homes on large lots fronting loop roads and cul-de-sacs. Farther north and on the other side of Marietta Avenue is the large Barrcrest development and Gentry Heights subdivision. This neighborhood is well established with homes that range in age from 15—40 years old and that are typically characterized by split-level and two-story Colonial-style architecture.

Just north of the village of Rohrerstown are the small subdivisions of Sharon Park and Hidden Acres. Sharon Park, located just east of Rohrerstown Road

and south of U.S. Route 30, contains approximately 30 older single-family dwellings arranged on a small but tight street network. Across Rohrerstown Road is the small subdivision of Hidden Acres. This neighborhood was developed during the late 1970's and consists of split-level and two-story Colonial homes situated on a winding road ending in a cul-de-sac. Southwest of Rohrerstown is the Running Pump subdivision located at Running Pump Road and Columbia Avenue. This large subdivision is similar to the Wheatland neighborhood in terms of the age and style of the housing units. The neighborhood is somewhat isolated in that it is surrounded by nonresidential land uses on all four sides.

Other concentrations of single-family residential land uses located south of U. S. Route 30 include two small neighborhoods located on cul-de-sacs extending off Columbia Avenue just west of Centerville Road. There are also older homes stripped along Columbia Avenue between Donnerville Road and Centerville Road.

The vast majority of East Hempfield Township's recent (post-World War II) single-family residential development is located in the central part of the Township sandwiched between PA Route 283 and U. S. Route 30.

Between Marietta Pike and Spring Valley Road nearly all the land is devoted to single-family residential development. Included in this area are the developments of Chestnut Ridge, Chestnut Hill, and Cherry Hill. These housing developments are situated amid the semi-wooded slopes of Chestnut Hill. Much of the housing in these developments is characterized by homogeneous styles consisting primarily of split-level and two-story Colonial-style homes, with the units ranging in age from 5 to 30 years. There are, however, more upscale and innovative housing styles found in groups and interspersed among and between the larger more homogeneous housing developments. The street system in this area is comprised of long and winding loop roads with many radial cul-de-sacs.

North of this general area, between Spring Valley Road and Nolt Road, are several more subdivisions. Chestnut Valley is situated in the eastern portion of this area. This development contains upscale single-family homes which are primarily two-story frame Colonials, again situated on loop roads and cul-de-sacs. To the West of Chestnut Valley is the School Lane Hills Estates development. This neighborhood was developed by the same developers of School Lane Hills, located in the southeast corner of the Township. Like that development, School Lane Hills Estates contains exclusive estate-like two-story frame and brick Colonial homes. The street network within this neighborhood is dominated by loop roads and cul-de-sacs. The housing units in Chestnut Valley were built between the late 1970's and late 1980's, and the units located in School Lane Hills Estates were built in the late 1980's and continue to be constructed today.

Farther north and west along Nolt and Centerville Roads are several more residential subdivisions. The Hilltop development straddles both sides of Nolt

Road and contains a large number of modest single-family homes that were built during the mid- and late 1970's. The street network within this development is characterized by loop roads named for famous authors. North of the Hilltop development are two very exclusive developments called Chapel Forge and Getz's Woods. These developments are characterized by large estate-like homes with both traditional and innovative architectural styles. Getz's Woods, as its name implies, is situated amid a heavily wooded area. Both developments contain winding loop roads and cul-de-sacs. The houses located in these developments were built during the early to late 1980's. The Chapel Forge development extends across Centerville Road to include approximately 20–30 housing units. These units are not as exclusive as the others found within the remainder of the development.

West of Chapel Forge and Getz's Woods is the large development of Millmar. The Millmar development generally encompasses the area between Bowman, Nissley, Nolt, and Centerville Roads. Within this development there are approximately 100 or more modest, single-family split-level and two-story Colonial homes. The Millmar development extends westward across Nissley Road to encompass a large area between Bowman and Nolt Roads. There appears to be two different phases of development within this area. The first phase is located close to the intersection of Nolt and Nissley Roads. This phase is characterized by smaller, modest split-level and ranch single-family homes situated on smaller lots; this phase was built prior to 1975. The second phase is characterized by larger homes. The architectural styling is primarily two-story Colonial. The entire Millmar development area constitutes one of the largest concentrations of single-family residential development within the Township.

South of the Millmar area in the southwest corner of the intersection of Nolt and Nissley Roads is the Aquilla Gardens development. This development is similar in character to the first phase of the Millmar development described previously.

Adjacent, and to the south of the East Hempfield Township Sports Complex is the large Indian Springs Estates and the smaller Raleigh Ridge developments. The Indian Springs Estates development was built during the mid- and late-1980's and consists of both small split-level and Cape Cod-style homes, as well as larger Colonial homes, particularly those fronting the golf course. Raleigh Ridge is a small development consisting of large, two-story Colonial homes situated on a hillside.

North of the Sports Complex, and just west of Church Street, is another large residential subdivision called Millcreek. This development was built during the late 1950's and early 1960's. It is characterized primarily by ranch homes situated on small lots. Just west of Millcreek is a new development called Highland Greens. Highland Greens is characterized by split-level and Colonial homes.

Located northwest of the intersection of Bowman Road and Harrisburg Pike is a recently built development called Hoffman Heights. This development is

comprised of two-story Colonial homes. The street network consists of two arced roads with several cul-de-sacs radiating off the outer road. North of Hoffman Heights are the large Parkside and Scotland Estates developments. These developments are located along the south side of the Harrisburg Pike. Parkside was built during the late 1970's and early 1980's and is characterized by many split-level and some two-story Colonial homes. Directly across the Harrisburg Pike from the Parkside development is the recent development of Old Forge Crossing. This development was constructed between 1989 and 1991. This development contains approximately 50 single-family homes of Colonial style situated on an internal loop road.

North of PA Route 283, there is only one planned subdivision located just east and adjacent to East Petersburg Borough. This small development contains approximately 30 modest homes of slightly varying architectural style. The remaining portion of the Township, north of PA 283, consists of only scattered single-family residences which are stripped out along several of the Township's roads.

This existing single-family residential development accounts for more than 50% of the total land area south of PA Route 283. The majority of this development occurred during the 1970's and 1980's. As a result, tremendous pressure has been placed upon the Township's infrastructure and municipal services, and related commercial and industrial services.

C. MULTI-FAMILY RESIDENTIAL

This category includes residential development of higher densities, including apartments, townhouses, and mobile home parks. During the last two decades, multi-family residential development has become a vital part of the nation's housing stock. Lancaster County, too, has experienced an increased reliance on this form of residential development. In the past, multi-family housing was considered by many as "undesirable" rental housing; however, recent advances in design and construction of these types of units has yielded a rethinking by the public. Furthermore, the ever-increasing costs of housing have similarly fostered a greater acceptance of multi-family units among those who cannot afford the high costs associated with the purchase and maintenance of a single-family detached dwelling.

East Hempfield contains several large multi-family residential developments. Some are rental units comprised of garden-style apartments, some are upscale townhouse developments, still others consist of mobile home parks and a nursing/retirement village.

First, the largest concentration of garden-style apartments is located in the east-central portion of the Township. Along McGovernville Road (PA Route 741), between the Harrisburg Pike and the Township line, there are three separate large multi-family housing developments adjoining each other. Meadow Green Estates is situated on both sides of McGovernville Road and consists of 364

garden apartments. Adjacent to Meadow Green Estates is Town and Country West Apartments and Townhouses. This high density development was built during the early 1970's and consists of 357 garden-style apartments and 56 townhouses. Finally, the large multi-family development of Colebrook Apartments is located adjacent to the Town and Country Apartments. This development contains 342 garden apartments.

In the southeast corner of the Township, within the Barrcrest neighborhood, is Barrcrest Manor Apartments. There are 84 apartments contained in two mid-rise apartment buildings situated along the Little Conestoga Creek. These apartments appear to have been built during the 1950's. Also located within the Barrcrest neighborhood is the Windsor Court Townhouse development. This multi-family development consists of 126 townhouse units set within a tightly-knit, but secluded, neighborhood along the Little Conestoga Creek. Located in the southwest corner of the Township, just east of the intersection of Centerville Road and Marietta Pike, are the Cherry Hill Villas Apartments and Townhouses. This rather unique villa-like high density development contains 18 efficiencies, 87 garden apartments, and 21 townhouses. This complex appears to have been built during the early 1970's.

There are two large projects located in the central part of the Township. Both of these projects adjoin one another on Nolt Road. The first project is called Country Place. Country Place is a luxury condominium development. This condominium development was built in the late 1980's. The second, and much larger project, is the Tree Tops Condominiums. These condominium units are situated on a looping street network replete with cul-de-sacs. Tree Tops was constructed during the mid- and late-1980's.

A third type of multi-family residential land use found within the Township is the mobile home park. Mobile home parks occur much less frequently in the Township than do other forms of multi-family development. There are approximately three mobile home parks located in the Township. One is located on Columbia Avenue adjacent to the east side of the Lincoln Plaza. A second is located farther down Columbia Avenue, halfway between Centerville and Running Pump Roads. Still a third one is located along Columbia Avenue just west of its intersection with Centerville Road. Two small groupings of mobile homes are located in both Landisville and Rohrerstown. It appears that there is little demand for mobile home parks within the Township, as evidenced by the fact that the existing parks were established many years ago and none have been established since then.

The Township also contains a very unique high density development. Homestead Village is a combination medical residential, retirement campus and is located on the south side of Marietta Pike, just east of Rohrerstown. This campus contains 30 cottages, 95 apartment homes, 24 personal care units, and a 60-bed skilled nursing health care center. Other medical, social, and dining facilities are also contained on the campus. The campus can be characterized as an attractive and functional neighborhood planned and designed for the elderly and retired.

Finally, the Township contains several scattered conversion two- and three-unit apartments. The largest concentrations of these can be found in the villages of Rohrerstown, Landisville, and Salunga.

D. COMMERCIAL

This category includes the Township's retail and service businesses. Commercial development within East Hempfield Township has been widely scattered, but where it has occurred, it has been intensive. There are several nodes of commercial development within the Township, each containing various types of commercial activity. The first commercial node analyzed is the area centered on the intersection of Columbia Avenue and Rohrerstown Road in the southeastern corner of the Township. The common name for this commercial node is Wheatland and it contains predominant elements of highway commercial strip development. This category of commercial development is typically most abundant along older traffic arteries, like Columbia Avenue. Highway commercial development, like the type found in Wheatland, is largely founded upon the economic principle of maximum customer exposure and accessibility. With the modern customer reliance on the automobile for mobility, prospective businesses seek their own long and shallow sites along heavily traveled roads. This lot configuration provides maximum frontage and visibility to passing motorists. Over the years, highway commercial developments tend to extend a "strip-pattern" along these roads. In turn, conflicting traffic movements occur between customers and commuters, causing traffic congestion and safety problems. Another feature of highway commercial strip development is its lack of identity as a "sense of place." Unlike village activity centers, or even planned and integrated shopping centers, highway commercial cannot point to one widely known location. Instead, each individual highway commercial business must compete with one another for its customers' attention. This results in an ever-increasing reliance on signs for advertisement, which, in turn, leads to visual clutter, distraction, and confusion for passing motorists.

mobile home parks are not multi-family dwellings

developed after World War II in response to the automobile and the suburbanization of the area. Highway commercial strip has grown to include a variety of commercial entities. The predominant form of commercial development is the access afforded by the automobile, including gas stations, car washes, grocery stores, banks, discount retail stores, drugstores, and service stations. The design and maintenance vary widely from one another, but there does appear to be a trend toward more integrated shopping centers that have just been developed at Wheatland Shopping Center and the new developments present a more modern and integrated commercial environment that encourage continued integration and

consolidation of parking areas and promote the use of shared access points so as to reduce congestion along Columbia Avenue.

A second form of commercial activity found in this area is the community commercial center. Located directly behind the Lincoln Plaza is the recently constructed Regency Square business center. This community commercial center provides local residents with varying goods and services. The center itself is integrated and contains approximately 15 retail stores and restaurants, plus a freestanding travel agency and florist. Because there is only one signalized access point on Rohrerstown Road to access this community commercial center, congestion along this busy road is kept to a minimum. Adjacent to Regency Square is Stauffers of Kissel Hill farmers market. This grocery store and nursery, like Regency Square, has only one signalized access point to aid in the reduction of congestion.

A second concentration of commercial activity is located around the Centerville Road-Route 30 interchange. The primary type of commercial activity located here is commercial interchange. Like strip commercial development, commercial interchange development is premised upon the modern customer reliance on the automobile. However, unlike strip commercial uses which are stripped out along an unlimited access roadway, commercial interchange services are usually clustered around an interchange of a limited access expressway, turnpike, or bypass. Commercial interchange development is generally located in outlying areas on major highway approaches to an urban area, such as Lancaster. The commercial sites are usually configured within an integrated design of drive-in services and motel accommodations situated along a service road. Finally, in siting of such commercial uses, special consideration is given to highway safety, roadside beauty, and general amenity of adjoining uses.

The Centerville Road interchange contains the classic types of commercial interchange uses. Included here are several fast-food restaurants, service stations, two motels, a car wash, and other similar uses. Combined, these uses are found on both sides of the interchange. Hempland Road, which runs parallel to U. S. Route 30, acts as a service road along the southern part of the interchange. Because these commercial uses are also frequented by local residents, as well as travelers using the highway, congestion in this interchange area is very heavy.

North of the interchange, along Centerville Road, is Centerville Square. This large community commercial center is similar to that of Regency Square. Located here is a large anchor grocery store, several fast-food-type restaurants, a drugstore, specialty shops, and two branch bank offices.

Centerville Square, like Regency Square, contains one signalized access point and another exit point in order to reduce congestion along Centerville Road. This community commercial center also relies on shared parking and an integrated design concept to make "one-stop" shopping more convenient for the customer.

On the other side of Centerville Road, opposite Centerville Square, are located several village-type commercial uses. Included here are a day-care center, a beauty shop, a dry cleaning store, a branch bank office, and other small offices. These commercial uses are located amid a multi-family residential development (Cherry Hill Villas) and are also linked via Centerville Road and Marietta Pike to the surrounding neighborhoods.

South of the Centerville Road-U. S. Route 30 interchange, along Centerville Road, are several other commercial uses. These uses are more scattered in nature than those concentrated around the interchange or located at Centerville Square. Along this area, which extends to Columbia Avenue, there are two restaurants, a health club, a large wholesale/retail pet store, several small retail shops and services, a day-care center, and two real estate offices.

A third commercial activity node is centered on the Rohrerstown Road-U. S. Route 30 interchange. Located here is a large automobile dealership, a lumberyard/building supply store, and a small shopping plaza. This shopping plaza contains uses commonly associated with community commercial development, and includes a fast-food restaurant, a beauty salon, a furniture store, and an appliance store. In addition to these retail stores and services, this general area also contains a large number of professional offices, including insurance, law, medical, financial, and engineering.

A fourth concentration of commercial activity is located south of East Petersburg. This area contains elements of strip commercial development along Manheim Pike. Situated along this road are several automobile dealerships and service centers, a beverage distributor, and a fast-food restaurant. Also located in this general vicinity are numerous offices.

The villages of Rohrerstown and Landisville contain several, small village-type commercial uses meant to serve the local residents. Typically, village commercial uses are found in the center of established villages or concentrations of residential areas. Commercial uses, such as convenience stores, service stations, branch bank offices, restaurants, craft/specialty shops, funeral homes, etc. are usually categorized as typical village commercial uses. Besides the general listing of typical village commercial uses, the design of these uses is normally quite distinguishable. First, the lots and buildings are small. In turn, there is very little parking associated with village commercial uses because they are intended to serve residents of the village, who, presumably, are within walking distance. Second, village commercial uses are usually centered on the main intersection which denotes the "crossroads" of the village. Therefore, they are typically situated on small square or rectangular lots fronting a major intersection or road.

In the village of Rohrerstown, the commercial area is centered along the Marietta Pike. Included here are a convenience store, a service station, a branch bank office, a diner, two car dealerships, several retail/specialty shops, and professional offices. In the village of Landisville, the commercial area is centered on the intersection of Church Street and the Old Harrisburg Pike.

This commercial area also stretches along the Old Harrisburg Pike, which forms the backbone of the village. Commercial uses found here include a convenience store, a small shopping center with a drugstore and a grocery store, a service station, a tavern, a beverage distributor, and several other retail stores and professional offices.

Finally, there are numerous commercial land uses scattered throughout the remaining parts of the Township. Most notably is the Root's Country Market and Auction, located along Graystone Road in the northeast corner of the Township.

E. INDUSTRIAL

This land use category includes manufacturing, warehousing, and wholesale trade establishments. Within East Hempfield Township, industrial development, like commercial development, is scattered but it is also intense. The Township contains elements of both heavy and light industry, which are primarily located in the Township's two industrial parks.

The first industrial category is heavy industry. This category includes mining, steel and iron production, chemical production, manufacturing of appliances and other durable goods, and the production of farm equipment and supplies. First, a large quarrying operation and related industry is located north of East Petersburg Borough along the Manheim Pike. Because of the availability of limestone in this area, mining operations have become quite extensive and have consumed a considerable amount of land. Second, an Armstrong World Industries, Inc. flooring distribution plant is situated on a large parcel located between Spooky Nook Road and the abandoned rail line, which runs north out of Landisville. This plant represents one of the largest, single heavy industrial uses within the Township. Third, there are several heavy industrial uses found within the Township's industrial parks. Specifically, the Hempfield Industrial Park, located in the southwest corner of the Township, contains a chemical processing plant, several agricultural feed and fertilizer production facilities, several food processing plants, and many heavy industrial product warehousing establishments. Fourth, a large trucking company is located within the industrial park located south of East Petersburg. This trucking operation constitutes a significant area of industrial land within this industrial park. In addition, the PA Route 283 interchange with McGovernville Road (PA Route 741), immediately to the south of the industrial park, affords excellent transportation access for the trucks originating out of this depot. Fifth, the offices of an agricultural feed operation are located in Rohrerstown adjacent to the Conrail rail line, which runs through the center of the village. Also located in Rohrerstown is a lumberyard and sawmill, which is located off Marietta Pike in the eastern part of the village. This lumberyard contains a considerable amount of outdoor storage. Finally, additional heavy industrial uses can be found in the extreme west-central portion of the Township. Located here is a storage yard and other distribution/warehousing-related operations.

A second category of industrial development operating within the Township is light industry. Light industrial land uses are typically considered to include laboratories for medical, scientific, or industrial research and manufacturing, packaging, storage, distribution and/or wholesaling of less objectionable types of industrial products. Within East Hempfield Township, the largest light industrial facility is the Kellogg plant located at the interchange of PA Route 283 and State Road in the central part of the Township. There are several light industrial operations located at the two large industrial parks described previously. Included here are warehouses and high-tech manufacturing plants producing specialized products used for larger products. Other light industrial uses are also found in the commercial/industrial areas behind the Kellogg plant, along Yellow Goose Road and along Dairy Road, which is in the vicinity of the PA Route 283/McGovernville Road interchange. There are also some light industrial uses found amid the heavy industry located in the extreme west-central part of the Township. Finally, some other light industries are located along Stony Battery Road.

F. CONSERVATION/RECREATION

This category includes both public and private recreation land, as well as private woodlands.

The Amos Herr Park is located adjacent to the Township Municipal Building at the terminus of Nissley Road. The land for both the park and the municipal building was donated by Amos Herr (local farmer and educator). Additionally, the Township recently purchased the former Four Seasons Golf Course to help augment its relative lack of public park and recreation land. The adjoining East Hempfield Sports Complex (formerly the Four Seasons Sport Complex) was given to the Township by a local resident and industrialist. It contains indoor fitness and racquet facilities and an outdoor swimming pool. The remaining conservation/recreation land within the Township is privately owned. Included in this land is the Golden Meadows Swim Club located on the Harrisburg Pike, the Landisville Community Pool in Landisville, the Lancaster Racquet and Yacht Club on Columbia Avenue, and the Lancaster West Racquetball Club on Running Pump Road. The Evergreen Golf Course, which consists of a pitch-and-putt and an executive golf course, is located in the extreme northern portion of the Township. Finally, there are a few private woodland areas that have been designated as a part of this land use category.

G. PUBLIC/CIVIC

This category includes uses, such as public and private schools, municipal offices, government buildings, utility holdings, fire stations, churches, cemeteries, and other similar uses. Primarily, the majority of these uses are found in and around the established villages of Landisville, Salunga, and Rohrerstown.

Within Landisville, there is the Hempfield High School campus. Adjacent and to the south of the high school is the Landisville Elementary School. Also located within Landisville are several churches, the Landisville Fire Company, the post office, the Hempfield Community Ambulance Association, and the Landisville Camp Meeting grounds, which is a large religious retreat area.

In Salunga, the Salunga Fire Company is located on the Old Harrisburg Pike, as are other smaller public uses. In Rohrerstown, there are several public uses. The Rohrerstown Elementary School is located just south of the village center along Rohrerstown Road. Adjacent to the elementary school is the Rohrerstown Fire Company. The Rohrerstown Branch of the U. S. Post Office is located in the center of the village. Many churches are scattered throughout Rohrerstown. One of these churches, St. Leo the Great Church, operates an elementary school as well.

The Centerville Junior High and Elementary Schools share a very large common campus located in the center of the Township along Centerville Road. Finally, there are several churches and small cemeteries scattered throughout the more rural and suburban areas of the Township.

VI. ADJACENT AND REGIONAL PLANNING



The preparation of a comprehensive plan should always consider and, if possible, complement planning policies in effect in adjoining communities. The highest level of consideration could include a cooperative planning effort of several adjoining municipalities. Such efforts can lead to a "regional" allocation of land uses that includes a multi-municipal system for the delivery of public services. At a minimum, such consideration should assure that land uses along municipal boundaries are "compatible" with planned land uses in the adjoining jurisdiction. This effort will seek to assure compatibility with adjoining planned activities.

East Hempfield Township is a part of the growing Lancaster urbanized area, which encompasses a wide region of central Lancaster County. As a part of this urbanized area, East Hempfield has grown into a thriving suburban community with a strong economic base. The Township's growth, as well as the growth of the Lancaster Urbanized Area, has produced reciprocal impacts on East Hempfield Township and those municipalities that adjoin it. The following sections describe and illustrate the proposed land use planning designations that exist along the boundaries of the Township within the municipalities it adjoins. The Existing Land Use and Adjacent Planning Map, located on page 68, illustrates the geographic distribution of planned land uses surrounding the Township.

A. PENN TOWNSHIP

Penn Township adjoins East Hempfield Township on the north.

The Penn Township Future Land Use Plan, part of the larger *Manheim Central Region Comprehensive Plan*, was written and drawn in 1991. This plan shows nearly all the land adjacent to East Hempfield Township to be planned for rural and agricultural land uses. The designation is directly related to the presence of fertile and productive farmland located in southern Penn Township. The Penn Township plan attempts to promote the conservation of such farmland by discouraging indiscriminate residential subdivision development in areas designated for rural land uses. Similarly, East Hempfield Township possesses productive farmland and rural residences along its border with Penn Township, and should continue to foster similar land uses in this general area.

A small area of Penn Township, adjacent to the Chickies Creek, is designated as a conservation area due to the presence of the creek's floodplain. In addition, the Lancaster Junction Trail linear park crosses the municipal border adjacent to the creek.

B. RAPHO TOWNSHIP

Rapho Township abuts East Hempfield Township on the northwest.

Rapho Township, along with Penn Township and Manheim Borough, participated in the *Manheim Central Region Comprehensive Plan* written in 1991. The Future Land Use Plan shows that area of Rapho Township abutting East Hempfield Township planned for conservation. This conservation area is premised upon the floodplain of the Chickies Creek and the potential for conservation/recreation uses within that floodplain.

C. WEST HEMPFIELD TOWNSHIP

West Hempfield Township comprises all of East Hempfield Township's western border.

The *West Hempfield Township Comprehensive Plan* was written in 1991 and shows a wide range of land uses abutting East Hempfield Township.

Between the Columbia Pike (PA 462) and the Conrail rail line, the *West Hempfield Township Plan* shows an area of suburban residential land uses along Donnerville Road. This residential area is surrounded by conservation lands associated with the floodplain of the West Branch of the Little Conestoga Creek. North of the Conrail rail line to U. S. Route 30, the plan depicts a large area of industrial land, part of the existing Hempland Industrial Park.

North of Route 30 to near Indian Springs Road, the plan calls for the continuation of suburban residential land uses and includes a small area of commercially-designated land north of Kayo Avenue. From Indian Springs Road north to the abandoned rail line, the land is predominately planned for industrial uses with some conservation interspersed. North of the rail line to just south of Kaufman Road, the plan designates areas of agricultural use with suburban residential uses delineated in between. North of this area to Spooky Nook Road, the *West Hempfield Township Plan* shows the entire area designated as suburban residential. This area contains several large residential subdivisions and western portions of the villages of Landisville and Salunga.

Finally, the area of West Hempfield Township between Spooky Nook Road and Chickies Creek has been planned for rural residential land uses. The West Hempfield Township Future Land Use Plan has demonstrated a cognizant effort to designate compatible land uses in areas that adjoin East

Hempfield Township. Much of the existing land uses in East Hempfield Township that abut West Hempfield Township are similar to both those existing and planned in West Hempfield Township.

D. MANOR TOWNSHIP

Manor Township adjoins East Hempfield Township on the south.

The *Manor Township Comprehensive Plan* was written and adopted in 1986. This plan shows that the majority of the land abutting East Hempfield as planned for continued commercial activity. From Donnerville Road east to Weaver Road, the *Manor Township Comprehensive Plan* calls for mixed residential/commercial land uses in this area. This land use designation suggests that this area is best suited for a mix of residential and neighborhood commercial uses. The types of residential uses to be located in this area would include detached, semi-detached, attached, and residential apartment conversions.

From Weaver Road east to Felsing Drive, the adjoining land has been designated for continued (and expanded) commercial uses. From Felsing Road to Chestnut View Drive, the land is planned for continued medium density residential land uses. This designation reflects the presence of the Wilshire Hills residential subdivision. Adjacent to this subdivision is a small area designated for industrial use. It appears that this area is planned for the continuation of existing industrial activity. From here, east to just west of Running Pump Road, the plan illustrates an area of medium density residential in association with the existing homes already there.

A large area along Columbia Avenue (PA Route 462), from Running Pump Road east to Albright Avenue, is planned for continued and "infill" commercial activity. A small area from Albright Avenue to Cornell Avenue is slated for high density residential use due to the presence of existing residences. Finally, from Cornell Avenue to the Little Conestoga Creek, the *Manor Township Comprehensive Plan* calls for continued commercial land uses.

Much of East Hempfield's land uses along Columbia Avenue parallel similar planned land uses in Manor Township. This compatibility should continue into the future.

E. LANCASTER TOWNSHIP

Lancaster Township abuts East Hempfield Township along the southeast corner.

The *Lancaster Township Comprehensive Plan* was written in 1986. This plan shows that all the land within the Township adjoining East Hempfield Township is planned for conservation/open space, as the floodplain of the

Little Conestoga Creek exists in this area. Similarly, the adjoining land uses in East Hempfield also reflect the presence of the floodplain.

F. MANHEIM TOWNSHIP

Manheim Township adjoins East Hempfield Township along its eastern border.

The *Manheim Township Comprehensive Plan* was written and adopted in 1987. This plan shows a variety of planned land uses abutting East Hempfield Township. It should be noted, however, that the entire boundary between Manheim and East Hempfield Townships is formed by the Little Conestoga Creek. The floodplain associated with this creek precludes development immediately along the creek itself. Hence, the floodplain and creek form a natural buffer from existing and/or future incompatible land uses. Although this undevelopable floodplain exists, the Manheim Township Future Land Use Plan does not show it as a conservation area, rather it illustrates developable land use types along the entire length of the creek, and hence, adjacent to East Hempfield Township.

Beginning at the Manheim and Lancaster Township border, north to U. S. Route 30, the Manheim Township Future Land Use Plan designates this area for industrial development. From Route 30, north to and along the Old Harrisburg Pike, the plan calls for continued commercial activity near the entrance to Park City, and high density residential land uses associated with the Mennonite Home. North of Old Harrisburg Pike to an unnamed tributary of the Little Conestoga Creek, the plan has shown an area of commercial use connected with the Park View Plaza shopping center. From the tributary north to McGovernville Road, the Future Land Use Plan shows an area of high density residential use.

Between McGovernville Road and the Manheim Pike (PA Route 72), the plan shows a succession of industrial and commercial areas. These areas relate to existing and planned facilities. From the Manheim Township and East Petersburg Borough boundary, north to Buch Avenue, the Future Land Use Plan depicts a small area of industrial use followed by an equally small area of medium density residential; finally, followed by an area of low density residential development. The remaining area of Manheim Township adjoining East Hempfield, from Buch Avenue to Penn Township, is planned for low density residential development.

G. EAST PETERSBURG BOROUGH

East Petersburg Borough is nearly entirely surrounded by East Hempfield Township. East Petersburg is located within the Township's northeast corner.

East Petersburg Borough does not have a "mapped" comprehensive plan; therefore, its Official Zoning Ordinance, adopted in 1990, will be utilized to determine adjacent land use.

From just north of Delp Road to Miller Road, the Borough's land adjacent to East Hempfield Township is zoned for highway commercial activity. Much of this area is already used for such purposes. West from Main Street (PA Route 72) to just west of Lemon Street, the land is zoned for R-1 residential uses. This zone accommodates the newer neighborhoods that have developed along the periphery of the Borough. From this point west, and north to West State Street, the Zoning Ordinance designates the land for industrial uses. A small area adjacent to and north of West State Street is zoned for neighborhood commercial. North of this area is a small industrial zone.

Nearly all of the remaining land in East Petersburg Borough adjacent to East Hempfield Township has been zoned for R-1 residential. The only exception to this generalization is in the north-central area of the Borough where the land is zoned for R-3 residential. This zone accommodates the higher density residences within the Borough. In addition, a small area just east of the R-3 area is zoned for recreation. This area serves many of the residents who live in the adjacent R-3 zone.

H. LANCASTER COUNTY COMPREHENSIVE PLAN

The Lancaster County Planning Commission is updating the County's Comprehensive Plan. The Lancaster County Comprehensive Plan consists of four components: (1) the Policy Plan, (2) the Growth Management Plan, (3) the Action Plan, and (4) Regional Plans. The first component, the Policy Plan, contains policy goals and objectives concerning major issues facing the County. The Policy Plan was adopted by the Lancaster County Board of Commissioners in January, 1991.

The intention of the Policy Plan component is to lay the foundation of the overall Comprehensive Plan by detailing various goals and "visions" of how the County's future is to unfold. The primary focus of the Policy Plan is to develop a way to regain a balance between the County's urban centers and rural areas. To regain this balance, the location and pattern in which development is occurring today will need to be changed, and the viability of the local agricultural economy enhanced.

The Policy Plan postulates that future growth will be directed to urban areas when and where there is a full range of public facilities and services available to support residential and economic development. An important component regarding this policy is the delineation of urban growth boundaries around these urban areas where development will occur and will, conversely, prevent development from continuing to sprawl outward into rural areas.

Other key components of the Policy Plan include goals and objectives regarding natural resources, community character, housing and human services, public facilities and services, transportation, the economy, parks and recreation, and energy resources.

The Growth Management Plan (GMP) is the second component of the Lancaster County Comprehensive Plan. The GMP visually represents the land use goals and objectives contained in the Policy Plan. It is designed to assist the County and local municipalities in guiding and influencing the pattern, location, and timing of growth, and in determining areas appropriate for continued agricultural, resource, and rural uses.

The Growth Management Plan proposes the use of urban growth boundaries as the primary way to manage growth effectively within the County. An urban growth boundary (UGB) is a line drawn on a map around an area that includes a city or borough at its center, developed portions of townships, and enough additional buildable lands to meet future land use needs to the year 2010. A UGB line provides a "boundary" that separates areas appropriate for urban growth and the extension of urban services, particularly sewer and water, from areas intended for agricultural, resource, and rural uses. East Hempfield Township is within the Central Lancaster Urban Growth Boundary with Lancaster City as the core.

Some of the benefits UGBs can provide include the preservation of community identity and character, the control of sprawled lands, predictability of capital improvements planning, tax savings in the efficient provision of public services and facilities, the revitalization of urban areas, and simplified decision-making at the urban edge.

The Growth Management Plan proposes that each municipality within the Central Lancaster Urban Growth Boundary meet its own future needs as determined by a 20-year population projection for that municipality. For East Hempfield Township, this involves basing a year 2010 "target" population on buildable land availability and a redevelopment factor, rather than historic trend populations. This method provides a more accurate assessment of future growth potential. Growth within the Township is encouraged to occur at an average density of 4.5 gross units per acre for residential development. The Township will utilize this projected density to determine future land use needs by combining it with their target population, average household size, vacancy rates, and the need for land to accommodate commercial, industrial, institutional and recreational uses. The Township will continue to determine appropriate zoning districts.

The third section of the County's Comprehensive Plan includes a yearly Action Plan which provides an annual framework for ongoing implementation of the Policy and Growth Management Plans. The Board of County Commissioners adopted the first annual Action Plan in 1993.

The final component of the County's Comprehensive Plan encompasses a series of regional comprehensive plans and functional plans focusing on issues of County and municipal importance. To date, the County is providing assistance with three regional plans: the SOLANCO Comprehensive Plan, the Manheim Region Comprehensive Plan, and the Donegal Region Comprehensive Plan. In addition, the County Open Space Plan was adopted in 1992 as an amendment to the County Comprehensive Plan. Other functional plans currently underway include a long-range Transportation Plan, a Housing Plan, and Cultural Resources Plan.

I. PENNSYLVANIA AGRICULTURAL SECURITY AREA

East Hempfield Township has approximately 920 acres proposed for inclusion in its Agricultural Security Area. This area was recently (September, 1991) proposed by the Township Supervisors. All of the proposed farmland acreage is located north of PA Route 283.

Typically, agricultural security areas comprise at least 500 acres of farmland identified by farm owners and township supervisors to secure the future of farming and agricultural industry. The main goal of agricultural security areas is to help slow urban development pressure exerted upon highly agriculturally productive areas. To implement this goal, three policies are administered by the municipality. These policies include:

1. The township supervisors agree to support agriculture by not enacting laws which restrict normal farming operations or structures;
2. The condemnation of farmland by a government in the agricultural security area must first be approved by the Agricultural Lands Condemnation Approval Board to determine if alternative sites are available for condemnation; and,
3. The farmland preservation options offered by the Agricultural Preserve Board are available to qualified farm owners in an agricultural security area. For example, only a farm owner in an agricultural security area may be eligible to receive cash for permanently preserving his farm with a conservation easement.

East Hempfield Township should be commended for its efforts at attempting to preserve its productive agricultural land and maintain a pleasant contrast between urban development and rural character. However, additional farmlands should be continuously added to the total acreage comprising the agricultural security area. Policies resulting from this comprehensive planning effort, and subsequent ordinances, must also support the continued accumulation of farmland acreage.

VII. PUBLIC FACILITIES AND SERVICES



A. SCHOOLS

A high quality education is a widely-held objective for most of our society. The land use activities within a school district directly affect the operation and scale of a particular educational program. Historically, school districts have engaged a planning process to, among other things, forecast short-term future demands for school facilities. This planning enables the school district to program additional building expansion or construction so that forecasted demands can be accommodated.

To gain an understanding of the educational programs and facilities available to East Hempfield Township, an interview was conducted with Mr. Francis J. McCaffrey, Assistant Superintendent of the Hempfield School District, on November 19, 1991. Much of the information which follows was obtained at this interview.

East Hempfield Township is served by the Hempfield School District. (See School District Map on page 81.) The District also serves West Hempfield Township, as well as East Petersburg and Mountville Boroughs. The School District is governed by a nine-member School Board whose membership is elected at-large.

Presently, the School District employs the following grade format:

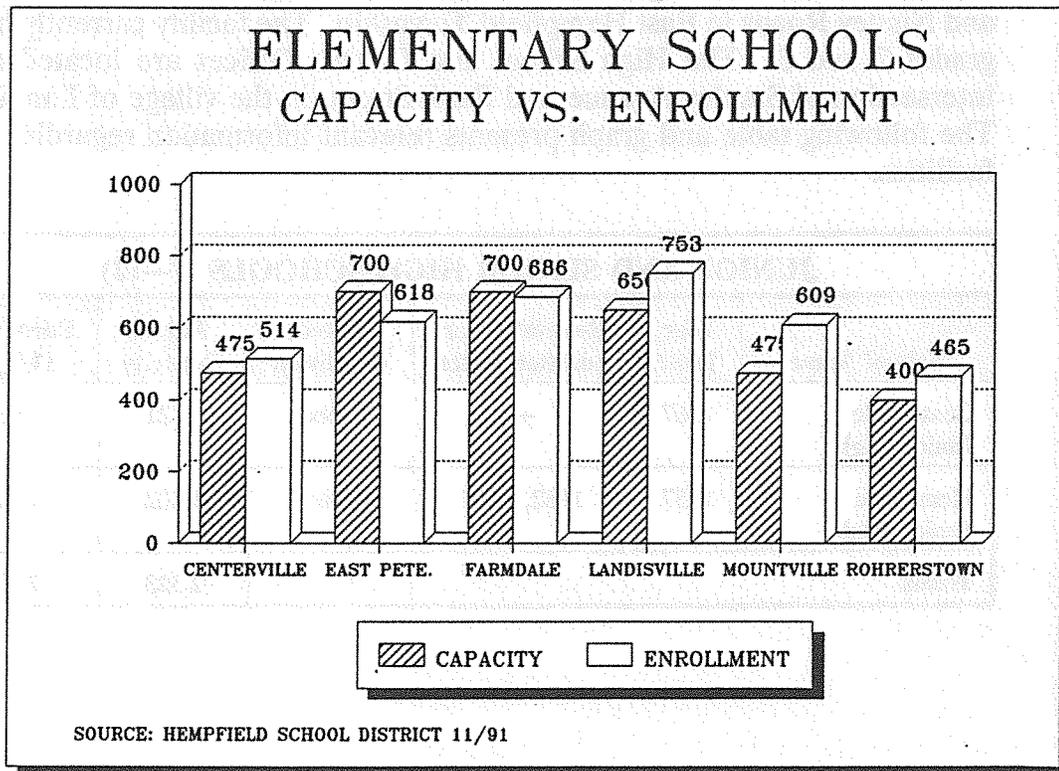
K-6	Elementary School
7-8	Junior High School
9-12	Senior High School

In addition to the normal curricula, the School District offers classes for its special needs students. Furthermore, the District participates in the Lancaster-Lebanon Intermediate Unit 13. In all, nearly 5% of the total student population receives some form of special education. Approximately 80 students per year attend the Lancaster County Area Vocational-Technical

Schools located in Mount Joy, Willow Street and Brownstown. Mr. McCaffrey explained that St. Leo's Catholic Church, the Sonlight River Brethren School and an unnamed Amish school are the only parochial schools operating within the School District. In addition, the Janus School and the New School are the only private schools within the District.

The following describes the District's elementary schools.

ELEMENTARY SCHOOLS (K-6)					
School Name	Year Built	Renovation or Addition Dates	Rated Condition	Rated Capacity	Enrollment 11/1/91
Centerville	1970	—	Excellent	475	514
East Petersburg	1958	1963, 1989	Excellent	700	618
Farmdale	1953	1965, 1989	Excellent	700	686
Landisville	1975	—	Excellent	650	753
Mountville	1906	1960, 1973	Good	475	609
Rohrerstown	1951	1976	Fair	400	465
Totals				3,400	3,645



Mr. McCaffrey explained the District tries to limit enrollment at elementary schools to no more than 700 pupils. Furthermore, individual class sizes are limited to 25 pupils for grades K-3, and 30 students for grades 4-6.

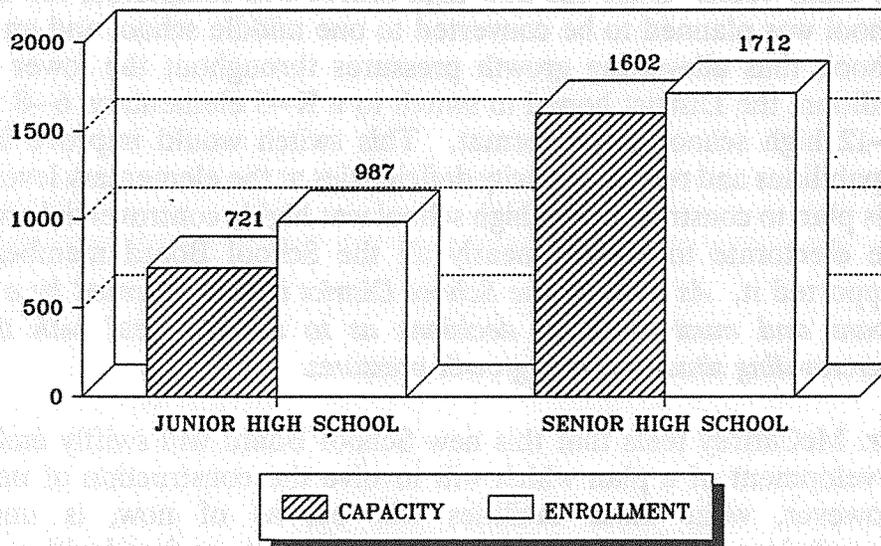
Comparison of capacity to enrollment figures reveals that the School District has exceeded its overall elementary school capacity by approximately 245 students, or 7.2%. To compound this District-wide situation, several school sites are faced with acute shortages. East Hempfield Township residents are served by Rohrerstown, Centerville, Landisville and, to a lesser extent, East Petersburg elementary schools. Of these, only East Petersburg has marginal excess capacity for about 82 new students; the other three schools have a combined enrollment that exceeds their capacities by 212 students. These shortages are illustrative of the School District's overcrowding situation at all levels. The tremendous growth which has occurred throughout the School District compels some adjustment to the schools' capacities if current education goals are to be maintained.

In order to address this problem, the School District has been relying on the use of relocatable classrooms to augment the capacity of the schools and to accommodate the enrollment overflow. Presently, there are two relocatable classrooms each at the Rohrerstown, Landisville and Mountville elementary schools. In addition, the School District is renting kindergarten classroom space from the Mountville Church of the Brethren.

The District's Junior High School is located at the intersection of Centerville and Nissley Roads in East Hempfield Township. The facility currently houses grades 7 and 8. The High School and District Offices are located at the intersection of Stanley Avenue and Bank Street, in the village of Landisville. The following table and graph presents relevant information regarding these facilities.

JUNIOR AND SENIOR HIGH SCHOOLS (7-12)					
School Name	Year Built	Renovation or Addition Dates	Rated Condition	Rated Capacity	Enrollment 11/1/91
Centerville Junior High	1967	—	Good	721	987
Hempfield Senior High	1957	1962, 1975	Fair	1,602	1,712
Totals				2,323	2,699

JUNIOR AND SENIOR HIGH SCHOOLS CAPACITY VS. ENROLLMENT



SOURCE: HEMPFIELD SCHOOL DISTRICT 11/91

As the table and graph reveal, current enrollments exceed rated capacities by a total of 376 students, or about 16.2%. The Junior High School exceeds capacity by 266 students, or by about 37%, making it the most overcrowded school within the entire District.

Projections prepared by the Pennsylvania Department of Education, and used by the District to plan for new facilities and programs, suggests considerable growth at each of the grade formats during the next five years.

Grades	1989-1990	1993-1994	Net Change (%)
Elementary K-6	3,487	3,844	357 (10.2%)
Junior High 7-8	925	1,175	250 (27.0%)
Senior High 9-12	1,678	1,994	316 (18.8%)
Totals	6,090	7,013	923 (15.2%)

These projections appear to be "close to the mark." For example, the projected enrollment for the 1989-1990 school year was 6,090 students. Actual enrollment at the end of that school year was 6,059. Figures for the 1993-1994 school year show an additional 669 students, compared to current enrollment. To manage this projected growth, as well as alleviate the current overcrowding situation, the School District is exploring several construction/expansion project options.

While School District officials contend that construction of new facilities is essential to accommodate the burgeoning student population, it must wait to

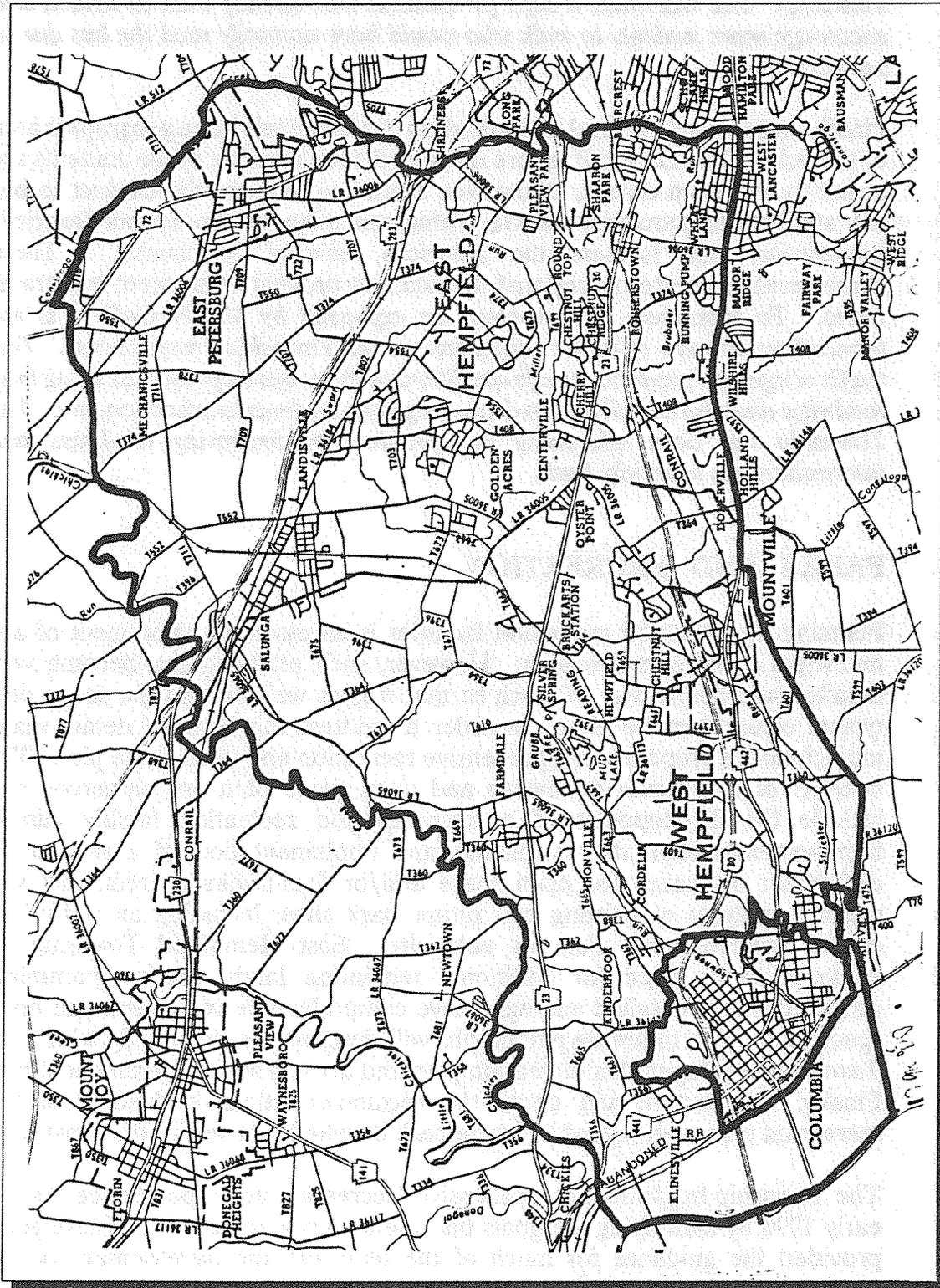
receive direction from the newly elected Board of School Directors (November, 1991). Prior to this election, District officials had proposed the construction of a new high school that would accommodate anticipated growth for many years. Once the new high school was completed, the existing high school was planned to be converted to one middle school and an elementary school, thus alleviating growth pressures throughout the lower grades. In addition, the District hoped to switch to a K—5 elementary, 6—8 middle, and 9—12 high school grade format. This switch would improve instructional capabilities and relieve capacity deficiencies at the elementary level. However, this plan to construct a new high school was highly controversial and prompted the electorate to replace nearly all the School Board members who had supported it. *As a result, the School District is now governed by a new School Board and must await its decisions as to how to deal with the District's overcrowding situations and growth pressures.*

Mr. McCaffrey feels that this new School Board will swiftly embark on the development of a plan which will involve the construction of new facilities. However, what those facilities will be, as of now, is undetermined. Nonetheless, the District and new School Board are faced with making major decisions aimed at reducing the overcrowded conditions, while at the same time providing quality education in a stimulating environment.

Although the overcrowding problem is foremost on the School District's agenda, other factors, which have direct relationship with the Township, are also of concern. *Mr. McCaffrey indicated that he hopes the School District and the Township continue to cooperate with each other regarding the public's use of District facilities. In particular, he stresses the joint use of both Township-owned and District-owned recreational and cultural facilities. The recently prepared Township Recreation Plan addresses this issue by encouraging a continued cooperative effort among the Township, School District, and the Hempfield Area Recreation Commission (HARC), with regard to the provision of recreation facilities, programs, personnel and maintenance.*

Another issue expressed by Mr. McCaffrey is to encourage the continued communication link between the District and the Township. He referred to the dialogue between the District and the Township regarding the review of proposed residential developments which would have an impact on the School District. To formalize this process and assure advance notification of the need to accommodate future students, it is recommended that the Township amend its Subdivision and Land Development Ordinance requiring prospective developers to officially gain written School District review and comment on proposed developments. However, Township officials should only use such comments to improve the design, layout, access, parks, or some other aspect of the development. Township officials cannot deny development proposals based upon claims by the School District that it can't accommodate new students. School districts are bound by the same mandate as the Township to accommodate growth.

SCHOOL DISTRICT MAP



The School District also encourages the Township to promote the implementation of sidewalks and/or pathways within new developments that are sited in close proximity (one-half mile) to any of the School District's facilities within the Township. This will make it safer for students who already walk to school, and encourage more students to walk who would have normally used the bus due to safety reasons.

Finally, because of the rural and suburban character and large geographic area of the School District (39.8 square miles), all but a fraction of the students are bused to and from classes. Moreover, State law requires the District to bus any students to parochial schools within ten miles of the School District's boundaries; this furthers the District's reliance on busing. These characteristics create operational demands to provide convenient bus travel times. *To exacerbate this problem, as expressed by Mr. McCaffrey, is the tremendous amount of traffic congestion on the Township's major roads. This traffic congestion produces unsafe conditions at those bus stops located along busy roadways and also contributes to delays in getting students to school on time. The Township has been addressing this problem by improving roadways and intersections on a priority basis.*

B. PARKS AND RECREATION

Planning for park and recreation facilities is an essential component of any municipal comprehensive plan. However, such planning can become very detailed and deliberate, so much so that it goes well beyond the scope of a typical comprehensive plan. In order to address this level of detail, many municipalities prepare a comprehensive recreation and open space plan. The benefits of a separate recreation and open space plan are numerous and include the development of a township-wide recreation facility capital improvements plan, the calculation and implementation of a mandatory dedication ordinance for open space and/or fees-in-lieu thereof, and site specific analyses of existing and future park sites, including an individual capital improvements plan for each site. East Hempfield Township, in response to its need for additional recreation lands and programming, prepared a very detailed and aggressive comprehensive recreation and open space plan. The following paragraphs will describe the process by which the Township developed this recreation plan and arrived at its recommendations. Finally, this section will detail the recommendations derived from the recreation plan with regard to future park development within the Township.

The Township began its Comprehensive Recreation and Open Space Plan in early 1990 by identifying the goals that the plan was to achieve. These goals provided the guidance for much of the plan and the development of the resulting recommendations.

Important background information was identified and analyzed in order to determine and evaluate the existing conditions within the Township. This information included the identification of certain natural and cultural features.

These features are generally considered ones that can be conserved or enhanced when they are integrated into recreational development.

Another important set of background information is the Township's demographic composition. Existing population, age composition, socioeconomic conditions, and the Township's housing stock were analyzed to determine the quantity and types of parkland needed now. Township-wide and individual neighborhood populations were projected based upon existing conditions and past trends. These projections are vitally important because they were used as a basis to determine the amount of parkland needed in the future. In addition, a build-out analysis was performed for each neighborhood, based upon current zoning, to establish the amount of neighborhood parkland needed to satisfy ultimate demand within localized areas.

Next, all existing park and recreation facilities, both public and private, within the Township were inventoried. This inventory is important to fully comprehend the current extent of recreation sites and facilities in East Hempfield Township in order to better plan and site future recreation areas. In addition, the facilities inventory helped to identify those areas of the Township that lack needed recreation sites and point out particular locations for future sites and types of facilities. These facilities are depicted on the Existing Parks and Recreation Facilities Map located on page 101.

Following the accumulation and evaluation of the background data describing the existing and future conditions within the Township, a very important analysis was performed. The Spatial Park Analysis analyzes the amounts and locations of the various types of parks serving the Township. It then compares these parks with the projected growth of the Township and its neighborhoods. From this analysis, local officials know that types of, and where, additional parklands are needed now and in the future. This analysis was performed for regional, community, neighborhood, and linear parklands.

One of the more important considerations of this recreation planning process was the evaluation of the Township residents' overall satisfaction with recreation services offered. The Board of Supervisors agreed that a comprehensive, Township-wide survey was warranted in order to gauge the opinion of all Township households. In order to elicit responses for both recreation facility satisfaction and satisfaction regarding recreation programs, two separate surveys were constructed. Because all Township households were being surveyed, approximately half of the households were mailed the facility survey and the other half received the program survey. Approximately 6,350 surveys were mailed during the summer of 1990. Of the 6,350 surveys that were sent, 2,477 were returned representing 7,322 residents and achieving an overall response rate of 39.0%. Typically, sociologic and marketing surveys attempt to achieve a 20 to 30% response rate; therefore, the response results of this survey surpassed these general standards. The results of this survey proved to be invaluable in developing many of the recommendations.

Other important background information was gathered, analyzed and presented. This information included an inventory of existing recreation programs, an evaluation of current Township maintenance and personnel policies, and analysis of the Township's budgeting process. Once all this and the other background information and the Spatial Park Analysis were assembled and reviewed in light of the plan's goals, a very detailed set of recommendations was developed. The remaining portion of this section presents the Recreation Plan's recommendations regarding future park planning. These recommendations are excerpted from the Township's Recreation Plan.

"A. FACILITIES RECOMMENDATIONS

1. REGIONAL PARKS

East Hempfield Township is well-endowed with regional parklands now and in the future. Several existing regional parklands and recreation facilities are located within the Township itself and include the East Hempfield Township Sports Complex and Golf Course, Evergreen Golf Course, Collingwood's Golf Center, Golden Meadows Swim Club, the Lancaster Racquet and Yacht Club, and the Racquet Club West. In addition, several other regional parklands and recreation facilities are located within the recommended one-hour's driving time from East Hempfield Township.

Although there already exists an extensive array of park and recreation facilities at the East Hempfield Township Sports Complex and Golf Course, the Board of Supervisors desire to make such facilities more useful and appreciated, particularly to Township residents. To identify what types of improvements would be most desired, the results of several questions from the Attitudinal Survey can be helpful. Specifically, Questions 8 and 9 asked respondents to select three of their, and their family's, most desired future indoor and outdoor facility improvements for the Sports Complex, exclusively. The following lists those facilities that were indicated as favorites.

<u>Indoor Facility</u>	<u>Preference</u>	<u>Outdoor Facility</u>	<u>Preference</u>
swimming pool	413	nature/fitness trail	287
restaurant/clubhouse	304	swimming pool	262
ice-skating rink	207	bike trail/path	237
concert hall/auditorium/theater	201	man-made pond/lake for fishing/skating	235
bowling alley	188	miniature golf course	231
weight room/exercise equipment	188	picnic pavilions/tables/barbecue grills	202
tennis courts	168	driving range	158
aerobics room	127	band shell/amphitheater	148
rest rooms/drinking fountains	123	tennis courts	135
racquetball courts	123	sledding hill	105
basketball courts	97	playground equipment	100
sauna/jacuzzi	96	field hockey/soccer fields	95
indoor playground	83	cross-country trail	84
volleyball courts	73	rest rooms/drinking fountains	80
batting cages	64	baseball/softball fields	71
meeting rooms	61	shaded areas	67
billiards/pool	55	batting cages	43
snack bar	51	volleyball courts	39
gymnastics room	51	basketball courts	33
multipurpose room	48	boccie ball/lawn bowling courts	31
lounge/sitting area	33	snack bar	30
squash courts	18	horseshoe pits	22
arcade	14	street hockey courts	19
		shuffleboard courts	18
		skateboarding facility	16

The results of both questions indicate a strong desire for both indoor and outdoor swimming pools and an outdoor fitness and bike trail. Since the Sports Complex already has an outdoor swimming pool, there appears to be no reason to provide another one. However, a more liberal membership policy may be warranted to increase local residents' accessibility to the pool. An indoor swimming pool may be an appropriate facility improvement, if it appears feasible and the School District is not also planning one.

Because of the high preference for both a recreation trail (walking and biking) and a man-made pond, the development of a combined linear trail and a man-made pond should be considered. A linear recreation trail could be designed at each community park and around the recommended pond. However, because of the need to keep the general public away from the golf course, it is recommended that the pond/trail combination be placed at another location. The Amos Herr Community Park has soil conditions that would be best suited for pond construction.

Another highly preferred outdoor facility improvement is a miniature golf course. The Sports Complex already operates a miniature golf course, however, this course could be upgraded to make it more challenging and inviting to the public. Or, if current usage inundates the existing course, another, a different type of miniature golf course could also be provided to target a different level of ability.

Other popular outdoor facility improvements included a driving range and tennis courts; both of these facilities presently exist. Again, by relaxing usage fees and policies and by increasing publicity of these facilities, local residents can utilize them more readily, thereby satisfying the community's desire for such facilities.

Regarding indoor facility improvements besides the swimming pool, a restaurant/clubhouse was the second most popular response. Currently there is a vacant restaurant located on the golf course grounds next to the pro shop. Presently, the Township Supervisors are talking about re-opening this restaurant in order to provide dining service to golfers and visitors alike. In addition, this restaurant facility could be used to accommodate community-oriented functions, such as service and social club banquets, church group gatherings, community theme dinners/parties. A rental fee could be charged by the Township to help fund various recreation-related facility improvements and programs, as well as to pay for the operation of the restaurant itself. Additionally, the Township Supervisors have expressed interest in enticing the private sector in the provision of high quality restaurants through incentive zoning at other locations.

Other highly desired indoor facility improvements include an auditorium, ice-skating rink, bowling alley, weight room, and tennis courts. Because tennis courts and weight-training equipment are already provided, there is no point in providing additional improvements at this time. As for an auditorium, there appears to be little room for the construction of such a large facility at the Sports Complex site. Rather, the Township should continue a cooperative relationship with the Hempfield School District, with respect to the common usage of the several auditoriums and multipurpose rooms located in the various School District facilities.

An indoor ice-skating rink ranked as the fourth most popular response and could be accommodated as an extension of the existing sports complex building. Both hockey league play and recreational ice-skating could be provided via a Township-owned ice rink. This rink could also yield a revenue through rental fees and user fees.

The fifth most popular response was a bowling alley. Since there is no commercial bowling alley within the Township, and there appears to be a high demand for such a facility, the Township may want to investigate the addition of a small bowling alley

to the Sports Complex. If that appears to be infeasible, Township officials could entice the private development of a bowling alley within the Township by offering tax incentives or other development "carrots."

The remaining items listed as indoor facility preferences could be incorporated in any revision or upgrade to the existing facility. However, their overall demand does not denote them as high priority items. Finally, it is important to understand that the development of this regional facility will likely serve residents from beyond East Hempfield Township. Therefore, such undertakings should not be financed with budgeted monies or ones collected via the mandatory dedication process that must be earmarked for serving primarily Township residents. Rather, these facilities should be designed and run much like businesses that are financed through membership and user fees.

2. COMMUNITY PARKS

PARKLAND ACQUISITION

Chapter VI (Spatial Park Analysis) determined that the Township has an abundance of community parklands, as described below:

<u>Name</u>	<u>Map Symbol</u>	<u>Acreage</u>
Amos Herr Community Park	1	54.0
Hempfield High and Landisville Elementary Schools	4/5	51.1
Centerville Elementary and Junior High Schools	6/7	39.8
Nolt Road Site	29	55.0
Nissley Road Site	30	<u>17.0</u>
Totals		216.9

The existing acreage should serve the Township past the year 2010 in terms of needed space. However, the provision of community parks involves more than just amassing open fields. It must also provide a centralized facility for a variety of leisure pastimes. Furthermore, it should be designed to accommodate special organized events that would be sponsored within the community. In these respects, additional work should be accomplished.

FACILITY IMPROVEMENTS

For the time being, facility improvements should be primarily focused at the Amos Herr site. This policy will allow this park to become the Township's identifiable location for a wide variety of activities and special community-wide functions. Moreover, it will not over-allocate resources to community, versus other park types.

Limited improvement of the Nolt Road site is recommended so as to entice private contributions (sweat equity) for specific desired improvements. The Nolt Road site should be graded and seeded by the Township. Next, the Township should solicit requests from special interest groups for their construction of desired athletic fields. The Township should engage professional design services to ensure that the facilities will be constructed properly so that their future removal, adaptation, or integration within the site's eventual development is assured. Then, the Township and private groups should enter into an agreement regarding construction, maintenance, disposition, and use of the proposed fields. At the same time, the Township could begin to provide support facilities for the eventual community park, including a parking lot, picnic pavilion, benches, water fountain, trash receptacles, a bike rack, signs, shade trees, etc. It is also noted that the northeast corner of this site is slated for the placement of a neighborhood park. This neighborhood park should be located and designed so that it will not be overrun by users of the above-described athletic fields.

The Nissley Road site should be held as a resource for future development after the year 2000. Since the Township has an abundance of existing community parkland, the activation of this site would be duplicative. The master planning and improvement of this parcel should await the next comprehensive recreation plan update, so that the, then, prevailing recreation preferences can be incorporated.

To determine needed improvements at the Amos Herr site, the results from Question 11 of the survey are helpful.

<u>Facility</u>	<u>Preference</u>
walking/fitness trail	565
picnic pavilions/tables	446
rest rooms/drinking fountains	325
playground equipment	242
tennis courts	218
baseball/softball diamonds	162
open play areas	152
field hockey/soccer fields	140
basketball courts	114
barbecue pits	90
volleyball courts	82
shuffleboard courts	73
boccie ball/lawn bowling courts	60
horseshoe pits	59

Again, the results of this question strongly indicate the desire for linear recreation trails and picnic facilities. Because the Amos Herr Community Park does not have a linear trail, it is recommended that Township officials plan for the design and development of one within the park. In addition, the overwhelming response for linear recreation trails, both in this question and Question 9, clearly illustrate the need for linear parks throughout the Township. A separate discussion regarding future linear park development will be presented later.

As discussed earlier for regional parks, Township residents strongly supported the construction of a man-made pond for fishing and ice-skating. Of the three Township-owned community parklands, Amos Herr Community Park had the best soil type to support pond construction. Therefore, it is recommended that a pond be located on the site, around which a trail can weave.

Picnic facilities are also a high priority. There is a picnic pavilion with 19 picnic tables and several barbecue grills currently located at the Amos Herr Community Park, but more are needed. It is recommended that another, similar pavilion be provided. Additionally, it is recommended that the Township initiate communication with the Hempfield School District to provide picnic pavilions and tables at the various school locations. Picnic facilities at both the high school and junior high school would allow local residents to enjoy picnicking close to home and would also allow for additional educational opportunities, such as outdoor classes and arts and crafts activities for the District's students.

With the completion of the "Dream Park," the Amos Herr Community Park has been fitted with an exceptional playground designed by and for youth. This addition is a real "gem" within the Township's park system.

Because the community parks already contain many of the most desired park facilities, it would appear illogical to suggest wholesale revisions. However, local officials feel that an additional softball field is needed and is therefore recommended.

To coordinate all existing and proposed improvements, it is recommended that a Master Site Plan be developed for the Amos Herr site, and a sketch plan be drawn for the Nolt Road site.

The following new improvements should be added per site:

<u>Amos Herr Community Park</u>		<u>Nolt Road Community Park</u>	
2-acre pond*	\$100,000	grading and seeding (50 ac.)	\$ 65,340
1 mile measured path	\$ 19,325	50-space parking lot	\$ 22,500
10 fitness stations	\$ 3,000	18-table picnic pavilion	\$ 14,000
1—18 table picnic pavilion	\$ 14,000	6 park benches	\$ 1,980
18 picnic tables	\$ 9,900	6 trash cans	\$ 600
rest rooms	\$ 5,500	1 bike rack	\$ 440
water fountain	\$ 880	1 sign	\$ 275
1 baseball/soccer field	\$ 49,500	landscaping	\$ 2,000
retrofit lights at existing baseball field	\$ 18,000	Total	\$107,135
add backstop to existing baseball field	\$ 2,750		
5 barbecue pits	\$ 1,650		
6 waste cans	\$ 660		
6 park benches	\$ 1,980		
1 tennis wall at existing courts	\$ 500		
wooden playground and surfaces	\$ 0 ¹		
50-space parking lot	\$ 22,500		
Total	\$250,145		

*This pond should include the following:

- Aerated wetland at upstream location with interpretative display.
- Fencing and raised catwalk in wetlands area.
- Minimum depth of 12 feet.
- Freeboard clearance of at least 12 inches above base flood elevation.
- Rip-rap banks to prevent rodent dens.
- Obtainment of permits from PA DER Bureau of Dams and Waterways; Division of Dam Safety, and from PA DER Bureau of Dams and Waterways, Division of Waterways and Storm Water Management.
- Cooperation with SCS in the preparation of a soil erosion sedimentation control plan.
- Shaded landscaped nodes for natural appearance.
- Fishing pier.

Pond construction costs \$1.50 to \$2.00/sq. ft. - HRG \$65,340 per acre

Pond maintenance costs \$1,200 to \$2,400/year - HRG

¹To be donated by community.

3. NEIGHBORHOOD PARKS

PARKLAND ACQUISITION

Neighborhood parkland acquisition should be the Township's number one recreational priority. Although there are approximately some 46± acres of School District-owned and privately-held neighborhood parkland, Township residents for the most part are under-provided with neighborhood parkland. Currently, the Township does not own or maintain any improved neighborhood parkland. Only three of the eleven neighborhoods within the Township have some neighborhood parkland element, either in the form of an elementary school playground, church play yard, or fire company facilities. Because development has occurred so rapidly over the past several decades, many sub-neighborhoods are completely developed, thereby excluding any neighborhood park development. It is crucial to target neighborhood parklands in those areas that are awaiting development so that as lands are developed, recreational lands can be dedicated to the Township via the mandatory dedication process. *It is recommended that the Township begin immediately to acquire needed parkland associated with ultimate build-out, once existing demand has been met.*

The following discussion outlines particular ground rules for the Township to follow in its quest for neighborhood parkland acquisition. First, Township officials should rely on mandatory dedication of land and/or fees in lieu thereof to acquire and/or purchase needed recreation land. Second, the Township should attempt to amass all dedicated or purchased parkland in one (or two if needed) nearby centralized location of the neighborhood.

In addition to these general initial guidelines, several other requirements should be followed. Specifically, the land dedicated by developers should be of appropriate topographical characteristics for intended recreational uses. Dedicated and/or purchased parkland should be designed so that safe and convenient access is provided to all existing and future residents. Parkland should also be configured in such a way that intended recreational uses can be accommodated. These guidelines should be strictly adhered to in order for the Township to amass needed neighborhood parkland quickly and efficiently.

The Spatial Park Analysis (Chapter VI) details the methods that were used to determine needed sizes and locations of respective neighborhood parks. In addition, recommended facility improvements were derived with several considerations. First Question 13 of the Facility Survey asked respondents to select their family's three favorite neighborhood park improvements. Results from this question were tallied Township-wide to determine what improvements should be provided at every neighborhood park. Picnic facilities, playgrounds, and open play spaces were generally demanded higher than other possible improvements. Rest rooms and drinking fountains also scored high. Other support improvements, such as landscaping, signs, waste cans, park benches, and a bike rack are important to the appearance and utility of neighborhood parks. Given these preferences, the following presents generic neighborhood park improvements (and their cost) that should be provided at each neighborhood park:

Improvements	Cost*
4-table picnic pavilion	\$ 4,840
4 picnic tables	\$ 2,420
modular playground equipment and surfaces	\$11,000
water fountain	\$ 970
landscaping	\$ 1,000
park sign	\$ 300
waste cans (3)	\$ 360
park benches (3)	\$ 1,090
bike rack (1)	\$ 485
open play area (grading & seeding)	\$ 2,535
*1989 cost plus 10% inflation factor	\$25,000

To this list, specific neighborhood park enhancements were added to reflect localized activity preferences. By cross tabulating the results from Questions 1 and 13 of the Facility Survey, specific neighborhood activity preferences were determined.

Based upon the goals expressed for this plan, NRPA locational criteria, publicly expressed recreation preferences, and the analysis presented in Chapter VI, the following pages will present a summary of the neighborhood park recommendations for each of the Township's planned growth neighborhoods.

NEIGHBORHOOD 1

POPULATION VS. NEIGHBORHOOD PARKLAND

<u>Year</u>	<u>Population</u>	<u>Acres Needed</u>
1990	2,876	5.8
2000	3,269	6.5
Ultimate Build-out	4,433	8.9

PUBLIC PARKLAND PROVIDED

None.

RECOMMENDATION:

1. Provide one 5-acre park with linear path easement along floodplain of Conestoga Creek, and access to Conestoga Boulevard; and,
2. Provide one 4-acre park behind AT&T property and west of proposed Good Drive.



FACILITY IMPROVEMENTS AND COSTS

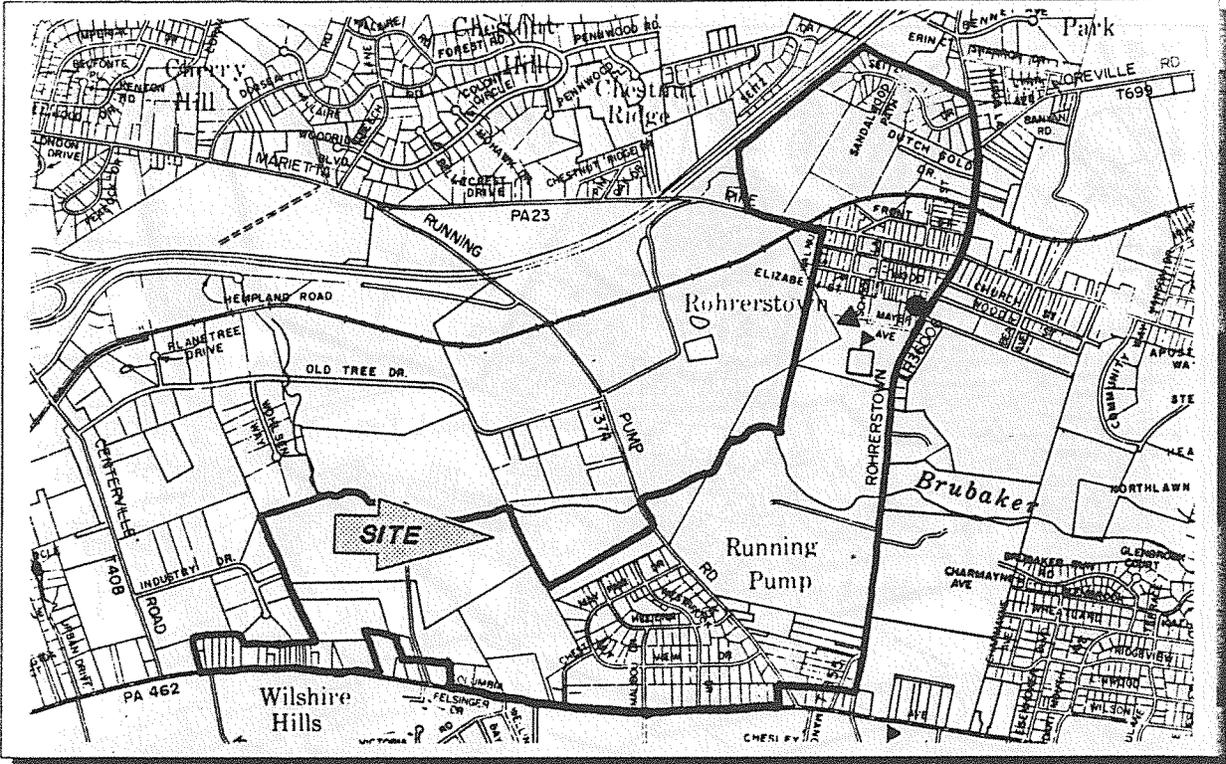
<u>5-Acre Site</u>		<u>4-Acre Site</u>	
<u>Improvements</u>	<u>Cost</u>	<u>Improvements</u>	<u>Cost</u>
4-table picnic pavilion	\$ 4,840	4-table picnic pavilion	\$ 4,840
4 picnic tables	2,420	4 picnic tables	2,420
modular playground and surfaces	11,000	modular playground and surfaces	11,000
basketball court	14,520	water fountain	970
tennis court	26,620	landscaping	1,000
water fountain	970	park sign	300
landscaping	1,000	3 waste receptacles	360
park sign	300	3 park benches	1,090
3 waste receptacles	360	1 bike rack	485
3 park benches	1,090	open play area (grading and seeding)	2,535
1 bike rack	485	1 baseball/softball diamond	<u>30,250</u>
open play area (grading and seeding)	2,535	Improvement Costs	55,250
3,200 lineal feet path	<u>12,992</u>	Land Value	<u>110,000</u>
Total Improvement Costs	79,132	TOTAL SITE COST	\$165,250
Land Value	<u>137,500</u>		
TOTAL SITE COST	\$216,632		

ULTIMATE BUILD-OUT PER CAPITA COST FOR NEIGHBORHOOD PARK(S) AND IMPROVEMENTS

— \$86.10

OTHER COMMENTS: Development of 4-acre (Rohrerstown) site should be designed with pedestrian linkages (sidewalks, paths) to other existing homes of Rohrerstown and Barrcrest and proposed residence (e.g., LT Associates). Pedestrian safety to and from this park should be of concern, particularly at any at-grade crossing of the Conrail line and the proposed Good Drive, both of which traverse the neighborhood.

NEIGHBORHOOD 2



POPULATION VS. NEIGHBORHOOD PARKLAND

<u>Year</u>	<u>Population</u>	<u>Acres Needed</u>
1990	725	1.5
2000	1,022	2.0
Ultimate Build-Out	1,895	3.8

PUBLIC PARKLAND PROVIDED

Rohrerstown Elementary School - 9.5 Acres

RECOMMENDATION: Acquisition of 2-acre park west of Running Pump Road along Brubaker Run. This additional park is necessary because of the distance between the Rohrerstown Elementary School and residential growth areas west of Running Pump Road.

FACILITY IMPROVEMENTS & COSTS

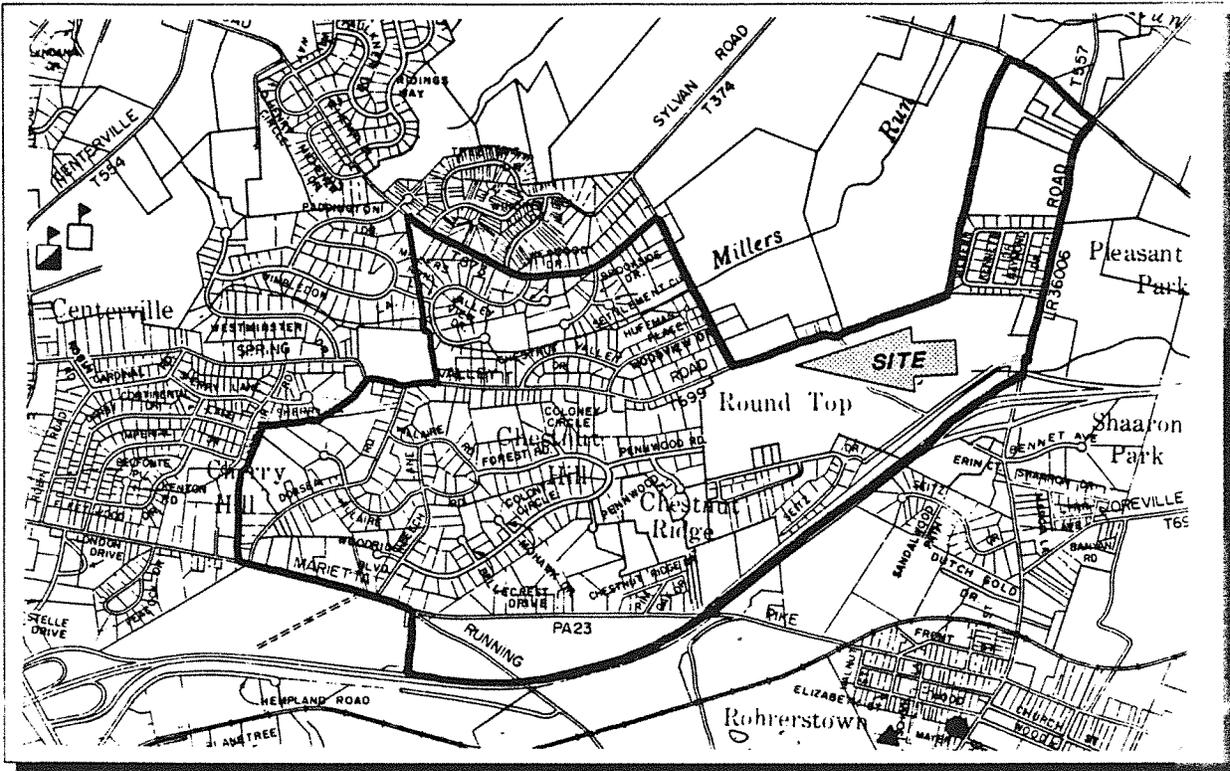
<u>2-Acre Site</u>	
<u>Improvements</u>	<u>Cost</u>
4-table picnic pavilion	\$ 4,840
4 picnic tables	2,420
modular playground & surfaces	11,000
water fountain	970
landscaping	1,000
park sign	300
3 waste receptacles	360
3 park benches	1,090
1 bike rack	485
open play area (grading & seeding)	<u>2,535</u>
Total Improvement Costs	\$25,000
Land Value	\$55,000
TOTAL SITE COST	\$80,000

ULTIMATE BUILD-OUT PER CAPITA COST FOR NEIGHBORHOOD PARK(S) AND IMPROVEMENTS — \$42.22*

OTHER COMMENTS: Considerable development acreage remains within area proposed for new neighborhood park. Actual construction of the park could await such development. Park should be situated to serve existing residents of Chestnut View.

*This figure does not account for existing elementary school site and improvements.

NEIGHBORHOOD 3



POPULATION VS. NEIGHBORHOOD PARKLAND

<u>Year</u>	<u>Population</u>	<u>Acres Needed</u>
1990	1,092	2.2
2000	1,314	2.6
Ultimate Build-Out	1,966	3.9

PUBLIC PARKLAND PROVIDED

None.

RECOMMENDATION: Provide one 3.9-acre park at southeast corner of intersection of Spring Valley and Sylvan Roads.

FACILITY IMPROVEMENTS & COSTS

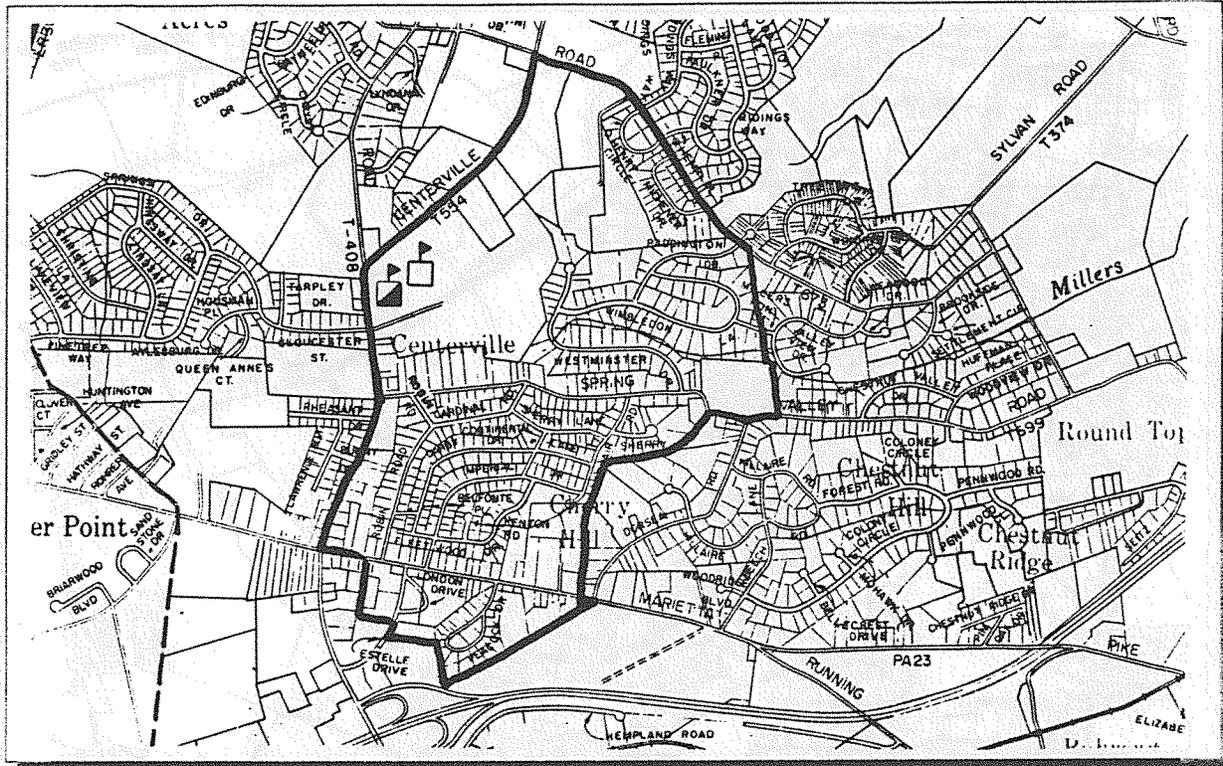
<u>3.9-Acre Site</u>	
<u>Improvements</u>	<u>Cost</u>
4-table picnic pavilion	\$ 4,840
4 picnic tables	2,420
modular playground & surfaces	11,000
water fountain	970
landscaping	1,000
park sign	300
3 waste receptacles	360
3 park benches	1,090
1 bike rack	485
open play area (grading & seeding)	2,535
fossil site exhibit	500
tennis court	<u>26,620</u>
Total Improvement Costs	\$ 52,120
Land Value	<u>\$107,250</u>
TOTAL SITE COST	\$159,370

ULTIMATE BUILD-OUT PER CAPITA COST FOR NEIGHBORHOOD PARK(S) AND IMPROVEMENTS

— \$81.06

OTHER COMMENTS: This site should include an exhibit that describes a nearby trilobite fossil site, the fossils from which are on exhibit at Yale University. Given the amount and proximity of vacant agriculturally-zoned land, it is likely that the ultimate build-out of this neighborhood will increase as a result of future rezoning. If and when such rezoning occurs, local officials should adjust needed neighborhood parklands accordingly. To improve safety, the Township should consider provision of sidewalks along Sylvan and Spring Valley Roads.

NEIGHBORHOOD 4



POPULATION VS. NEIGHBORHOOD PARKLAND

<u>Year</u>	<u>Population</u>	<u>Acres Needed</u>
1990	1,430	2.9
2000	1,573	3.7
Ultimate Build-Out	1,994	4.0

PUBLIC PARKLAND PROVIDED

Centerville Elementary School
Centerville Junior High School

RECOMMENDATION: No additional land is needed.

FACILITY IMPROVEMENTS & COSTS

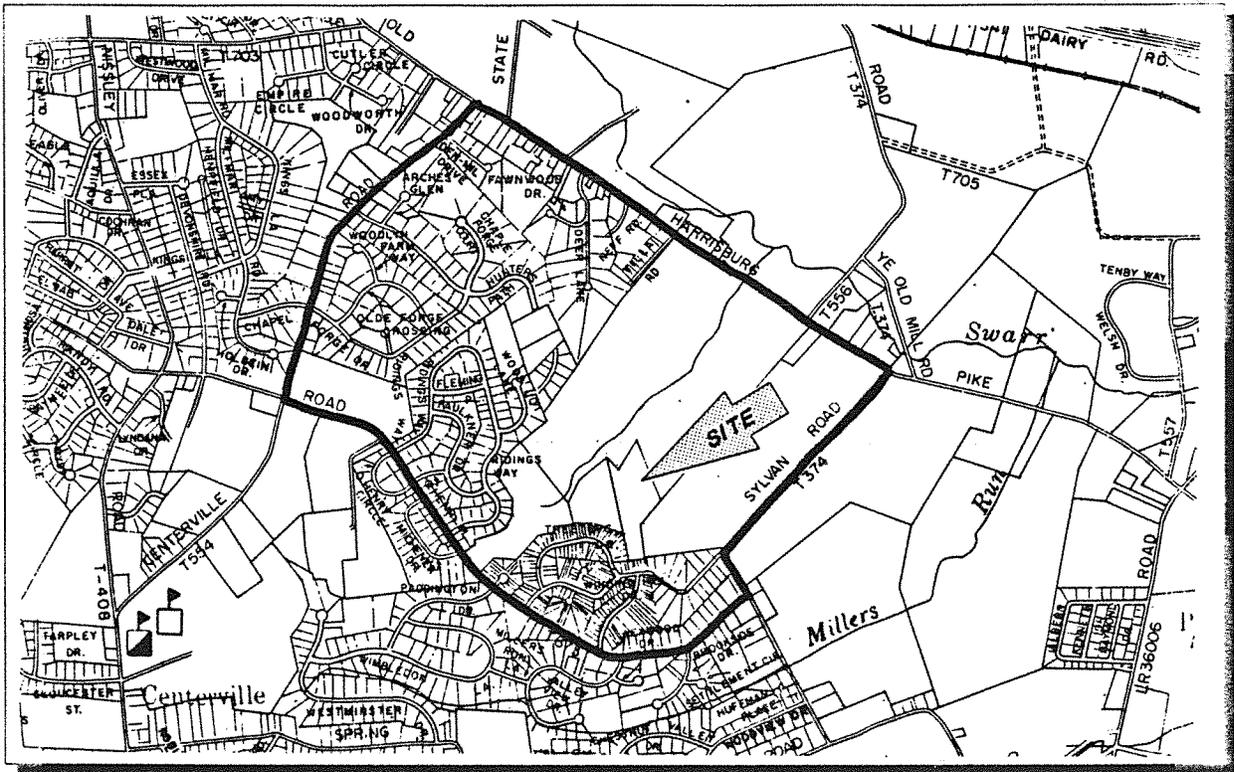
Existing facilities provide superior recreation service.

ULTIMATE BUILD-OUT PER CAPITA COST FOR NEIGHBORHOOD PARK(S) AND IMPROVEMENTS

— N/A

OTHER COMMENTS: Although existing parks are classified as "community," rather than "neighborhood" parks, they provide access to recreation amenities that are often part of neighborhood-based parks. Furthermore, given the extensive deficiencies of most other neighborhoods, provision of a duplicative "neighborhood" park in this area would not be cost effective. Residents south of Marietta Pike do not have convenient pedestrian access.

NEIGHBORHOOD 5



POPULATION VS. NEIGHBORHOOD PARKLAND

<u>Year</u>	<u>Population</u>	<u>Acres Needed</u>
1990	1,279	2.6
2000	1,645	3.3
Ultimate Build-Out	2,727	5.5

PUBLIC PARKLAND PROVIDED

None.

RECOMMENDATION: Acquire one 5.5-acre park on a portion of the 8.8 acre John L. Landis property located in the southcentral part of the neighborhood.

FACILITY IMPROVEMENTS & COSTS

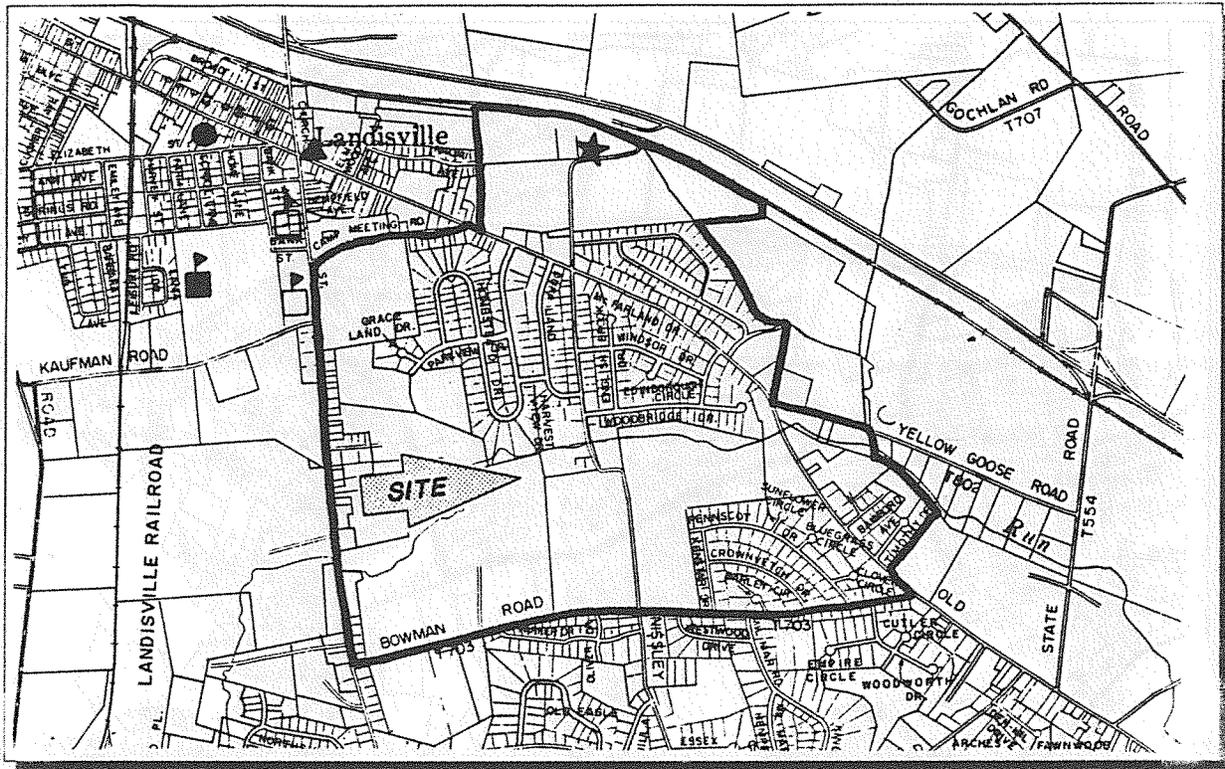
<u>5.5-Acre Site</u>	
<u>Improvements</u>	<u>Cost</u>
4-table picnic pavilion	\$ 4,840
4 picnic tables	2,420
modular playground & surfaces	11,000
water fountain	970
landscaping	1,000
park sign	300
3 waste receptacles	360
3 park benches	1,090
1 bike rack	485
open play area (grading & seeding)	2,535
tennis court	<u>26,620</u>
Total Improvement Costs	\$ 51,620
Land Value	<u>\$151,250</u>
TOTAL SITE COST	\$202,870

ULTIMATE BUILD-OUT PER CAPITA COST FOR NEIGHBORHOOD PARK(S) AND IMPROVEMENTS

— \$74.39

OTHER COMMENTS: This site could be easily linked with existing and future developments within this neighborhood via a system of cross-country greenways that follow steep terrain and a tributary of Swarr Run. New developments within this neighborhood should be encouraged (or required) to provide such greenways.

NEIGHBORHOOD 6



POPULATION VS. NEIGHBORHOOD PARKLAND

<u>Year</u>	<u>Population</u>	<u>Acres Needed</u>
1990	1,789	3.6
2000	2,165	4.3
Ultimate Build-Out	3,279	6.6

PUBLIC PARKLAND PROVIDED

Amos Herr Community Park serves residents of Olde Forge Crossing.

RECOMMENDATION: Provide one 6-acre park located along Swarr Run and the southern edge of the existing subdivisions. This park is necessary to avoid the need for pedestrians to cross Old Harrisburg Pike.

FACILITY IMPROVEMENTS & COSTS

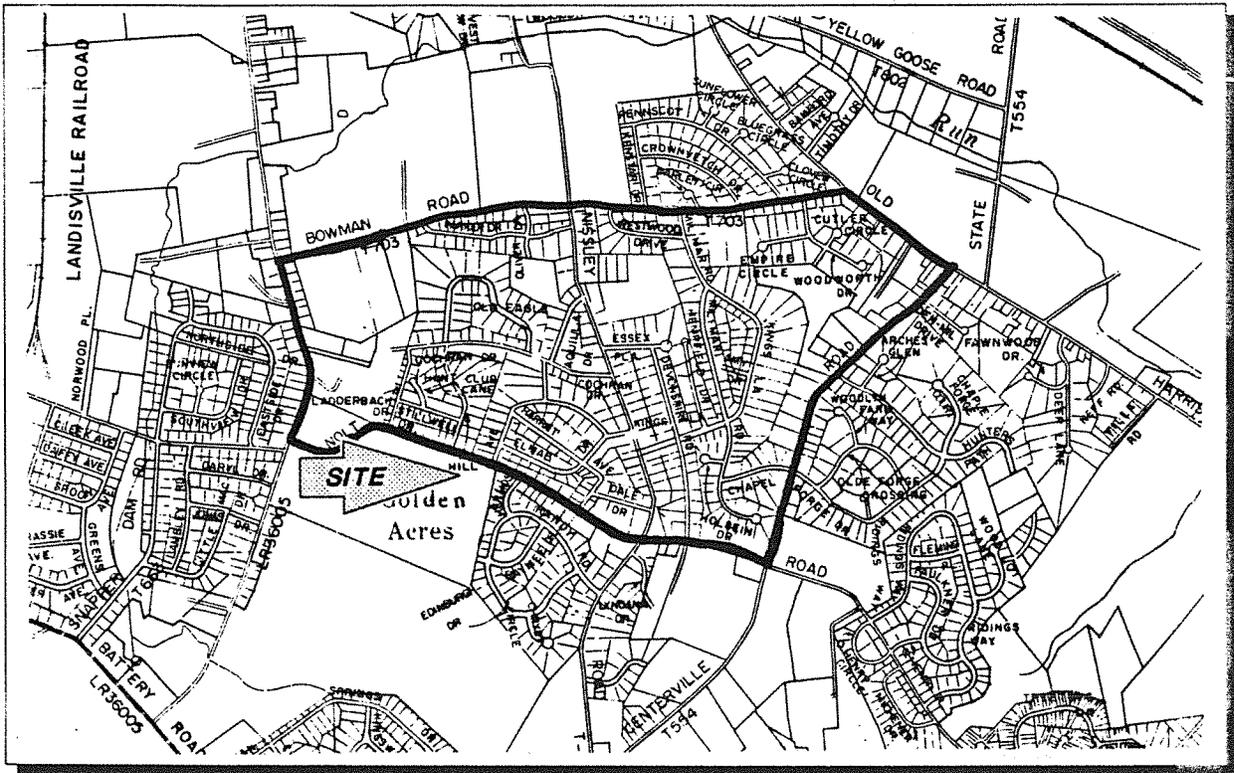
<u>Improvements</u>	<u>Cost</u>
4-table picnic pavilion	\$ 4,840
4 picnic tables	2,420
modular playground & surfaces	11,000
water fountain	970
landscaping	1,000
park sign	300
3 waste receptacles	360
3 park benches	1,090
1 bike rack	485
open play area (grading & seeding)	2,535
baseball/softball diamond	30,250
basketball court	14,520
Total Improvement Costs	\$ 94,770
Land Value	\$181,500
TOTAL SITE COST	\$276,270

ULTIMATE BUILD-OUT PER CAPITA COST FOR NEIGHBORHOOD PARK(S) AND IMPROVEMENTS

— \$84.25

OTHER COMMENTS: The vast areas of developable land within this neighborhood afford the opportunity to link future subdivisions with this neighborhood park. Subdivision design should require such linkage via linear paths or sidewalks.

NEIGHBORHOOD 7



POPULATION VS. NEIGHBORHOOD PARKLAND

<u>Year</u>	<u>Population</u>	<u>Acres Needed</u>
1990	1,256	2.5
2000	1,417	2.8
Ultimate Build-Out	1,896	3.8

PUBLIC PARKLAND PROVIDED

None.

RECOMMENDATION: Development of a shared 4.8-acre Neighborhoods 7 & 8 park to be located in the northeast corner of Township-owned property situated south of Nolt Road and west of Hermosa Avenue.

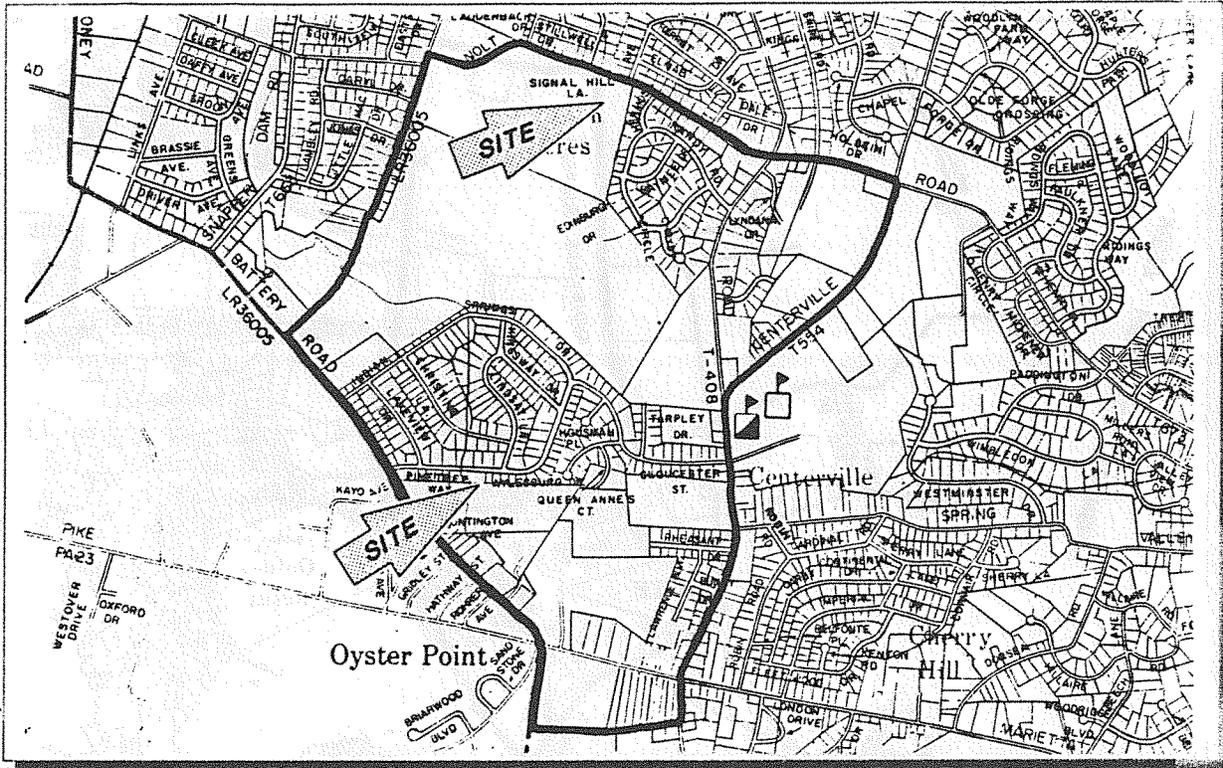
FACILITY IMPROVEMENTS & COSTS

<u>4.8-Acre Site</u>	
<u>Improvements</u>	<u>Cost</u>
4-table picnic pavilion	\$ 4,840
4 picnic tables	2,420
modular playground & surfaces	11,000
water fountain	970
landscaping	1,000
park sign	300
3 waste receptacles	360
3 park benches	1,090
1 bike rack	485
open play area (grading & seeding)	2,535
1 baseball/softball diamond	30,250
2 soccer/hockey field nets	1,935
1 basketball court	<u>14,520</u>
Total Improvement Costs	\$71,705
Land Value - already owned	\$ <u>0</u>
TOTAL SITE COST	\$71,705

ULTIMATE BUILD-OUT PER CAPITA COST FOR NEIGHBORHOOD PARK(S) AND IMPROVEMENTS
— \$84.32 (calculated with Neighborhood 8)

OTHER COMMENTS: This neighborhood's saturated development pattern confounds attempts to provide safe and convenient child access to land within Neighborhood 7. However, the joint park serving Neighborhoods 7 & 8 allow for pedestrian movements upon internal local streets in Neighborhood 7, with park access at intersection of Hermosa Avenue and Nolt Road. It is imperative that pedestrian crossing signs and reduced vehicle speed limits be placed along Nolt Road to enhance safety. Additionally, sidewalks would be very helpful along Nolt and Nissley Roads.

NEIGHBORHOOD 8



POPULATION VS. NEIGHBORHOOD PARKLAND

<u>Year</u>	<u>Population</u>	<u>Acres Needed</u>
1990	1,061	2.1
2000	1,283	2.6
Ultimate Build-Out	1,940	3.9

PUBLIC PARKLAND PROVIDED

East Hempfield Golf Course and Sports Complex

RECOMMENDATION: Development of a 2.9-acre neighborhood park located on and around the Municipal Authority site south of Pinetree Way. This park is meant to serve residents of Raleigh Ridge, Indian Springs Estates, and future developments to the south. The northern reaches of this neighborhood will be served by a 4.8-acre park serving both Neighborhoods 7 & 8.

FACILITY IMPROVEMENTS & COSTS

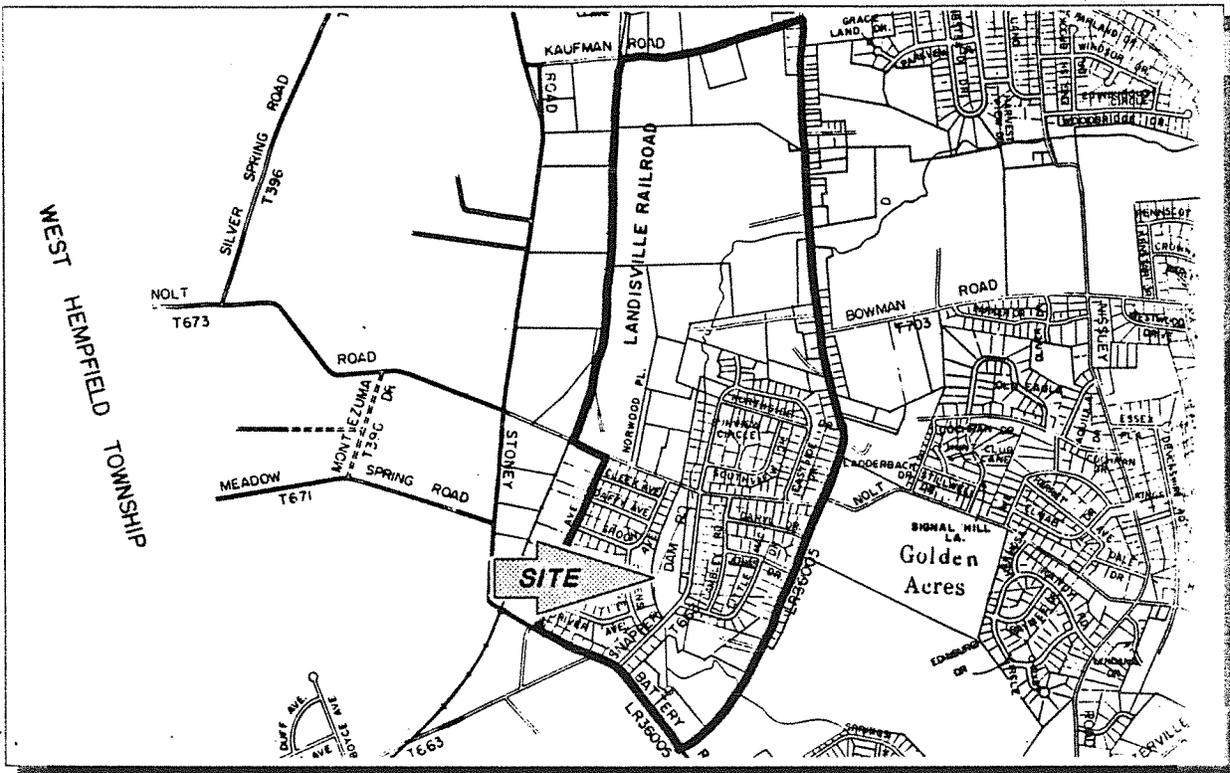
<u>Improvements</u>	<u>Cost</u>
4-table picnic pavilion	\$ 4,840
4 picnic tables	2,420
modular playground & surfaces	11,000
water fountain	970
landscaping	1,000
park sign	300
3 waste receptacles	360
3 park benches	1,090
1 bike rack	485
open play area (grading & seeding)	2,535
1 foot bridge	\$15,000
Total Improvement Costs	\$40,000
Land Value* (2 acres)	\$55,000
<u>TOTAL SITE COST</u>	\$80,000

*1 acre already owned by Municipal Authority

ULTIMATE BUILD-OUT PER CAPITA COST FOR NEIGHBORHOOD PARK(S) AND IMPROVEMENTS — \$84.32 (calculated with Neighborhood 7)

OTHER COMMENTS: Given the expanses of undeveloped land south of Pinetree Way, future developments should be required to provide pedestrian linkages to the proposed neighborhood park. A pedestrian easement should be sought between Hermosa Avenue and the shared Neighborhoods 7 & 8 park.

NEIGHBORHOOD 9



POPULATION VS. NEIGHBORHOOD PARKLAND

<u>Year</u>	<u>Population</u>	<u>Acres Needed</u>
1990	718	1.4
2000	967	1.9
Ultimate Build-Out	1,709	3.4

PUBLIC PARKLAND PROVIDED

19-acre Landisville Elementary School

RECOMMENDATION: Acquisition and development of 2-acre park amid Millcreek and Highland Greens subdivisions and along Swarr Run. This additional park is needed to provide convenient pedestrian access for residents in southern part of neighborhood who live beyond ½ mile service area of Landisville Elementary School.

FACILITY IMPROVEMENTS & COSTS

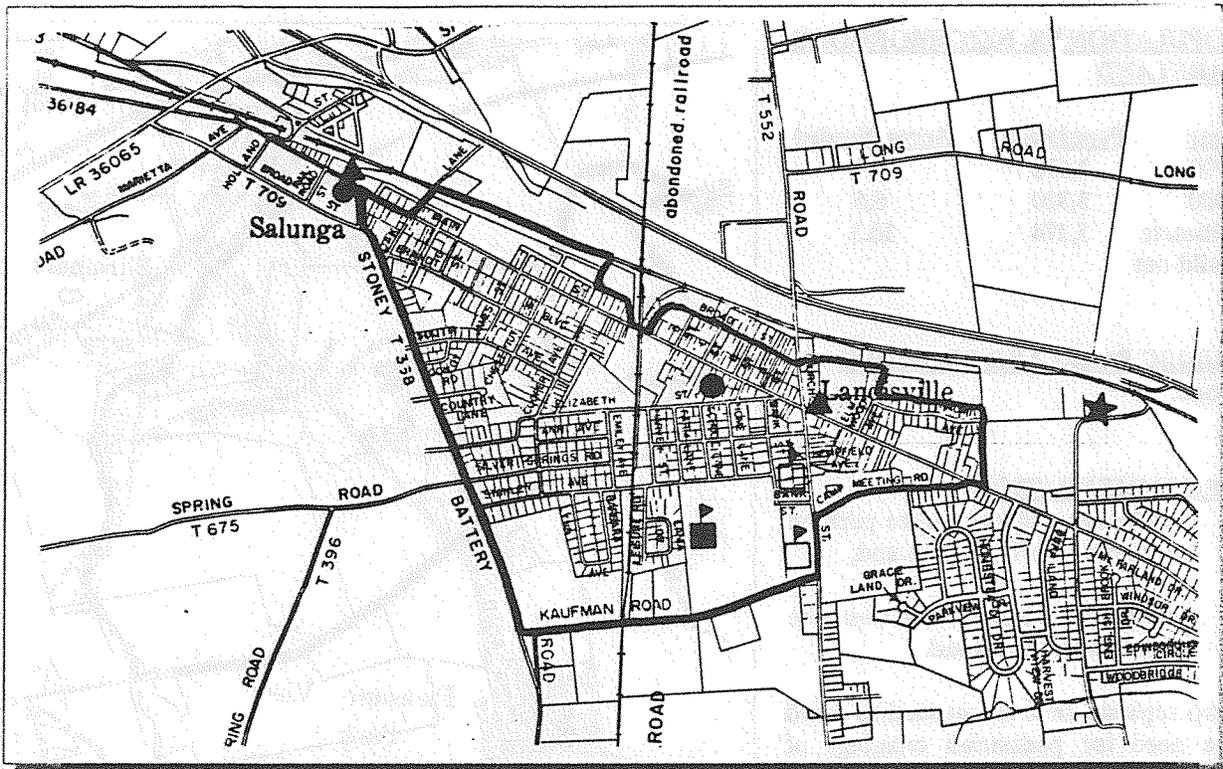
<u>2-Acre Site</u>	
<u>Improvements</u>	<u>Cost</u>
4-table picnic pavilion	\$ 4,840
4 picnic tables	2,420
modular playground & surfaces	11,000
water fountain	970
landscaping	1,000
park sign	300
3 waste receptacles	360
3 park benches	1,090
1 bike rack	485
open play area (grading & seeding)	<u>2,535</u>
Total Improvement Costs	\$25,000
Land Value	<u>\$55,000</u>
TOTAL SITE COST	\$80,000

ULTIMATE BUILD-OUT PER CAPITA COST FOR NEIGHBORHOOD PARK(S) AND IMPROVEMENTS

— \$46.81. This figure does not take into account the extensive facilities already provided at Landisville Elementary School.

OTHER COMMENTS: This proposed park is only meant to provide convenient access for the southern half of this neighborhood. The existing facilities at the Landisville Elementary School amply serve the northern half.

NEIGHBORHOOD 10



POPULATION VS. NEIGHBORHOOD PARKLAND

<u>Year</u>	<u>Population</u>	<u>Acres Needed</u>
1990	1,334	2.7
2000	1,395	2.8
Ultimate Build-Out	1,542	3.1

PUBLIC PARKLAND PROVIDED

Hempfield High School
Salunga Fire Company

RECOMMENDATION: No additional parks needed.

FACILITY IMPROVEMENTS & COSTS

Existing facilities are adequate.

ULTIMATE BUILD-OUT PER CAPITA COST FOR NEIGHBORHOOD PARK(S) AND IMPROVEMENTS
— N/A

OTHER COMMENTS:

NEIGHBORHOOD 11

POPULATION VS. NEIGHBORHOOD PARKLAND

<u>Year</u>	<u>Population</u>	<u>Acres Needed</u>
1990	2,678	5.4
2000	3,310	6.6
Ultimate Build-out	5,174	10.3

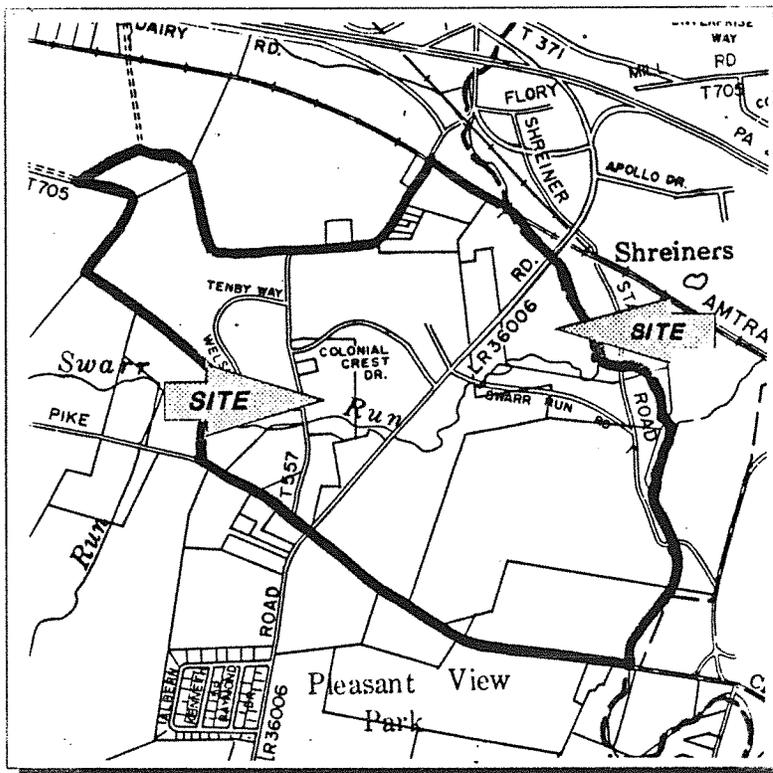
PUBLIC PARKLAND PROVIDED

None.

RECOMMENDATION:

1. Development of one 5-acre park on land owned by Township; and,
2. Acquisition of 5.3 acres on west side of McGovernville Road.

Two separate sites are needed to avoid the need for pedestrian crossings of McGovernville Road.



FACILITY IMPROVEMENTS AND COSTS

<u>5-Acre Site</u>		<u>5.3-Acre Site</u>	
<u>Improvements</u>	<u>Cost</u>	<u>Improvements</u>	<u>Cost</u>
4-table picnic pavilion	\$ 4,840	4-table picnic pavilion	\$ 4,840
4 picnic tables	2,420	4 picnic tables	2,420
modular playground and surfaces	11,000	modular playground and surfaces	11,000
water fountain	970	water fountain	970
landscaping	1,000	landscaping	1,000
park sign	300	park sign	300
3 waste receptacles	360	3 waste receptacles	360
3 park benches	1,090	3 park benches	1,090
1 bike rack	485	1 bike rack	485
open play area (grading and seeding)	2,535	open play area (grading and seeding)	2,535
1 baseball/softball diamond	30,250	1 volleyball court	4,180
Total Improvement Costs	55,250	1 basketball court	14,520
Land Value (already owned)	0	Total Improvement Costs	43,700
		Land Value	145,750
TOTAL SITE COST	\$55,250	TOTAL SITE COST	\$189,450

ULTIMATE BUILD-OUT PER CAPITA COST FOR NEIGHBORHOOD PARK IMPROVEMENTS — \$73.87

OTHER COMMENTS: Future high density developments should require pedestrian linkage with these sites.

NEIGHBORHOOD PARKS COST SUMMARY				
Neighborhood	Total Recommended Acreage	Land Value	Improvement Costs	Total Costs
1	9 ac.	\$247,500	\$134,382	\$381,882
2	2 ac.	\$55,000	\$25,000	\$80,000
3	3.9 ac.	\$107,250	\$52,120	\$159,370
4	0	0	0	0
5	5.5 ac.	\$151,250	\$51,620	\$202,870
6	6 ac.	\$181,500	\$94,770	\$276,270
7	4.8 ac.	0	\$71,705	\$71,705
8	2.9 ac.	\$40,000	\$40,000	\$80,000
9	2 ac.	\$55,000	\$25,000	\$80,000
10	0 ac.	0	0	0
11	10.3 ac.	\$145,750	\$98,950	\$244,700
Total	46.4 ac.	\$983,250	\$593,552	\$1,576,799

4. LINEAR PARKS

As presented in Chapter VI, the Township has many natural and man-made features that offer opportunities for linear park development. The use of these features can often result in "long-run" features that link communities. However, the actual implementation of such "long-run" trails often involves considerable commitment by local officials and debate among adjoining property owners. In any event, results from the Attitudinal Surveys reveal a very strong preference for linear parks which should not be overlooked. Local officials should stand ready to seize any opportunities for the development of these special features.

Aside from the long-run linear parks discussed above, Township land use policies can be used to create opportunities for "short-run" linear park development. Short-run linear parks are described as ones that serve pedestrian movements within, or to the edge of, the neighborhood. Local zoning regulations should provide flexible clustering provisions that set aside on-site corridors for pedestrian/bike paths, while at the same time offer slight density bonuses for path construction.

Similarly, subdivision/land development policies should be amended to require the provision of sidewalks throughout residential neighborhoods. Alternatively, such sidewalks can be waived in those instances where lots adjoin or have direct access to off-road linear parks. With these revised policies, short-run linear parks are much more achievable than their long-run counterparts.

Linear parks are most enjoyable when they feature some natural beauty and/or offer some use theme. For example, a walking trail along a wooded stream bed provides a serene relaxing experience that would be enjoyed by everyone. Fitness trails can be used by active fitness-conscious persons as a welcomed alternative to their routine exercise programs. Five-senses trails can provide learning opportunities for handicapped persons and young children. Serpentine curved bike paths can challenge young energetic bicyclists. Measured walking paths enable elderly persons to monitor their exercise and endurance levels. These few examples point to the wide variety of themes that can be applied along a hiking/biking path. Paths should be designed to accentuate some naturally existing condition or incorporate a thematic treatment. The actual configuration and surfacing of the paths should consider existing site conditions, the path's intended

use, and those other nearby recreation activities. The NRPA recommends that trails be no greater than ten (10) feet in width and that their slopes average no more than five (5) percent with a maximum grade of fifteen (15) percent.

Design standards imposed upon park construction should:

1. Seek to follow natural on-site features (streams, ridges, hedgerows, etc.),
2. Serve or abut as many properties as possible,
3. Link properties with on-site or nearby civic amenities (e.g., schools and parks),
4. Be designed with an all-weather surface that can accommodate expected types and volumes of use (bike vs. pedestrian),
5. Provide slopes that allow for storm water drainage, but do not require extreme physical exertion on the part of users,
6. Minimize the number of road crossings (particularly arterials and collectors); and,
7. Be fitted with low-level lighting that enables safe night usage without casting undue glare on nearby properties.

Finally, requirements governing the provision of linear parks should also include legally binding maintenance responsibilities. Sometimes municipalities wish to have such facilities dedicated under which they assume all operative and maintenance responsibilities. Other times, the developer or local homeowners associations assume such responsibilities. In any event, such arrangements must be secured and understood prior to approval. This, too, can be specified within the local ordinance.

B. MANDATORY DEDICATION (OR FEE-IN-LIEU THEREOF)

In order to assure that future inhabitants of the Township have adequate new recreation opportunities provided, it is recommended that the Township require the dedication/or fee-in-lieu thereof, for open space. Specifically, the Township can require developers to dedicate particular areas within the proposed development for recreation purposes. As an option, the Township can allow the developer to make payment equal to the fair market value of the open space which would have otherwise been required for dedication. However, developers must agree to make payment rather than dedicate lands. Then, this payment would be kept in a fund that must be used within three years to provide neighborhood residents with a new recreation facility and/or facility improvements.

This approach is fairly widespread within Pennsylvania and is suggested by the State in its publication entitled Adding Parkland to Your Community Through Mandatory Dedication (July 1982). Therefore, from a general application standpoint, this approach has proven quite successful throughout the region. It has also been specifically enabled under recent amendments to the Pennsylvania Municipalities Planning Code, by Act 170.

One element fundamental to this approach is the calculation of how much land shall be dedicated for each new dwelling unit proposed. In order to assure that these requirements are logical, reasonable, and legally defensible, the following analysis is offered:

The NRPA suggests that local governments provide each of several types of parks; the following table lists those parks and the recommended acreage needed to serve a specified unit of population:

NRPA LOCAL PARK STANDARDS

<u>Park Type</u>	<u>Recommended Acreage/1000 Population</u>
Playlots	1 — 0
Neighborhood Parks	1 — 2
Community Parks	5 — 8
Total	7 to 11 ac./1,000 population

From the preceding table, it can be seen that seven to eleven acres of local parkland should be provided for each 1000 persons. Again, the Township has opted to use a total acreage figure of 10 acres per 1,000 persons in its calculation of dedicated land for each new dwelling unit. In order to derive a per unit or per lot standard, the 1,000 population figure can be divided by the 1990 average household size, estimated for East Hempfield Township in this study. By applying this average household size which is estimated to be 2.59 persons per household, the following calculation results:

$$1000 \text{ persons} / 2.59 \text{ persons per dwelling unit} = 386 \text{ dwellings}$$

Next, the recommended acreage (10 ac.) is divided by the total number of dwellings that make up the 1,000 population, yielding the following equation:

$$10 \text{ ac.} / 386 \text{ dwellings} = .026 \text{ acres/dwelling}$$

From these calculations it becomes apparent that the dedication of .026 acres for each lot or dwelling unit proposed would be consistent with the NRPA recommendations for local parkland acquisition.

It is also important that lands dedicated to the Township be suitable for immediate recreation improvement. The Subdivision and Land Development Ordinance should be amended to specify that dedicated open space must be suitable play areas. This requirement need not be applied to dedicated parklands that complement some valuable nature-based resource. A recommended sample ordinance is contained in Appendix H of this report.

As an alternative to the dedication of land, the Township may collect a fee-in-lieu thereof equal to the fair market value of such land that would have otherwise been required for dedication.

This approach can only be used in those instances where the developer and Township agree on the fee-in-lieu. Such funds cannot be used merely to maintain existing facilities, but must be used to purchase new parkland or new equipment for existing parks that already serve the development's residents.

Funds collected under this approach must be used to provide for recreation facilities that are accessible to residents of the proposed development. In determining accessibility to the park, local officials should be guided by the NRPA service areas for the various park types. Therefore, should a developer agree to pay a fee-in-lieu of dedication for its share of neighborhood parkland, the monies should be spent within one-half mile of the development site. For fees assessed for community parkland, such monies should be spent within two miles of the development site.

To calculate the fees-in-lieu of dedicated open space, the Township should determine the amount of land required for dedication and then rely on a Member of the Appraisal Institute of the American Institute of Real Estate Appraisers (MAI) appraisal to prescribe the fee

amount. All fees collected must be spent within three (3) years or face possible reimbursement to the developer or residents.

An average figure of \$27,500 per acre for vacant residentially-zoned land was used to determine the amount of the fee-in-lieu of per dwelling units or lots. This figure is based upon discussions with Township staff and upon the values of various recent public (i.e., Township and School District) land acquisitions. If each dwelling unit or lot is required to dedicate .026 acres of open space or donate a fee equal to that acreage's market value; then, each should pay about \$715 for a recreation fee-in-lieu of dedications.

By applying the \$715/unit fee to the Township's projected growth (described in Chapter IV), the Township-wide average revenue for the next ten years is calculated to be:

<u>Population Growth (1990-2000)</u>	<u>1990 Average Persons Per Household</u>	<u>New Dwelling Units</u>	<u>Fees In-Lieu-Of Dedication/Unit</u>	<u>Total Fee In Lieu Of</u>	<u>Number Years</u>	<u>Total Fee-In-Lieu/Year</u>
3,416	÷ 2.59	= 1,319	x \$715	= \$943,085	+ 10	= \$94,309

These estimated revenues assume that no future dedicated open space will be required or provided. They provide a benchmark for assessing the expected revenues from the mandatory dedication (fee-in-lieu thereof) process.

The following table illustrates the comparison between land dedication and fee-in-lieu thereof related to projected growth between 1990 and 2000.

<u>Year</u>	<u>Projected Population</u>	<u>Net Change</u>	<u>New Units</u>	<u>Land Dedication Per Unit</u>	<u>or Fee-In-Lieu Thereof/Unit</u>	<u>Total Land Dedicated</u>	<u>or Total Revenue Collected</u>
1990	17,987	—	—	—	—	—	—
2000	21,403	3,419	1,319	.026 ac.	\$715	34.3 ac.	\$943,250

If the Township accepts only land, then it would be expected to receive 34.3 acres by the year 2000. There are, of course, hundreds of combinations of land and revenue that can be derived in order to achieve desired recreation improvements. This table serves as a comparison for which future decisions can be based.

The following list summarizes those recommended parkland acquisition and improvement costs, including land costs. As a comparison, the revenues and/or lands anticipated from the mandatory dedication process are listed to illustrate the impact that process has on the funding of recreational improvements. This revenue is then subtracted from the total expenses associated with land acquisition and facility improvements to arrive at a balance.

SUMMARY OF RECOMMENDED PARKLANDS AND IMPROVEMENTS		
Park Name	Needed Acreage (Value)	Facility Improvements
Amos Herr Community Park	0 (NA)	\$250,145
Nolt Road Community Park	0 (NA)	\$107,135
Neighborhood 1 Parks	9.0 (\$247,500)	\$134,382
Neighborhood 2 Parks	2.0 (\$55,000)	\$ 25,000
Neighborhood 3 Parks	3.9 (\$107,250)	\$ 52,120
Neighborhood 4 Parks	0 (NA)	\$ 0
Neighborhood 5 Parks	5.5 (\$151,250)	\$ 51,620
Neighborhood 6 Parks	6 (\$181,500)	\$ 94,770
Neighborhood 7 Parks	0 (NA)	\$ 71,705
Neighborhood 8 Parks	2 (\$55,000)	\$ 40,000
Neighborhood 9 Parks	2 (\$55,000)	\$ 25,000
Neighborhood 10 Parks	0 (NA)	\$ 0
Neighborhood 11 Parks	5.3 (\$145,750)	\$ 98,950
	35.7 (\$981,750)	\$950,827

Total recommended parkland and improvement costs - \$1,932,577
 Potential revenues from mandatory dedication (1900-2000) - 34.3 ac. or \$943,250
 Total deficit - \$989,327

This deficit represents revenues that will need to be generated beyond those of the mandatory dedication process, if all facility recommendations are to be implemented. It is noteworthy that the Township's annual budget allocation of \$100,000 for recreation capital improvements would be enough to undertake all of those improvements recommended."

C. POLICE PROTECTION

Police protection is an obvious public service that is demanded by Township residents and businesses. The traditional role of the police involves three functions—law enforcement, order maintenance, and community service. Law enforcement involves the application of legal sanctions, usually arrest, to persons who injure or deprive innocent victims of life or property. Order maintenance involves the handling of disputes, or of behavior which threatens to produce disputes. The third aspect of the police function, and the one most likely to occupy the major portion of the officers' time, varies from community to community, according to tradition and local ordinances. These are activities not necessarily related to criminal acts and include such tasks as traffic control, rescue operations, animal control, ambulance and first-aid services.

To better understand how police services are provided, and to assist in forecasting future police-related needs, an interview was conducted with the East Hempfield Township Police Department Chief, Douglas D. Bagnoli. The remainder of this section will focus on the issues discussed during this interview.

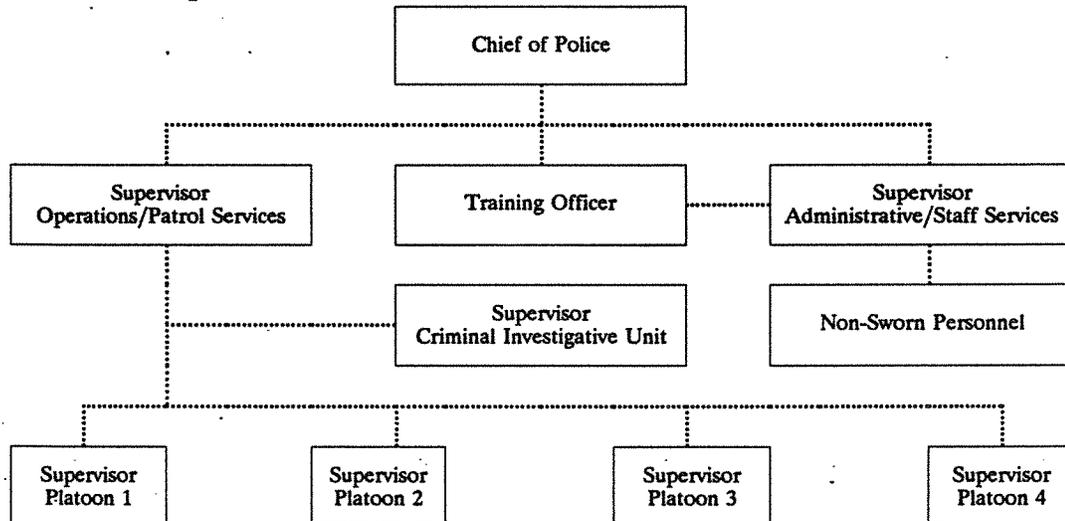
East Hempfield Township began offering local police protection in July, 1963. Prior to this, the Pennsylvania State Police patrolled the Township and provided the necessary functions associated with police service. As the Township began to develop during the early 1960's, the citizenry and public officials saw a need to form a municipal police force, and hired one of the State Police troopers who had patrolled the Township as the new police chief. Back then, there was one full-time police officer and one part-time officer.

Today, the East Hempfield Township Police Department operates 24 hours per day and serves all 22 square miles of East Hempfield Township, with a population of close to 19,000 persons, and approximately 513 businesses and public/civic institutions. The Department must also address the problems that arise within the Lancaster metropolitan area that "spill" over the boundaries of the Township.

In order to efficiently and effectively serve the public welfare of the Township, the East Hempfield Township Police Department currently maintains a complement of 24 police officers and 2 civilian support staff. The 24 officers include the Chief, two officers assigned to the criminal investigation unit, an operations supervisor charged to oversee the criminal investigation unit and other day-to-day operations within the Department, and an administrative staff supervisor who is in charge of overseeing the computer system, assisting the

Chief, and developing departmental rules, regulations and policies. The remaining 19 police officers are responsible for manning patrol contingents. Finally, there are two civilian employees. One serves as the Department's receptionist, filer, and data entry person and the other civilian is in charge of operating and managing the Department's computer system.

The following is an organizational chart depicting the operational structure of the Police Department.



Geographically, the Township is divided into two patrol sectors. Sector one comprises the more developed portion of the Township, located south of PA Route 283 and east of Centerville Road. Sector two consists of the Landisville area and the rural area north of PA Route 283.

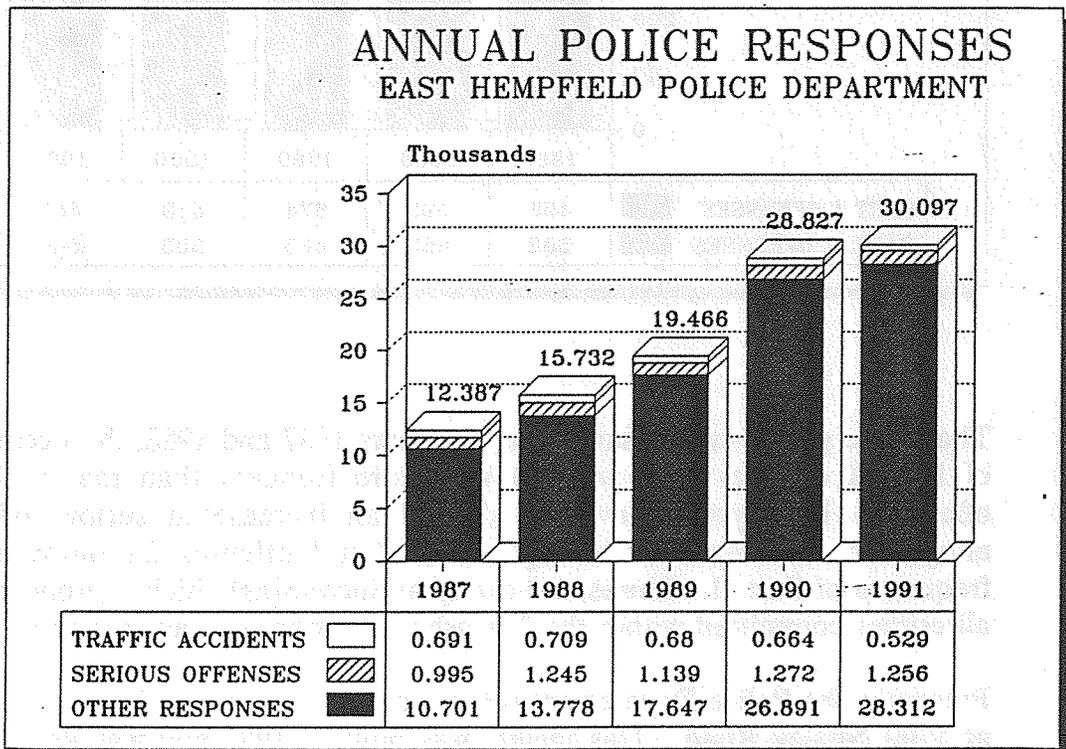
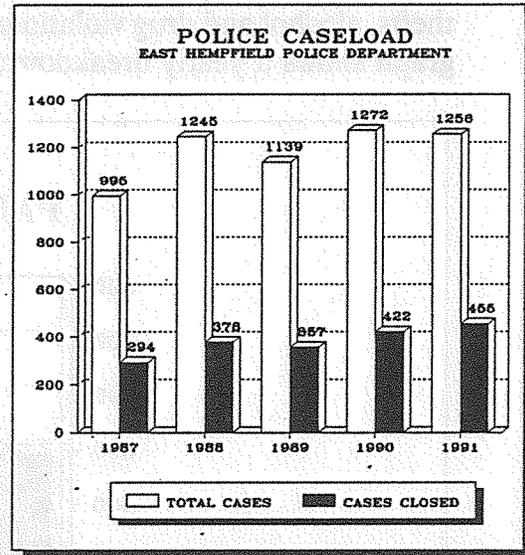
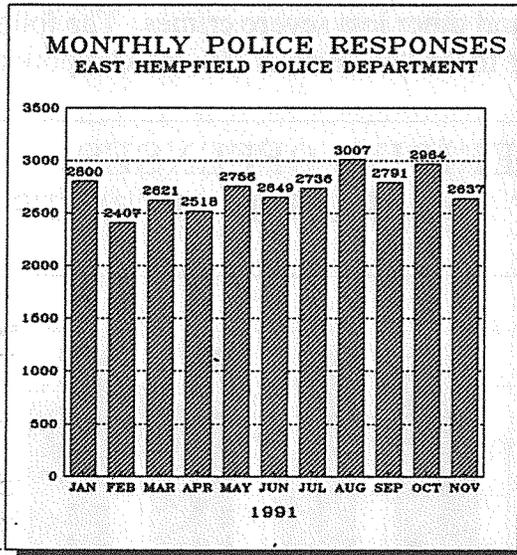
The 19 patrol officers are segmented into four patrol platoons, three of which operate with five officers and one with four officers. Within each of the three platoons with five officers, two officers are assigned to each of the two patrol sectors, the fifth officer acts as the platoon supervisor and "floats" between the two patrol sectors. The fourth platoon rotates throughout the schedule to account for time off for the other platoons. The patrol platoons are divided into three shifts consisting of 8 a.m.—4 p.m., 4 p.m.—12 a.m., and 12 a.m.—8 a.m.

The current level of manpower is determined based upon the citizens and businesses requests for police service. The Chief cited that, with the rapid growth of the Township's, and the Lancaster metropolitan area's, population, an increase in service requests has resulted in a strain on the existing level of manpower. As service requests continue to rise, more manpower will be needed to maintain a manageable pace with them.

One performance measure used to evaluate police effectiveness is response time. Response time is the time that it takes an officer to arrive at the complaint site. According to Chief Bagnoli, the average response time for emergency calls is 5 minutes, and non-emergency response times are 15

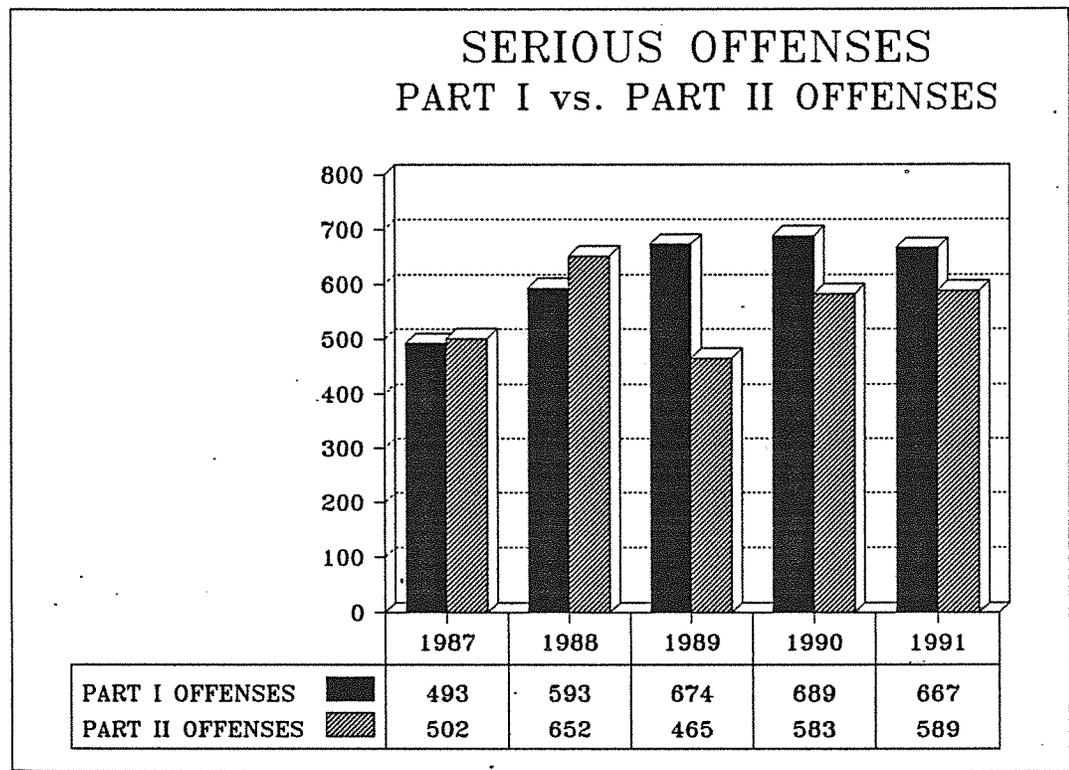
minutes or less, depending on the priority and on-duty officer availability. Response time is highly dependent upon the size and shape of patrol areas. The larger and longer the patrol area, the more time may be required to travel to a particular incident site. Additionally, traffic congestion can hamper the movement of emergency vehicles. Presently, response times within East Hempfield Township appear reasonable.

As a municipality's, and its surrounding region's, population grows, so does the demand for public services, including police protection. Police reports were researched for the past five years to determine any trends in the magnitude, frequency, and timing of particular police demands. The following graphs illustrate the increasing demands being placed upon the Police Department.



Clearly, the Township's growth and development during the past decade has similarly translated into equally significant increases in police activity. Overall, total annual police responses have increased by 164% between 1987 and 1991. The Annual Police Responses graph shows a steady increase between 1987 and 1989; however, a tremendous increase in activity occurred between 1989 and 1990, and continued to increase in 1991. This increase is more a result of departmental changes in how officers document their work time than in actual police calls. Still, however, individual police responses continued to increase during 1990 and 1991.

Serious offenses can be broken down into two parts. Part I includes offenses such as arson, rape, murder, robbery, burglary, etc., while Part II includes thefts, alcohol and drug violations, and other less severe crimes. The following graph shows a yearly breakdown of these two serious offense components:



The above graph shows that during the years 1987 and 1988, the occurrence of Part II offenses (less serious) was more frequent than that of Part I offenses. Both years, however, showed an increase in serious offenses altogether. During 1989 through 1991, Part I offenses far outpaced the frequency of Part II offenses, indicating an increasingly higher proportion of all crimes committed within the Township are more serious in nature.

Presently, the Police Department is housed in the Township Building, located at 1700 Nissley Road. This facility was built in 1983 and was designed to contain many of the modern conveniences and necessary space to meet the

needs of the Police Department and Township administration. Presently, the Police Department has the following rooms/spaces:

- 4 offices and labs
- 3 detention cells
- 1 storage area
- 1 polygraph room

In addition to these existing spaces, the Township is in the process of developing plans for a special training room. This training room and its facilities will assist in the operation of the recently implemented training program.

Aside from the above-mentioned facilities, the Police Department also utilizes a wide range of equipment in its day-to-day operations. This equipment includes the following items:

- 10 police vehicles (7 marked and 3 unmarked)
- 2 breathalizers
- 1 speed check radar gun
- 1 polygraph machine (lie detector)
- 1 ESP (excessive speed preventor) machine
- 3 Vascar units
- 1 FAX machine
- 1 in-house computer network with two work stations (recently provided by the Township to assist in Department record-keeping)

The Township has also recently provided the Department with the Law Enforcement Television Network (LETN). This network is provided through a special cable channel and assists in training police officers and introduces new techniques in law enforcement. Department personnel can watch this network at their convenience because programs are rotated within a 24-hour period so that all shifts are covered.

Regarding the availability of existing manpower, Chief Bagnoli indicated that the scheduling of manpower to complete given tasks in the day-to-day operations of the Department is difficult. This is due, in part, to the tremendous amount of demand that the Department is experiencing; it is also a result of the many unforeseen factors which contribute to the reduction in the overall protection of the public welfare, and crime-solving functions which the citizenry demands. These unforeseen factors include officer sick leave, officer injury leave, officer death leave, mandatory training requirements, vacations, holidays, special events, assistance to other police and public service agencies, and public relations duties.

Chief Bagnoli also indicated that there is a need for 24-hour dispatching from the Police Department. Currently, dispatching from the Department itself is only done during the normal business hours (8 a.m. to 4 p.m.); all other times,

it is done through call forwarding to County Communications radio. The hiring of additional civilian manpower is needed to cover the extra hours of local dispatching. The Township is seriously considering hiring a full-time, 24-hour dispatcher so that emergency calls do not have to be transferred to County dispatch.

Finally, the Police Chief explained that there is a good open line of communication between the Department and the Township administration. This communication has proven beneficial in the past, as evidenced by the Department gaining additional manpower and equipment. Chief Bagnoli hopes that this line of communication remains vital and continues to enhance the level of service the Department provides the community. The Township should also be commended on its commitment to educate the community through various crime prevention techniques.

The results of population growth and urban development not only have implications in terms of land use, but also directly affect the daily operations of the Township's Police Department. Associated with growth and development are increases in serious crime, teen violence, drug dealing, and traffic-related problems. These issues require proper police attention in order to prevent disruption in the health, safety and welfare of the Township's residents, students, businesses, and visitors. As the preceding discussion revealed, the East Hempfield Township Police Department is faced with many of these issues and must deal with them every day. The level of manpower, which is determined by the number of requests the Department receives, will need to increase proportionately as requests for service increase. Furthermore, additional manpower will need to become more specialized to deal with the specific problems associated with teen violence, criminal investigation, drug dealing and public education. As the Township, and especially the surrounding region, continues to grow, the Police Department must evolve accordingly to ensure the public's safety.

By reviewing the current level of police service within the Township, assessing the expressed needs of the Department, and by correlating anticipated growth within the Township with those needs, future police department upgrades will be required. The scheduling and manner in which those upgrades occur must be charted through a combined strategic planning initiative between the Police Department and the Township. By formulating and articulating a specific allocation of resources earmarked for the Police Department based upon changes among various indicators, such as population increases, increased caseload, higher response times, etc., the Township can ensure its residents that police protection will remain at a high level. Conversely, the Police Department will be able to adapt more quickly to such changes and acquire the necessary resources when needed.

D. FIRE PROTECTION

Fire protection is a basic public safety service that is vitally important to the Township and its residents and businesses. Obviously, fire protection is aimed

at minimizing the loss of life and property due to fire and related hazards. The level and availability of fire protection within a given area also affects the rate at which area residents and business owners must pay for fire insurance.

To understand how the Township's fire protection services are delivered, and to identify current and/or future needs, a meeting was held with the chiefs of three of the four fire companies that serve the majority of the Township on December 12, 1991, at the East Petersburg Fire Station. In attendance were Ed Irwin (Fire Chief, Rohrerstown Fire Company), Mike Fitzgibbons (Fire Chief, Landisville Fire Company), and Don Schoenberger (Fire Chief, East Petersburg Fire Company). In addition, correspondence between the author and John French, Chief of the Salunga Fire Company, was incorporated into the following discussion.

HISTORY

The Landisville, East Petersburg, and Salunga Fire Companies were all founded in 1910. They were formed as a result of major fires occurring in each of the villages of Landisville, East Petersburg, and Salunga. The Rohrerstown Fire Company was formed in 1921 to serve the growing village of Rohrerstown. All three fire companies set out to protect property and lives from the ravages of fire.

SERVICE AREAS

The four fire companies together serve all of the Township's land area within their primary service areas. The actual boundaries of these primary service areas were delineated many years ago. The primary service area represents that land area that an individual fire station has "first call" responsibility for providing fire protection service.

The Public Facilities and Services Map contained on page 116 identifies the primary service areas and fire station locations within the Township.

In addition to primary service areas, nearby fire companies provide mutual-aid-assistance service. A mutual-aid-assistance service area is established between neighboring fire companies to augment their sometimes limited equipment stock to offer a wider range of firefighting capabilities. The Rohrerstown Fire Company provides, and is provided, mutual-aid service by the West Lancaster, Lancaster Township, Southern Manheim Township, East Petersburg, Landisville, Silver Spring, and Mountville Fire Companies. The East Petersburg Fire Company provides, and is provided, mutual-aid service by the Landisville, Rohrerstown, Southern Manheim Township, Neffsville, Manheim and Salunga Fire Companies. The Landisville Fire Company provides, and is provided, mutual-aid assistance by the Salunga, Silver Spring, East Petersburg, Rohrerstown, and Mountville Fire Companies. Finally, the Salunga Fire Company provides, and is provided, mutual-aid assistance by the Landisville, East Petersburg, Silver Spring, and Mount Joy Fire Companies.

The Rohrerstown Fire Company is located on the south side of Elizabeth Street in the village of Rohrerstown. While this location is not geographically central to the company's service area, it is situated in close proximity to local roads that facilitate easy and quick access to much of the service area. The Rohrerstown Fire Company's service area is rather large and densely populated; it also has an extensive level of commercial and industrial land uses to contend with. However, regardless of its large size and diverse composition, the fire company maintains a respectable 4-8 minute emergency response time (dispatch to arrival). One way to improve this response time even further is through traffic signal preemption. Traffic signal preemption allows the fire company to manually control the traffic signal on an extended green so that the emergency vehicles can pass through the intersection unimpeded. It also allows motorists waiting at the intersection to move on, rather than hold up oncoming emergency vehicles. The Township is currently working with the Rohrerstown Fire Company to retrofit the traffic signal at the intersection of Marietta Pike and Rohrerstown Road with a preemption device for the north-bound light.

The East Petersburg Fire Company is located on the west side of Pine Street in the middle of East Petersburg Borough. While the fire station is not physically located within the Township, it does serve a large area of the northern part of the Township, including the industrial park south of the Borough. Chief Schoenberger feels that the location of the fire station is centrally located to its service area. He also feels that its location is conducive to reducing response times because many of the volunteers live within the Borough and can quickly get to the fire station when a call is dispatched. The East Petersburg Fire Company maintains a 4 to 7 minute emergency response time.

The Landisville Fire Company is located on the north side of Main Street in the village of Landisville. The fire company primarily serves the west-central portion of the Township. Chief Fitzgibbons feels that the location of the fire station is effective in serving its primary service area. The Township has already provided the fire company with a traffic signal preemption device for the west-bound signal at the intersection of Main Street and Church Street in Landisville.

Finally, the Salunga Fire Company is also located on the north side of Main Street, about seven-tenths of a mile west of the Landisville Fire Company. The Salunga Fire Company serves the extreme northwest corner of the Township.

MANPOWER AND FUND-RAISING

The delivery of fire protection services is highly dependent upon manpower. Like most municipalities in Lancaster County, East Hempfield Township's fire departments are staffed entirely by volunteer personnel. Volunteerism, in general, is declining.

Presently, Rohrerstown Fire Company has 25 active firefighters, 10 fire police, and 10 junior fire members. The Landisville Fire Company has 30 active firefighters, 5 fire police, and 2 juniors. The East Petersburg Fire Company has 50 active firefighters, 15 fire police and 1 junior member. The Salunga Fire Company has 14 active firefighters and fire police.

All four fire companies see a reduction in the number of persons becoming involved in fire protection. The chiefs cite several reasons for this, including lack of free time, the large number of hours required of volunteers to assist in fund-raising, and the many hours volunteers need to devote to training.

In general, the sole reliance on volunteerism presents uncertainty for the future delivery of fire protection. The Township has acknowledged this uncertainty by dramatically increasing its contributions in order to keep the fire companies viable. The Township also feels that a full-time, paid fire contingent may be necessary in the future and, if so, has pledged that the funding and commitment would be available.

Beyond this major commitment, the Township also assists the fire companies in other ways. The Township holds meetings with the fire chiefs every other month to discuss existing or potential problems that affect emergency services. This direct line of communication is a beneficial link between the Township and the fire companies.

The Township provides fire training through the Fire Emergency Training Network (FETN), which is similar to the Law Enforcement Training Network (LETN) discussed in the Police Protection section. This service is provided to all fire companies serving the Township, except East Petersburg. The Township provides the training service at a 50% discount to the various fire companies.

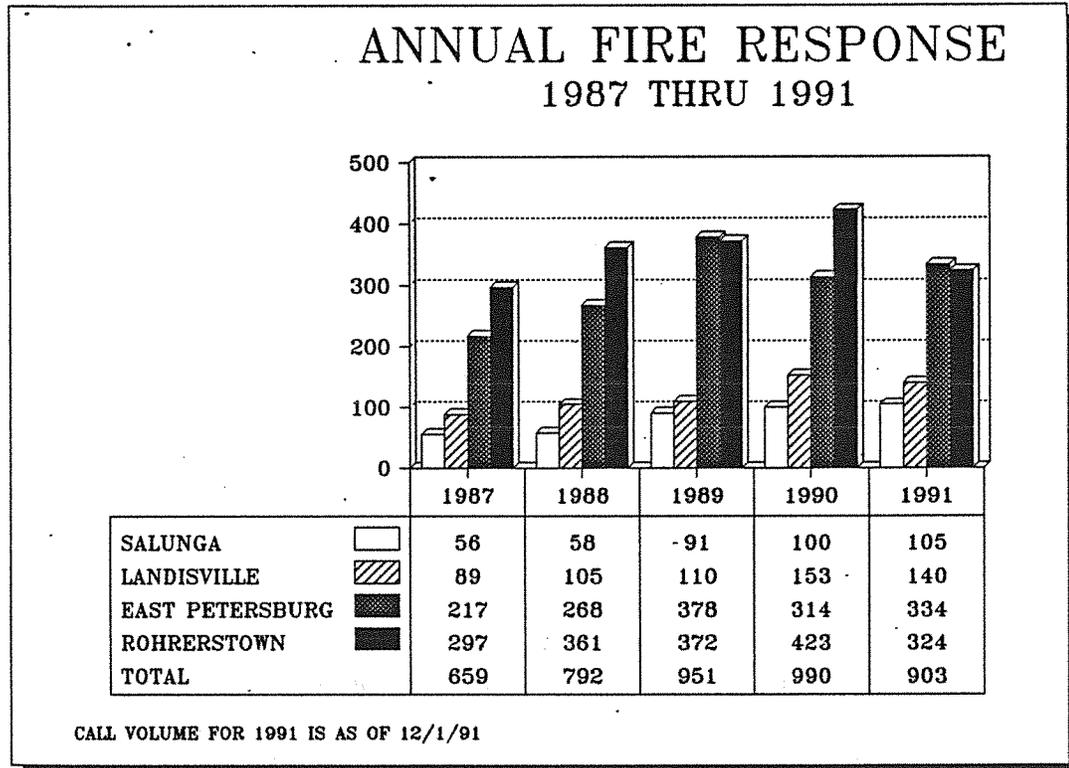
The Township has also provided computers to the three fire companies located within the Township to assist them in preparing their monthly reports and record-keeping. The Township also provides free fuel to the three fire companies located within East Hempfield. Finally, the Township pays all liability insurance for the fire companies and provides workers compensation insurance to all volunteer firemen.

Based upon this described level of assistance, the Township has demonstrated a significant level of commitment and appreciation for the various volunteer fire companies serving its residents, businesses and institutions. One further suggestion would encourage the Township to develop a closer cooperative effort with the Borough of East Petersburg, aimed at jointly assisting the East Petersburg Fire Company the same way it assists the companies physically located in the Township.

NUMBER AND TYPES OF ALARMS

In general, the number of fire calls increases with a growing population. Fire alarm data was collected from the three fire companies during the last five years.

The following graph summarizes this data:



While the number of fire calls can vary widely from one year to the next, the preceding graph illustrates a steady increase in the demands being placed upon local fire companies.

With the general decline in volunteer manpower in and around East Hempfield Township, there is a great potential for dramatic increases in the number of fire calls for any particular fire company. For example, should one of the fire companies within the Township or an adjoining municipality lose a significant number of its firefighters, one or more of the fire companies serving the Township could be called upon to provide more mutual-aid responses. In turn this could place additional strain on local manpower and financial resources allocated to fire protection. *For these reasons, it is important that Township officials monitor the annual number of fire responses, including a breakdown of primary and mutual-aid calls. Should it be determined that a disproportionate amount of service is being provided to, or being received from, neighboring companies, some support adjustments may be warranted.*

EQUIPMENT AND FACILITIES

The Rohrerstown Fire Station has two vehicle bays which can hold three fire trucks each. It also has two additional bays which can hold one truck each. Housed within the station is a 1985 Mack Class A Pumper, a 1974 Mack Class A Pumper (refurbished in 1988 with a hydraulic reel with 1,600 feet of 5-inch hose), a 1984 Ford squad truck, a 1967 Mack Pumper which was converted to a foam truck, and a 1992 Chevy Suburban squad truck. Chief Irwin sees the need to acquire a ladder truck equipped with a minimum 100-foot aerial within the next five years, provided there is funding available. Rohrerstown relies on Landisville and East Petersburg Fire Companies among others for use of ladder trucks. However, the ladders on these companies' trucks measure only 75 and 50 feet, respectively, and building heights within Rohrerstown's primary service area are approaching 100 feet and more.

The East Petersburg Fire Station has four vehicle bays which primarily hold one vehicle each. Housed within the station is a 1978 50-foot ladder truck, a 1989 pumper, a 1978 rescue squad truck, a 1992 heavy duty rescue truck, and a 1988 squad truck. Chief Schoenberger indicated that East Petersburg just made a major commitment in purchasing the new 1992 heavy duty rescue truck. He also explained that the fire company will need to replace the ladder truck within the next five to ten years.

The Landisville Fire Company station has two large vehicle bays each with a capacity for two vehicles. Housed within the station is a 1991 Simon LTI 75-foot aerial ladder truck, a 1987 E-I squad truck, and a 1981-Pierce engine pumper. Chief Fitzgibbons indicated that the 1981 pumper would need to be replaced by the year 2000.

The Salunga Fire Company has a three-bay fire station which houses a 1982 Ford/Pierce squad truck, a 1990 Emergency One Protector Series pumper, a 1988 Ford 3500 gallon tanker (recently refurbished), and a 1982 Ford XL fire police truck (formally an ambulance). Chief French explained that the fire station is in desperate need of repair and expansion to adequately house the vehicles; apparatus, training and administrative facilities.

All four fire companies train their firefighters together so that each volunteer is familiar with each of the companies' vehicles and equipment. Essentially, all four of the fire companies serving East Hempfield Township complement each other with equipment and manpower; this enhances the level of fire protection.

The Township acts as the purchasing agent for the fire companies, which results in substantial savings for the purchase of new equipment.

FUTURE ISSUES

In summary, the volunteer fire companies serving East Hempfield Township are providing a vital service to the residents of the Township. This service is

provided through the dedication and hard work of many volunteers. However, this service cannot continue to exist indefinitely in light of the demands being placed upon it. As fire company operating budgets continue to increase, donations and fund-raising efforts, which are the fire companies only revenue, continue to decline. *The Township does recognize these shortfalls and tries to assist the fire companies in any way it can, as identified throughout this section. The Township is also aware that it must be prepared to undertake firefighting responsibilities in the event one or more of these fire companies should fail.*

With the continued evolution and change the Township is currently experiencing, the future of the existing volunteer fire companies is uncertain. As land uses and demographics change within the Township, and regulatory, training, and other requirements chip away at the volunteer firefighters' limited amount of available time, sooner or later there will arise a need for a municipally-staffed fire department. Until that time, however, the Township, in cooperation with the volunteer fire companies, must explore other ways to provide necessary fire protection and prevention services. In the same manner that the Police Department, in cooperation with Township officials, should prepare a strategic plan for the future allocation of municipal resources to combat crime and civil disobedience, so, too, do the various fire departments need to prepare a similar plan to allocate public and private resources for the purpose of fire prevention and protection. At present, Township officials routinely meet with leaders from the various fire departments serving the Township. It is recommended that this group of representatives, along with Township leadership, should identify potential problems associated with the (1) decline in volunteerism, (2) need for regionalized fire services, (3) potential for paid personnel, (4) equipment and apparatus needs, and (5) limited amounts of financial resources. After identifying these expressed problems, a strategic plan should be developed utilizing the "in-house" expertise of the fire company representatives along with the municipal knowledge of the Township officials.

E. AMBULANCE SERVICE

Ambulance service is an obvious lifesaving device. Ambulance service can be divided into two general types. First, emergency ambulance service involves the pick-up of patients at the scene of an accident or medical emergency. Then patients are expediently transported to local medical care facilities for treatment. The second form of ambulance service is called routine transports. In this instance, patients are transported from one medical care facility to another.

To understand how ambulance service is provided within East Hempfield Township, a meeting was held on December 17, 1991, with Michael Roop of the Hempfield Community Ambulance Association.

The Hempfield Community Ambulance Association was formed in 1966 as the result of a perceived community need. At that time, there were six volunteers associated with the ambulance and there was only one ambulance which was

housed at the Landisville Fire Company station. Ten years later, the Ambulance Association established its own permanent headquarters at 61 Church Street in Landisville. The Ambulance Association serves all of East Hempfield Township, Mountville Borough, East Petersburg Borough, most of West Hempfield Township, and a small portion of Manor Township.

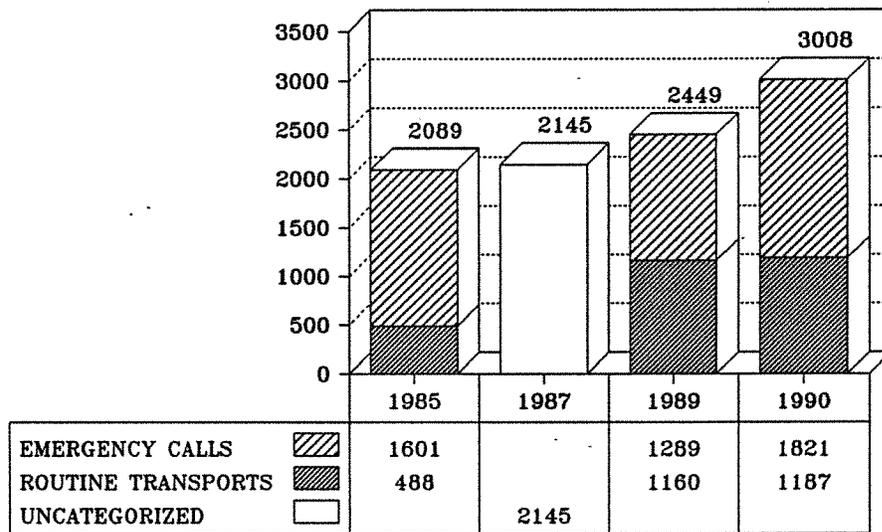
Back-up ambulance service to the Hempfield Ambulance Association is provided by the Mount Joy Ambulance Association, Manheim Ambulance Association, Manheim Township Ambulance Association, Columbia Ambulance Association, and the West End Ambulance Association. These neighboring companies provide vital assistance when the Hempfield Community Ambulance is already in use or cannot respond, and when there are multiple emergencies that cannot be adequately addressed by the Hempfield Ambulance. Conversely, Hempfield also provides back-up service to these adjoining areas and other areas under similar circumstances.

Presently, the Hempfield Community Ambulance operates 24 hours per day. The Ambulance Association has 5 full-time paid crew members which operate two ambulances Monday through Friday, from 6 a.m. to 6 p.m. (crew members work four 12-hour days). The Ambulance Association has approximately 60 or more volunteers who man the station from 6 p.m. to 6 a.m. and on weekends. Although volunteerism appears to be declining among many emergency service organizations within the area, the Hempfield Community Ambulance is pleased with its current amount of volunteers. Nonetheless, the Township should constantly monitor the level of volunteer manpower at the Ambulance Association and stand ready to assist if volunteer manpower becomes acutely short, especially during periods not covered by already established paid personnel.

The Ambulance Association appears to have adequate facilities and equipment at the present time. The Hempfield Ambulance possesses four Type III modular ambulances, each capable of carrying two patients. These ambulances range in age from four years to one year. The Ambulance Association also maintains its own facility equipped with a training/meeting room, office, crew's quarters, sleeping quarters, and four vehicle bays. It appears that, for the time being, the station and equipment are sufficient to meet the Township's needs, however, he indicated that the space within the building is limited and expansion may be necessary within five to ten years.

Response time for emergency calls is very good—usually ranging between one and three minutes. This low response time is a reflection of the paid personnel, as well as the large volunteer staff. Although response times are low, the number of responses has increased over the past several years. The following table and graph illustrate the increasing number of ambulance calls.

ANNUAL AMBULANCE RESPONSES 1985 THRU 1990



AMBULANCE ASSOCIATION ONLY RECORDED
CALL VOLUME EVERY OTHER YEAR UNTIL 1989

As can be seen, the frequency of ambulance calls has increased steadily over the past five years for the Hempfield Community Ambulance Association. As an area grows and develops, demand for ambulance service increases with increasing population and the construction of new commercial and industrial facilities. In addition, large-scale multi-family developments and nursing care facilities place acute demands upon ambulance companies. Large-scale nursing facilities, such as the proposed Woodcrest Villa, significantly contribute to an increased demand for service, particularly routine transports. *Township officials should be aware of these increased demands and review future development proposals, such as these with current levels of ambulance service in mind.*

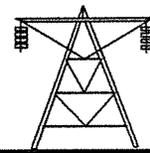
One major concern of the Ambulance Association is the limited communication it receives from the Township regarding the notification of new street names and their locations. *The Township should inform the Ambulance Association of new developments before they are built, and before the ambulance receives a call from a resident who's street address is unknown to the ambulance crew.*

Aside from this issue, the Township has provided the Ambulance Association with some beneficial assistance over the past several years. Similar to the traffic signal preemption provided to the fire companies, the Township avails the same service to the Ambulance Association at the south-bound light of the Church Street and Main Street intersection in Landisville. The Township provides ambulance staff and volunteers with workers compensation insurance

and annually contributes a sizeable donation. In addition, the Township has just recently offered the Fire Emergency Training Network (FETN), described earlier, to the Ambulance Association but is awaiting a response. In general, the Township tries to assist the Ambulance Association where it can.

Because the Ambulance Association serves a larger regional market than just that of East Hempfield Township, and because its needs are different and more complicated, it is recommended that an emergency services consultant may be needed in the future to prepare a study to determine the needs of the Ambulance Association in a regional context.

VIII. PUBLIC UTILITIES



A. PUBLIC WATER

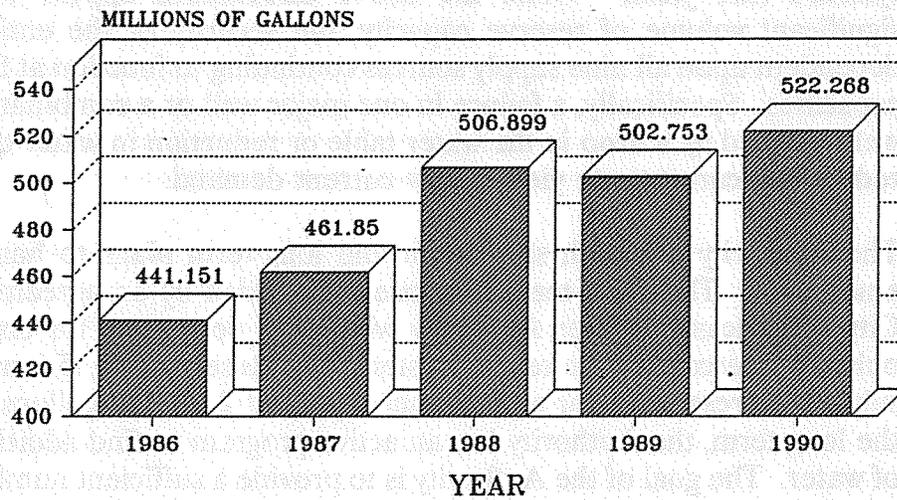
Public water is provided in East Hempfield Township by the Municipal Authority of East Hempfield Township, and the City of Lancaster Water Authority. The current service area for both Authorities is shown on the Public Water Map located on page 127. To understand how public water is provided, interviews were conducted with Rod Ray, Superintendent, Municipal Authority of East Hempfield Township, and George Kandra, P.E., City of Lancaster Water Authority.

MUNICIPAL AUTHORITY OF EAST HEMPFIELD TOWNSHIP

The Municipal Authority of East Hempfield Township was one of the first Pennsylvania-chartered water authorities. The Authority is not regulated by the Public Utility Commission, and through its charter provides for service in both East Hempfield Township and West Hempfield Township. Although their charter was filed in the summer of 1941, construction for service was delayed a few years by a war-time material shortage of iron. The first water source was Baker Spring, located along Church Street, from which water service was provided to the existing residents of the villages of Landisville and Salunga. The second expansion of the system supplied water service to the existing residents of Rohrerstown. The water supply for Rohrerstown was provided by a well located in the vicinity of what is now known as the East Hempfield Township Sports Complex. Further expansion of the water system occurred in response to the Township's suburban growth pattern which located residential units in the area between Marietta Pike and Harrisburg Pike. To date, the majority of customers are residential and the water supply system continues to rely entirely upon groundwater (well/spring) sources. The specific service area, and the various facilities, are identified on the Public Water Map located on page 127.

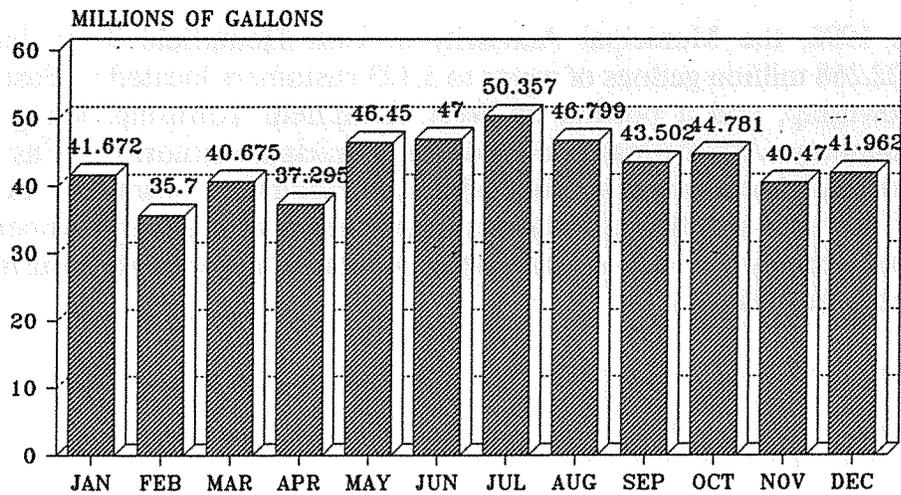
In 1990, the annual system-wide water usage accounted for 522.266 million gallons. Over the past five years, the total annual water consumption increased by more than 18% (81.117 million gallons). The following is a comparison of the total number of gallons consumed throughout the entire system during the last five years, and a monthly comparison for the year 1990:

ANNUAL WATER USE MUNICIPAL AUTHORITY OF EAST HEMPFIELD TOWNSHIP



MAEHT2

1990 MONTHLY WATER CONSUMPTION MUNICIPAL AUTHORITY OF EAST HEMPFIELD TOWNSHIP



MAEHT3

The capacity of the system-wide groundwater water source fluctuates seasonally. The current safe yield (based upon actual pump test) of the total system is 3.807 million gallons per day, and the maximum daily water use for 1990 was 2.459 million gallons per day, or 68% of the safe yield. The 1990 average daily water use was 1.431 million gallons per day, or 38% of the system's safe yield. While the above calculations appear to indicate a significant volume of reserve capacity, the security of the entire system is dependent upon all nine supply sources continuing to function at full safe yield capacities. Specifically, a failure in one major well or a combination of minor wells, caused by a drop in the water table or reduction in water quality, could reduce the current safe yield below current demand.

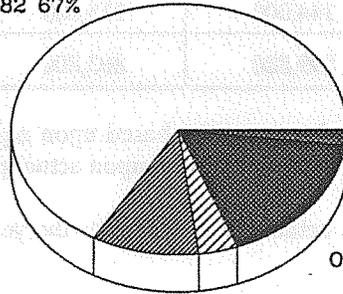
The Authority has both short-term and long-term plans to handle such an emergency. The short-term response is provided by an agreement with the City of Lancaster Water Authority which has permitted, for emergency use only, an interconnection to the Oyster Point Reservoir (a 15.3 million gallon subsurface reservoir) for a maximum supply of 2 million gallons per day. In the long term, the Authority has an active program to find additional sources of water. The goal of the Authority is to provide a sufficient number of source locations so that the supply will be adequate should failure occur to one of the largest on-line sources.

Historically, the Authority's groundwater supply has provided water of high quality. Currently, the system-wide treatment process consists of sodium hypochlorite, sodium fluoride, and sodium hexamethophosphate. Additionally, Well No. 8 utilizes an air stripper to remove a volatile organic contaminant. The characteristics of the geology in this portion of Lancaster County provides the opportunity for additional contamination. The Authority has an active program for regular quality control testing.

In 1990, the Municipal Authority of East Hempfield Township provided 522.268 million gallons of water to 5,123 customers located in East Hempfield Township, and a portion of West Hempfield Township, along its eastern boundary. Approximately 80% of the Municipal Authority of East Hempfield Township's customers are located in East Hempfield Township. A breakdown of the total number of customers, and the corresponding number of gallons sold throughout the entire system by land use category during 1990, is provided below:

1990 AVERAGE DAILY WATER USE MUNICIPAL AUTHORITY OF EAST HEMPFIELD TOWNSHIP GALLONS PER DAY (GPD)

RESIDENTIAL 952382 67%



PUBLIC 27818 2%

OTHER 247675 17%

COMMERCIAL 149011 10%

INDUSTRIAL 53985 4%

TOTAL - 1,430,871 GPD

MAEHT1

Land Use	Number of Customers	Amount Sold
Residential	4,872	952,382 GPD
Public	17	27,818 GPD
Commercial	172	149,011 GPD
Other ¹	17	247,675 GPD
Industrial	45	53,985 GPD
Total	5,123	1,430,871 GPD

¹Other includes fire, leakage, temporary service, flushing, etc.

The entire system is composed of interconnected low pressure and high pressure sectors. First, the low pressure system is generally located in the vicinity of Landisville/Salunga and is supplied by one spring, three wells, and two storage tanks. The capacity and 1990 yield of these low pressure facilities are as follows:

LOW PRESSURE SYSTEM GROUNDWATER SOURCES				
Name	Facility Limit¹ (Average GPD)	Safe Yield² (Average GPD)	1990 Withdrawal³ (Average GPD)	1990 Days in Service
Baker's Spring	100,800	100,800	84,677	365
Well #4	331,000	300,000	263,819	365
Well #6	324,000	288,000	18,910	92
Well #7	144,000	115,000	39,337	285
Total	899,800	803,800	406,743	

¹Facility limit is the maximum output based upon equipment (e.g., pumps, mains).

²Safe yield is the maximum output based upon actual pumping tests of the well and existing limit for spring.

³1990 withdrawal is the actual water usage for the year.

LOW PRESSURE SYSTEM STORAGE		
Name	Capacity (Gallons)	Elevation (Overflow/Bottom)
Landisville #1	100,000	533.29/436.70
Landisville #2	1,000,000	533.00/437.00
Total	1,100,000	

The low pressure system is functioning at 51% of the average daily safe yield, with a reserve capacity of 397,057 GPD. The maximum daily water use of the low pressure system is estimated at 671,125 GPD, with a residual withdrawal capacity of just 132,675 GPD. The total storage capacity is 2.7 times the 1990 average daily withdrawal. The 1990 average daily reserve capacity only slightly exceeds the safe yield of the well with the highest output. Therefore, if Well #4 was deactivated, the remaining sources would barely be able to serve the 1990 average daily withdrawal. Similarly, the maximum daily water use exceeds the system's ability to function if Well(s) 4 and/or 6 were deactivated. To support the low pressure system in the case of a source termination, this system is supported by connections to the high pressure system at locations on both Stony Battery Road and Church Street. Through the use of pressure-reducing valves, the high pressure system can augment the supply of the low pressure system.

The remaining service areas of the Township consist of a high pressure system composed of five wells, four storage tanks, and an emergency interconnection with the City of Lancaster Water Authority's Oyster Point Reservoir; however, Rohrerstown's location within this area causes it to function as a low pressure system. The capacity and 1990 yield of the high pressure system is as follows:

HIGH PRESSURE SYSTEM GROUNDWATER SOURCES				
Name	Facility Limit¹ (Average GPD)	Safe Yield² (Average GPD)	1990 Withdrawal³ (Average GPD)	Days in Service
Well #1	252,000	230,000	72,809	220
Well #2	720,000	684,000	622,348	365
Well #3	252,000	230,000	228,236	354
Well #5	720,000	660,000	31,351	57
Well #8	1,440,000	1,300,000	59,258	87
Total	3,384,000	3,104,000	1,014,002	

¹Facility limit is the maximum output based upon equipment (e.g., pumps, mains).

²Safe yield is the maximum output based upon actual pumping tests of the well.

³1990 withdrawal is the actual water usage for the year.

HIGH PRESSURE SYSTEM STORAGE		
Name	Capacity (Gallons)	Elevation (Overflow/Bottom)
Crow Hill #1	100,000	684.00/651.50
Crow Hill #2	1,000,000	684.00/651.50
Rohrerstown	240,000	520.00/488.00
Getz's Woods	3,500,000	683.00/569.00
Total	4,840,000	

The high pressure system is currently functioning at 33% of the average daily safe yield with a reserve capacity of 2,089,998 GPD. The total storage facility is 4.8 times the 1990 average daily withdrawal. The calculated daily maximum withdrawal of 1,653,103 gallons results in a reserve capacity of 1,450,897 gallons. The maximum reserve capacity only slightly exceeds the safe yield of the highest well output. To support the high pressure system in case of a source termination, an interconnection was made to the City of Lancaster Water Authority's Oyster Point Reservoir which is a 15.3 million gallon facility. The Municipal Authority of East Hempfield Township has contracted for an emergency use of a maximum 2 million gallons per day. In 1990, a total of 3.6 million gallons was provided by the City system.

Currently, the Authority employs a safety net policy with regard to groundwater source capacity and service demands. This safety net policy requires the Authority to maintain sufficient system source capacity to serve the maximum daily demand, even if the largest single well is lost or contaminated. With this policy's constraints, the existing wells provide a reserve capacity for approximately 650 EDU's, or 183,950 GPD. However, the population projections contained in Chapter IV indicate that some 1,521 new dwellings (plus nonresidential development) are likely to be constructed

between 1990 and 2000. While some of these units will be served by the City of Lancaster Water Authority, the Municipal Authority of East Hempfield Township must seek additional groundwater sources with urgency if the "safety net" standard is to be maintained. The Authority's current policy regarding new service requests is to limit extension to within the geographic perimeter of the existing system and restrict new customers to 5,000 gallons per day. The Authority is committed to providing adequate water supply to its existing customers and potential customers located in the undeveloped portion of the service area. Ongoing improvements to the water system includes the addition of new well sites as sources are found. The addition of new well sources typically require two years for testing and installation; therefore, an immediate increase in volume is not anticipated.

CITY OF LANCASTER WATER AUTHORITY

The City of Lancaster Water Authority provides water to the southern and eastern sections of East Hempfield Township. The specific service area, and the various facilities, are identified on the Public Water Map located on page 127.

This water service is provided from a surface water intake facility located in Columbia Borough. The treatment facility for the intake is located at the terminus of 15th Street, just west of Columbia Borough. The Susquehanna River intake facility is permitted to withdraw 24,000,000 GPD. The average intake from the Susquehanna River in 1990 was approximately 9,517,000 GPD.

The treatment process employed at this facility includes the addition of lime slurry, alum sulfate, potassium permanganate, and hydrofluorsilic acid. The water is then filtered through anthracite filters. The water is distributed into the system via a 42-inch diameter steel transmission main to the Oyster Point Reservoir, which is a 15.3 million gallon facility. The 42-inch diameter steel transmission main continues through southern East Hempfield Township en route to the Lancaster City service area. From this main distribution line, water is provided to the area located in the southern and eastern section of the Township.

While no specific usage data is available, the City believes that it can furnish sufficient volumes of public water to serve growth within East Hempfield Township. City officials intend to rely upon Township planning and development policies regarding where such service can be provided.

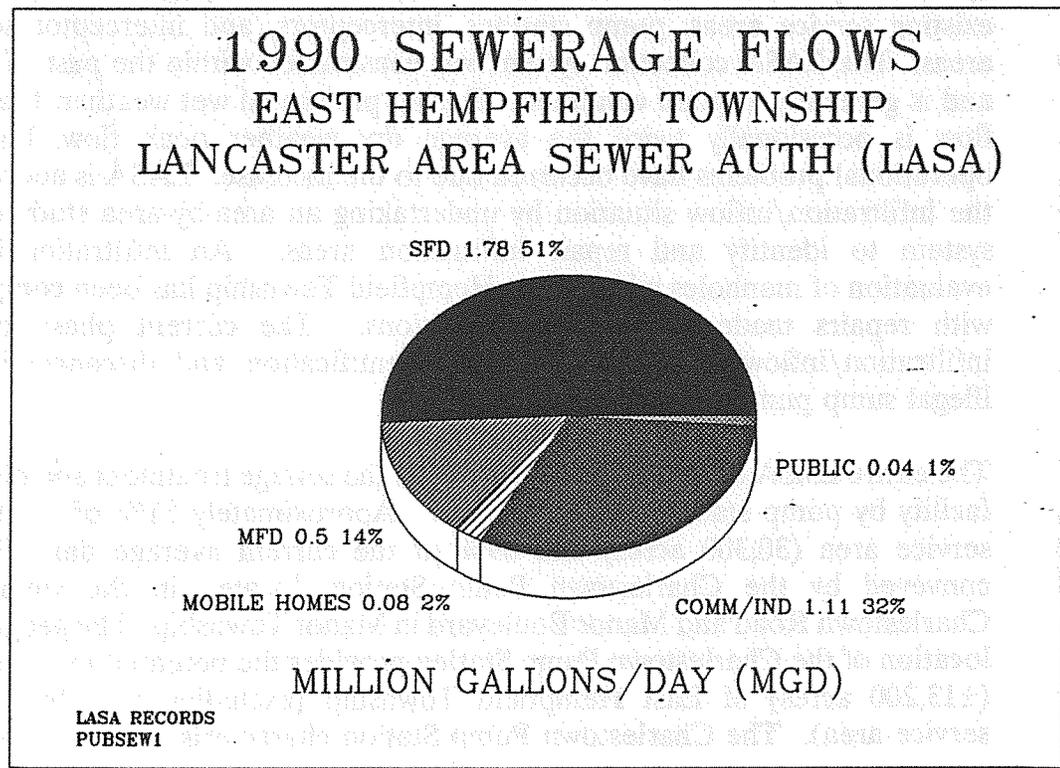
B. PUBLIC SEWER

The Lancaster Area Sewer Authority (LASA) furnishes wastewater collection, treatment and disposal services in East Hempfield Township, in addition to six other municipalities located in the western portion of Lancaster County. LASA currently includes all of East Hempfield Township in its planning for future service areas. To understand how public sewer service is provided,

interviews were conducted with LASA management. Additionally, the following LASA reports were reviewed: *Study of Future System Needs Final Report, December, 1990* (prepared by Gannett Fleming, Inc.), and Chapter 94 Annual Report Municipal Wasteload Management, 1990.

The entire LASA collection system has over 13,250 customers and consists of approximately 59 miles of interceptors, 16 miles of force main, 24 pump stations, 2 surge stations, and a treatment/disposal facility. East Hempfield customers account for 45% of the current wastewater flow. A census of the East Hempfield Township customers indicates the following description of users:

Type	Number	EDU	Average Daily Flow (MGD)
Single-Family	5,032	5,032	1.78
Multi-Family	80	1,415	.50
Mobile Home Park	3	227	.08
Commercial/Industrial	311	3,139	1.11
Public	9	117	.04
Total	5,481	9,930	3.51



SEWERAGE TREATMENT AND DISPOSAL

Sewerage treatment and disposal for LASA is conducted at the Susquehanna Water Pollution Control Plant, located in Manor Township, Lancaster County, Pennsylvania. This facility consists of anaerobic/oxic biological treatment units which discharge into the Susquehanna River at Dry Run. The plant capacity was originally designed for 12 million gallons per day (MGD), but it is rated by DER at 11.4 MGD. Based upon the capacity of clarifier units, the Pennsylvania Department of Environmental Resources currently rates its capacity at 10 MGD. *The 1990 average daily wastewater flow is approximately 7.682 MGD, and the residual capacity is 2.318 MGD, or 6,622 EDU's. Based upon LASA's historical growth rate, the current residual capacity could serve for over twelve years of future growth.* Furthermore, the treatment and disposal facility has been designed to allow upgrading to approximately 24 MGD. The facility has duplicate trains in place, each of which is capable of handling 8 MGD, and the facility is laid out such that additional clarifiers and tanks could be added. LASA is currently adding a clarifier unit to request an increase in the rated capacity.

SEWERAGE COLLECTION SYSTEM

The collection system located in East Hempfield Township is owned and operated by LASA. The Public Sewer Map, located on page 134, depicts the existing service areas, pump stations, interceptors, and interceptor service areas. The LASA collection system was constructed within the past 17 years and is generally in good condition. During prolonged wet weather, the peak flow is occasionally twice the average dry weather peak flow, but few operational problems have occurred due to the increase. LASA is addressing the infiltration/inflow situation by undertaking an area-by-area study of the system to identify and repair infiltration areas. An infiltration/inflow evaluation of manholes within East Hempfield Township has been completed with repairs made at numerous locations. The current phase of the infiltration/inflow evaluation includes identification and disconnection of illegal sump pump connections.

The entire LASA collection system accesses the sewage treatment and disposal facility by pump station and force main. Approximately 51% of the LASA service area (30,300 acres) and 69% of the current average daily flow is conveyed by the Charlestown Pump Station, located in the vicinity of Charlestown Road and Manor Boulevard in Manor Township. The geographic location of the Charlestown Pump Station provides the potential to serve 98% ($\pm 13,200$ acres) of East Hempfield Township (excluding the Donnerville service area). The Charlestown Pump Station characteristics are as follows:

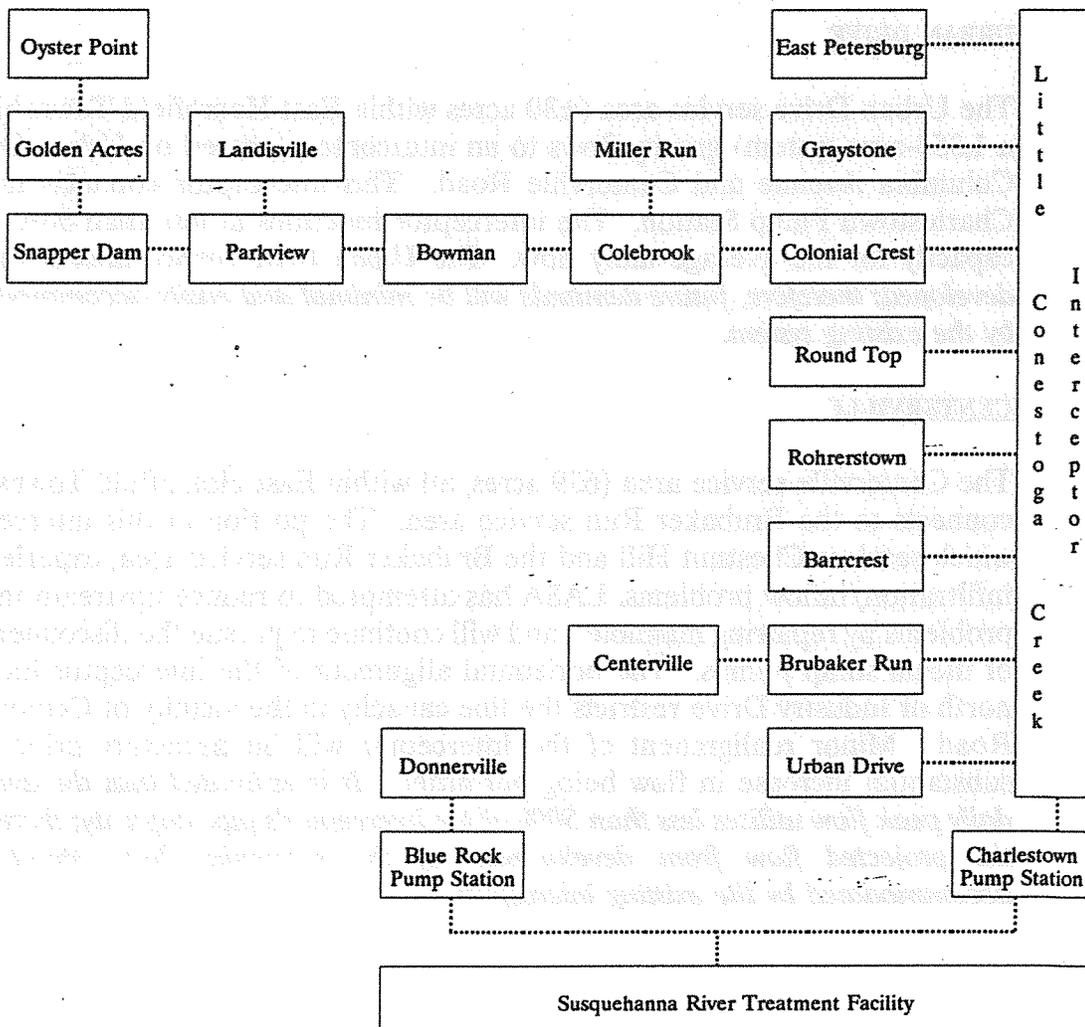
CHARLESTOWN PUMP STATION			
Average Daily Capacity (Peak Capacity/ 2.5 Peaking Factor)	1990 Average Daily Flow Rate	Committed Capacity MGD/EDU	Residual Capacity GPD/EDU
9.5 MG	5.04 MG	1.049/3,500	3.402/9,720

This residual capacity of the Charlestown Pump Station is greater than 15 years of LASA's projected growth, which includes growth within East Hempfield Township.

The East Hempfield Township service areas utilize the Little Conestoga Creek interceptor to access the Charlestown Pump Station. The Little Conestoga Creek interceptor currently exceeds 50% pipe capacity for maximum wet weather peak flow. LASA has budgeted funds for an analysis of the lines and anticipates reducing existing wet weather peak flows through the above described infiltration/inflow program. *It is projected that the Little Conestoga Creek interceptor will accommodate the flow rate through the year 2010.*

Because the collection system for public sewer lines are directly related to topographic features, the following description and analysis is presented by service area, which represent topographical basins. The interrelationship of each service area is shown on the following schematic of the East Hempfield Township portion of the LASA system, after which a discussion of conditions is presented for each service area.

SCHEMATIC DIAGRAM OF SYSTEM SERVICE AREAS



DONNERVILLE

The Donnerville service area (± 280 acres of a 3,563-acre system) gravity flows to the Blue Rock Pump Station, located on Blue Rock Road at the crossing of the Little Conestoga Creek West Branch. The Blue Rock Pump Station characteristics are as follows:

BLUE ROCK PUMP STATION			
Average Daily Capacity (Peak Capacity/ 2.5 Peaking Factor)	1990 Average Daily Flow Rate	Committed Capacity	Residual Capacity GPD/EDU
1.309 MG	.750 MG	.407 MGD	.152/430

The Donnerville service area is mostly developed. *Therefore, future demands from East Hempfield will be minimal; however, other areas serviced by the Blue Rock Pump Station ($\pm 3,563$ acres of Manor Township) could incur growth, which exceeds current residual capacity. If development in these areas continue, an upgrade of the pump station will be required.*

URBAN DRIVE

The Urban Drive service area (± 30 acres within East Hempfield Township of a 1,353-acre system) gravity flows to an interceptor, located on Urban Drive, Columbia Avenue and Centerville Road. This interceptor connects to the Charlestown Pump Station. The interceptor functions at less than 50% pipe capacity for the average daily flow. *The Urban Drive service area is mostly developed; therefore, future demands will be minimal and easily accommodated by the existing system.*

CENTERVILLE

The Centerville service area (639 acres, all within East Hempfield Township) connects to the Brubaker Run service area. The portion of this interceptor which services Chestnut Hill and the Brubaker Run service area, experiences infiltration/inflow problems. LASA has attempted to reduce upstream inflow problems by repairing manholes, and will continue to pursue the disconnection of illegal sump pumps. The horizontal alignment of the interceptor located north of Industry Drive restricts the line capacity in the vicinity of Centerville Road. Minor realignment of the interceptor will be necessary prior to a substantial increase in flow being permitted. *It is estimated that the average daily peak flow utilizes less than 50% of the interceptor's pipe capacity; therefore, the projected flow from development of the remaining land should be accommodated by the existing interceptor.*

BRUBAKER RUN

The Brubaker Run service area (± 940 acres within East Hempfield Township of a 1,065-acre system) connects by gravity flow to the Conestoga Creek interceptor. Infiltration/inflow problems have reduced pipe capacity at maximum wet weather flow. As indicated in the Centerville service area, LASA is working to correct the infiltration/inflow problem. *It is estimated that the average daily peak flow utilizes less than 50% of the interceptor's pipe capacity. It is anticipated that this service area can continue to provide sewer service for future development.*

BARRCREST

The Barrcrest service area (± 280 acres within East Hempfield Township of a 609-acre system) has a gravity flow connection to the Little Conestoga Creek interceptor. Infiltration/inflow results in a reduced pipe capacity for the maximum wet weather peak flow conditions. LASA anticipates that the disconnection of illegal sump pumps will increase pipe capacity. This service area contains only small undeveloped areas. *It is estimated that the average daily peak flow utilizes less than 50% of the pipe's capacity. LASA anticipates that future development in this service area can be adequately serviced.*

ROHRERSTOWN

The Rohrerstown service area (± 445 acres within East Hempfield Township of a 622-acre system) gravity flows to the Little Conestoga Creek interceptor. *It is estimated that the average daily peak flow utilizes less than 50% of the interceptor pipe's capacity. This service area contains adequate capacity to service future development.*

ROUND TOP

The Round Top service area (± 375 acres within East Hempfield Township of a 1,902-acre system) gravity flows to the Little Conestoga Creek interceptor. *This service area presently contains only a small number of existing users. It is anticipated that adequate capacity exists for new development.*

OYSTER POINT

The Oyster Point service area (± 150 acres within East Hempfield Township of a 689-acre system) gravity flows through six downline service areas (see schematic of conveyance system) en route to the Little Conestoga Creek interceptor. The majority of the Oyster Point and Snapper Dam service areas is located in West Hempfield Township. The interceptor for both service areas functions at greater than 50% pipe capacity for the average daily peak and the maximum wet weather peak flow. LASA projects possible construction of an 8-inch diameter pipe, parallel to 1,056 feet of the existing interceptor by the year 1995. This improvement may provide sufficient

capacity for the projected growth. *Substantial new development in this service area should be delayed until added capacity is available.*

GOLDEN ACRES

The Golden Acres service area (536 acres, all within East Hempfield Township) gravity flows through five downline service areas en route to the Little Conestoga Creek interceptor. The Golden Acres interceptor functions at greater than 50% pipe capacity for the average daily peak and the maximum wet weather peak flow may be due to infiltration and inflow. The majority of the undeveloped land in this service area is owned by East Hempfield Township; therefore, substantial increase in demand is not anticipated. *LASA expects adequate capacity will exist in this service area following the disconnection of illegal sump pumps.*

SNAPPER DAM

The Snapper Dam service area (±540 acres within East Hempfield Township of a 1,532-acre system) gravity flows through four downline service areas en route to the Little Conestoga Creek interceptor. *The Snapper Dam interceptor functions at less than 50% pipe capacity for the average daily peak; therefore, capacity should be adequate for future development.*

LANDISVILLE

The Landisville service area (±474 acres within East Hempfield Township of a 2,049-acre system) traverses four downline service areas and utilizes four pump stations for access to the Little Conestoga Creek interceptor. Three of the pump stations (Landisville #1, Landisville #2, and Salunga) service customers in East Hempfield Township. The characteristics of the pump stations are as follows:

Pump Station	Average Daily Capacity (Peak Capacity/ 2.5 Peaking Factor)	1990 Average Daily Flow Rate	Committed Capacity	Residual Capacity (GPD/EDU)
Landisville #1	280,512	198,696	40,000	158,696/448
Landisville #2	76,032	53,064	4,200	48,864/138
Salunga	172,800	23,400	149,400	0/0

While the residual capacities of the Landisville #1 Pump Station is capable of accommodating 448 new EDU's, an interceptor capacity problem along Stanley Avenue drastically limits new growth within this service area. This 10-inch diameter line is currently at capacity. Although enlargement of the Stanley Avenue line may increase capacity, it is not likely that construction will take place within the time frame of this Plan. *No new growth areas should be targeted for the Salunga and Landisville #1 Pump Stations. The Landisville #2 Pump Station can service additional growth; however, only limited undeveloped areas exist.*

PARKVIEW

The Parkview service area (265 acres, all within East Hempfield Township) flows through three downline service areas for access to the Little Conestoga Creek interceptor. This interceptor functions at greater than 50% of the pipe capacity for the maximum wet weather peak flow. LASA anticipates a possible increase in pipe capacity following the disconnection of illegal sump pumps. *Adequate capacity will be available for development of the open areas within the Parkview service area.*

BOWMAN

The Bowman service area (805 acres, all within East Hempfield Township) flows through the Colebrook and Colonial Crest service areas on way to the Little Conestoga Creek interceptor. This service area functions at greater than 50% pipe capacity at the maximum wet weather peak flow. LASA anticipates a possible increase in pipe capacity following the disconnection of illegal sump pumps. *Adequate capacity will be available for development of the open areas within the Bowman service area.*

COLEBROOK

The Colebrook service area (3,941 acres, all within East Hempfield Township) flows through the Colonial Crest service area to the Little Conestoga Creek interceptor. This service area functions at greater than 50% pipe capacity at the average peak flow, and greater than 100% at the maximum wet weather peak flow. LASA plans to correct inflow problems by the above described program to remove illegal sump pump connections. This service area accepts the wastewater flow from six other service areas, as well as representing the largest service area. Within the Colebrook service area, less than 20% (± 735 acres) is accessible to the existing interceptor. The largest portion of the Colebrook service area is separated from the interceptor by PA Route 283. The area located on the north side of PA Route 283 represents a potential capacity demand which greatly exceeds the residue capacity of the interceptor. *Upon reduction of the existing infiltration/inflow, the Colebrook service area should contain adequate capacity for the portion located south of PA Route 283. Alternative public sewer service for the area north of PA Route 283 must be available prior to encouraging future growth.*

COLONIAL CREST

The Colonial Crest service area (± 260 acres within East Hempfield Township of a 584-acre system) adjoins and gravity flows to the Little Conestoga Creek interceptor. This service area functions at greater than 50% pipe capacity at the average peak flow, and greater than 100% at the maximum wet weather peak flow. LASA plans to correct inflow problems by disconnecting sump pumps. *Upon correction of the infiltration/inflow problems, this service area should contain adequate capacity for future growth.*

GRAYSTONE

The Graystone service area ($\pm 1,480$ acres within East Hempfield Township of a 1,868-acre system) utilizes two pump stations at its northern section to access a gravity flow interceptor. The interceptor gravity flows to the Little Conestoga Creek interceptor. The characteristics of the pump stations are as follows:

Pump Station	Average Capacity (Peak Capacity/ 2.5 Peaking Factor)	1990 Average Flow Rate	Committed Capacity	Residual Capacity (GPD/EDU)
Graystone #1	57,600	6,600	51,000	0/0
Graystone #2	57,600	24,000	33,000	0/0

Pipeline development has reserved all future capacity from the pump stations. This condition eliminates further service in the area north of Graystone Road. The remaining service area functions at less than 50% pipe capacity at the average peak flow. This service area experiences infiltration/inflow problems. *Except for the area north of Graystone Road, adequate capacity exists to service development in this area.*

EAST PETERSBURG

The East Petersburg service area (± 518 acres within East Hempfield Township of a 4,264-acre system) gravity flows to the Little Conestoga Creek interceptor. *The service area functions at less than 50% pipe capacity; therefore, sewer service is available for future development of the East Petersburg service area.*

SUMMARY

Based upon analyses conducted by LASA, it would appear that ample conveyance and treatment capacity generally exists throughout the Township. The only exceptions are noted as follows:

- Within the Oyster Point service area, new development should be postponed until a new 8-inch line can be installed parallel to the existing interceptor, possibly by 1995;
- No new growth should be planned to rely upon the Salunga nor the Landisville #1 Pump Stations;
- No new growth should be planned to the north of PA Route 283 within the Colebrook service area; and,
- No new growth should be planned north of Graystone Road.

Additionally, the Township should assist LASA in its campaign to disconnect illegal sump pumps and downspouts from the public sewer system. The results of such disconnections will enable continued use of existing facilities to serve future growth without expensive improvements.

C. SOLID WASTE MANAGEMENT AND RECYCLING

By the early 1980's, the management and handling of solid waste had become increasingly sophisticated, and the amount of refuse generated within Lancaster County was on the rise. As a result of these conditions, and in accordance with the Pennsylvania Solid Waste Management Act of 1980, the Lancaster County Solid Waste Management Authority prepared a comprehensive and up-to-date Countywide municipal waste management plan. *The Lancaster County Solid Waste Management Plan* (1986) was adopted by the Lancaster County Board of Commissioners on September 17, 1986. This plan, approved by the Pennsylvania Department of Environmental Resources (DER) on September 30, 1987, joined the Township with Lancaster County in its efforts to plan for the efficient disposal of solid wastes. Under this agreement, Lancaster County and its Solid Waste Management Authority "will assist all municipalities within Lancaster County with the disposal of municipal solid waste generated within the County." The plan also emphasizes the need for waste reduction, recycling and resource recovery to increase the effectiveness of future disposal methods.

The following narrative provides an overview of the *Lancaster County Solid Waste Management Plan*:

The Pennsylvania Solid Waste Management Act of 1980 requires that each municipality with a population density of 300 inhabitants per square mile submit to the PA DER an officially adopted solid waste management plan. A solid waste management plan is to provide guidelines for the safe and proper storage, collection, transport, processing, and disposal of municipal waste generated within each community. The majority of the municipalities within Lancaster County agreed to delegate the responsibility for development of the plan to the Lancaster County Solid Waste Management Authority (LCSWMA), with the expectation that the plan would later be approved and adopted by each participating municipality. This plan is described in the following paragraphs.

Because of the advantages associated with resource recovery, the plan is geared toward the implementation of a waste-to-energy system. The crux of this system is the processing facility. The plan proposed the construction of a mass burn water-wall facility that would be capable of handling approximately 1,200 tons per day of municipal solid waste. The heat generated by this process would be used to create steam, which in turn will be used to generate electricity. This electricity would be sold to an electric utility company, and the revenues

generated by this sale would be used to offset in part the costs associated with the operation of this system. The resource recovery facility, located in southern Conoy Township, began operating in May, 1991. The 1,200 ton per day facility is in full operation, burning solid waste and generating electricity. This facility is anticipated to meet the solid waste disposal needs of Lancaster County for the next 30 years.

An additional key feature of the plan is the increased reliance upon recycling. The recovery, collection and sale of newspapers, glass, aluminum, rags, and other recyclable materials, which began as a significant effort by several volunteer organizations in Lancaster County, has been further promoted by the hiring of a full-time, paid Countywide coordinator. In addition, financial support has been provided to increase the number of collection shelters, to furnish materials handling equipment, and to meet other requirements of the organizations. Furthermore, centralized coordination and support has been provided to the marketing of the recyclable materials to obtain more stable prices through longer-term arrangements with brokers and recycling industries. [passages omitted]

To provide for the orderly collection and transport of non-recycled waste to the processing facility, the plan has proposed the eventual construction of up to three transfer stations. The most suitable locations for these transfer stations have been determined through a subdivision of Lancaster County into four catchment areas, which focus on population centers of the central, northwest, northeast, and southern portions of the County. Since the location of the resource recovery facility is located in the northwest catchment area, then the three transfer stations are proposed for each of the other three catchment areas. These transfer stations would be installed when the costs of transporting wastes directly to the processing facility becomes greater than the transfer operation. No date has been estimated for the installation and use of the transfer stations. Each transfer station will be a direct discharge unit and have the capability of handling 150-250 tons per day.

The County had been disposing much of its municipal waste at the Creswell Landfill between 1968 and 1989. However, the Pennsylvania Department of Environmental Resources has recently begun to re-evaluate the environmental impacts of unlined landfills, particularly the impact they have on groundwater contamination. Because the Creswell and other landfills under the Authority's operation were unlined, the potential for adverse environmental impacts existed. When faced with the need for a new landfill, the Authority decided to build a state-of-the-art landfill adjacent to the Creswell Landfill, called the Frey Farm Landfill. This landfill has enough capacity to operate until at least the year 2015.

Hazardous waste, agricultural waste and sewage sludge are referred to in the plan but are not administered by Act 97. Other state programs have been developed to control these wastes. The LCSWMA should continue to evaluate current processes for management of these wastes and implement programs for environmentally safe, long-term disposal.¹

One important element of this Countywide solid waste disposal program is an increased reliance upon waste reduction and recycling.

On July 28, 1988, Pennsylvania Governor Casey signed into law Act 101-1988, commonly known as the "Municipal Waste Planning Recycling and Waste Reduction Act." This Act aggressively required local municipalities whose 1980 population exceeded 5,000 until September 26, 1991, to implement such a program.

The Act specifies that municipal implementation of a recycling program include the following elements:

1. Adoption of an ordinance that requires:
 - A. Source separation of at least three different waste materials, including clear glass, colored glass, aluminum, steel and bimetallic cans, high-grade office paper, newsprint, corrugated paper, and plastics;
 - B. Separation of leaf waste for collection; and,
 - C. Separation of high-grade office paper, aluminum, corrugated paper, and leaf waste from commercial, municipal, or institutional establishments.
2. Scheduled collection day(s) for recyclables at least once per month;
3. Securement of vehicles and related equipment for material collection;
4. Provision of enforcement of local recycling ordinances, including penalties and incentives; and,
5. Establishment of a comprehensive and ongoing public information program regarding recycling program features, benefits, and requirements.²

¹The Solid Waste Advisory Committee, *Lancaster County Solid Waste Management Plan* (Lancaster, PA: Adopted September 17, 1986), pp. 8-1 and 8-2.

²Information obtained from handouts of the Lancaster County Solid Waste Management Authority.

East Hempfield Township had a 1980 population of 15,152; therefore, the Township was expected to comply with Act 101 - 1988 and implement a mandatory recycling program prior to September 26, 1991. In July, 1990, the Township Supervisors approved a recycling program under Ordinance #090-7A entitled "The Recycling Ordinance." This ordinance mandated that all households within the Township source-separate designated recyclable materials.

The following recyclable materials are required to be source-separated by all households:

1. Glass
2. Aluminum
3. Steel and bi-metallic cans
4. Newsprint
5. Yard wastes (except grass and garden clippings)
6. Leaves
7. Tires
8. Large appliances (white goods)

All nonresidential units are required to source-separate the same recyclable materials as residential households, plus the following:

1. High-grade office paper
2. Corrugated cardboard

The Township contracted with the York Waste Disposal Company as its single hauler. This contract is expected to expire in September, 1993.

Under the provisions of the Township's recycling ordinance, residents of three units or less buildings can only set out three 32-gallon trash bags or containers per week, each weighing no more than 30 pounds. Residents who wish to set out extra trash containers or oversized items must mark each container with a special tag. These tags are as follows:

1. Yellow tag - cost \$1.25 - for each 32-gallon bag or comparable items over the three-bag limit.
2. Green tag - cost \$1.25 - for yard waste, such as leaves, grass, and grass clippings. Yard waste must be tagged at all times, no matter how many bags are put out.
3. Red tag - cost \$4.00 - for oversized refuse items, such as furniture, carpet, or televisions.

4. White tag - cost \$12.00 - for white goods, such as refrigerators, washers, or dryers. These types of items will only be picked up twice a year during special collection days.

A beneficial result observed since the start of the recycling program has been the overall reduction in household waste being hauled to local landfills. Since the recycling program began, Township residents have been recycling an average of 20% of their household waste. This amount is only 5% short of the 25% goal, which was set out to be reached by the year 1997, as outlined in Act 101.

D. OTHER UTILITIES

Aside from the public sewer and water utilities described earlier in this section, several other utility lines pass through the Township. Many of these rights-of-way (R.O.W.) associated with these utilities have distinct implications on future land use. *While there has been a deliberate attempt to map and describe the extent of these R.O.W.'s, as well as present the guidelines and restrictions regarding development on or around them, this analysis should not be used as a replacement for direct contact with representatives of the various utility companies. Potential land developers and residents living near these R.O.W.'s should use the PA One Call System at (800) 242-1776 to contact representatives of the various utility companies in regard to any proposed projects that may involve any utility facilities. The following briefly describes those utility companies R.O.W. and the restrictions regarding them. The locations of these R.O.W. are depicted on the Other Utilities Map located on page 145.*

Sun Pipe Line Company [Source - Tony Mitchell, Supervisor - Design-Drafting (215/975-5819)]

The Sun Pipe Line Company maintains a 6-inch high pressure (1,200 psi) petroleum products (gasoline) pipeline across southern East Hempfield Township. The total R.O.W. width of this pipeline is 40 feet, 20 feet on either side of the pipeline itself. There are several restrictions regarding land development within and near the pipeline R.O.W. regardless of the status of the pipeline itself. The following lists those general restrictions regarding the R.O.W., as stipulated by the Sun Pipe Line Company:

1. A driveway or roadway may cross the Right-of-Way and pipeline perpendicular but at no time will it be parallel to, over and within the Right-of-Way.
2. Buildings, trees, shrubs, or any obstruction of a permanent nature shall not be constructed, planted, or placed closer than 20 feet to any existing pipeline (40' easement).

3. Wells, leach beds, cesspools, or sewer systems of any type shall not be placed within Right-of-Way.
4. All underground facilities crossing the Right-of-Way shall cross under the existing pipeline within a minimum of one-foot clearance. This includes sewer drain lines.
5. The earth cover over the pipelines shall be maintained and never changed in any manner without the express permission of Sun Pipe Line Company.
6. Any parking area placed over the pipeline by permission of Sun Pipe Line Company shall be subject to encroachment agreement entered into by subject parties prior to construction of same.
7. If heavy equipment is to cross existing pipeline for any reason, it will be necessary for owner to provide a ramp of sufficient material to protect said pipeline. Sun Pipe Line Company will make the decision as to how much fill will be required for ramp. Upon completion of construction and discontinuation of heavy equipment passage over pipeline, ramp may be removed.
8. Please contact the PA One Call System at (800) 242-1776 at least three days prior to any construction activity near the pipeline(s).³

Texas Eastern Gas Pipeline Company [Source — Doug Chaney, Right-of-Way Agent (215/696-4300)]

Texas Eastern Gas Pipeline Company maintains two separate gas pipelines within its R.O.W. which runs across central East Hempfield Township. One pipeline is a 36-inch line which lies on the south side of the R.O.W., the other is a 20-inch line lying on the north side of the R.O.W. The two lines are approximately 25 feet parallel and adjacent to each other. There is also a 25-foot setback on the outside of each line. Combined, these total a 75-foot overall R.O.W. Listed below are the general requirements regarding construction within or near the Texas Eastern pipelines:

- "1. No building or other obstruction is to be erected within the pipeline easement. The easement width will be provided by Texas Eastern on request. The planting of trees will not be permitted on the right-of-way.

³Sun Pipe Line Company, "General Restrictions, Sun Pipe Line Company Right-of-Way," (Wayne, PA), 1991.

2. No reduction in grade is permitted within the pipeline easement. Additional fill may be deposited, with written approval by Texas Eastern.
3. Proposed roads must cross the Company's easement as near to 90 degrees as possible. If, in the sole judgment of Texas Eastern, casing or a pipe replacement is required for safety, the owner and/or developer shall pay the estimated cost prior to Texas Eastern making the adjustments. If actual costs are less than the estimated cost, the owner/developer shall be refunded the overpayment. If actual costs are greater, the owner/developer shall pay Texas Eastern the additional amount.
4. Utility lines must be installed, when possible, below Texas Eastern's pipelines, with a minimum of 12 inches clearance.
5. All fiber optics communications cable crossings are to be installed beneath Texas Eastern's pipeline with a minimum clearance of 12 inches. Suitable backfill shall be placed between the fiber optics cable crossing and Texas Eastern's pipeline. Cable shall be installed as close as possible to a 90-degree angle with the longitudinal axis of the pipeline. Cable conduits should be encased in color-coded yellow concrete across the entire easement.
6. Low voltage underground electrical lines are to be installed with a minimum clearance of 12 inches beneath Texas Eastern's pipeline. Cable shall be installed as close as possible to a 90-degree angle with the longitudinal axis of the pipeline, and the crossing route should be clearly and permanently marked on each side of the easement. If cables are greater than 600 volts, they shall be installed with a minimum clearance of three (3) feet beneath Texas Eastern's pipeline in a non-metallic conduit that is encased in color-coded red concrete across the entire easement and the neutral wires shall be wound in a spiral around the rest of the wiring and grounded on each side of the easement. Texas Eastern will determine the installation procedures for electrical lines with voltages of over 7,600 volts on an individual basis.
7. No parking area shall be constructed over the pipeline without prior written approval by Texas Eastern.
8. A Texas Eastern representative must give approval for heavy equipment to cross the pipeline at any location.

9. No blasting is permitted within the pipeline right-of-way and no blasting shall occur outside the easement area if such blasting may be harmful to Texas Eastern's facilities. Texas Eastern shall be advised of any blasting proposed within 1000' of its facilities. Blasting codes shall be followed in all cases.
10. Texas Eastern shall receive at least three (3) working days notice of any work or excavation over or near its pipelines so that we may locate our pipelines and have our field representative present during excavation.
11. Mechanical digging equipment shall not be used for exposing the pipelines. The lines shall be exposed, after notice to the Company, using hand tools and with a Texas Eastern inspector present.
12. Texas Eastern wants developers and contractors to know the exact location of its pipelines, and we believe it is important that the lines be shown on the contractor's plans. At a developer's request, we will locate, stake, and expose our pipelines at given points at no cost.
13. Three (3) copies of any proposed plans for work within our easement shall be submitted to Texas Eastern for review at least 30 days prior to the commencement of work.
14. The developer shall comply with the provision of Pennsylvania Act 1986-172 of the 1986 Session (approved December 12, 1986), which relates to excavation and demolition work in the vicinity of underground facilities."⁴

Mobil Pipe Line Company [Source — Eugene P. Graves, Right-of-Way Representative (716/427-7510)]

Mobil Pipe Line Company maintains an 8-inch petroleum products pipeline, which traverses the northeast corner of East Hempfield Township. The pipeline is a liquid petroleum products pipeline, which carries the following refined petroleum in batches at different times:

3 grades of gasoline
heating oil
kerosene

⁴Texas Eastern Gas Pipeline Company, "General Requirements for Construction in the Vicinity of our Pipelines," (West Chester, PA), 1991.

The R.O.W. has a minimum total width of 50 feet, 25 feet on either side of the pipeline itself. The following is a list of general restrictions concerning development around this R.O.W., as prescribed by the Mobil Pipe Line Company:

- "1. No building or structures will be allowed within 25 feet of our pipeline as located by our personnel on the site.
2. No change in grade over the pipeline or within 25 feet of the pipeline will be allowed without our written consent.
3. Utilities must cross under our pipeline with at least 1 foot of clearance.
4. Roadways may cross our pipeline at as near a 90-degree angle as possible, provided we have adequate cover for the protection of our pipeline from the weight of the vehicles using the roadway. If the roadway is to be paved, Mobil Pipe Line Company will not be responsible to replace said paving if it is necessary to remove the paving to gain access to the pipeline.
5. When plans are prepared for development of the property, we will require a copy be sent to this office for our review and comment before proceeding with the work.
6. We will require notice in accordance with Pennsylvania Act 172 before any excavation proceeds in the vicinity of our right-of-way."⁵

American Telephone and Telegraph Company [Source — P. M. McDermott, Supervisor (717/234-5059)]

AT&T maintains one underground telephone cable and associated R.O.W. which runs through the central part of East Hempfield Township. This cable R.O.W. consists of the northwest-southeast running Wayne-Harrisburg FT "A" cable. The total R.O.W. associated with this cable is 16½ feet wide. The following is a list of restrictions concerning development on or near the cable:

- "1. Company personnel have the right to enter and exit over and across your land for the purpose of operating and maintaining the Communication System.
2. Company has the right to clear and keep cleared all trees, roots, brush, and other obstructions from the surface of the

⁵Mobil Pipe Line Company (Rochester, NY), 1991.

16 1/2 foot wide strip, and to place surface markers beyond said 16 1/2 foot wide strip.

3. Company has the right to install gates in any fences crossing said strip.
4. Current and future land owners are obligated by terms of the original right-of-way and easement to forever covenant that no structure shall be erected or permitted on said strip.
5. No reduction of grade or removal of soil is permitted on right-of-way.⁶

Pennsylvania Power and Light Company [Source — Nora Good, Right-of-Way Agent (717/569-2634)]

Pennsylvania Power and Light Company maintains five 69,000 volt overhead transmission lines which extend across the Township. The first transmission line is called the West Hempfield-Armstrong-Marietta/West Hempfield-South Manheim line. This line conveys 69,000 volts and generally follows the Landisville Railroad line through the western portion of the Township. The second line is the 69,000 Landisville Tap, which runs from the West Hempfield-Armstrong-Marietta/West Hempfield-South Manheim line to the Landisville substation on Oak Lane.

The third transmission line is called the West Hempfield-South Manheim line #1 and #2. This line also conveys 69,000 volts of electricity, and follows the Conrail rail line across the southern portion of the Township. The fourth line is the West Hempfield-South Manheim #3 line and follows the Penn Central rail line through the northeastern corner of the Township. This line carries 69,000 volts. Finally, the fifth line is the Kellogg's Tap which extends from the West Hempfield-South Manheim #3 line to the Kellogg's plant located off State Road. This line is also 69,000 volts.

All five transmission lines contain variable right-of-way widths which range from undefined to 100 feet (50 feet on either side). The following is a list of guidelines, general restrictions and conditions regarding development on or near the PP&L rights-of-way:

"Basic Restrictions for All Types of Requested Uses:

1. No buildings, swimming pools, or other structures, temporary or permanent, may be erected.

⁶American Telephone and Telegraph Company, "Rights Granted to AT&T Regarding Its Right-of-Way," (Harrisburg, PA), 1991.

2. No changes to existing grades are allowed without the Company's prior approval based on detailed drawings.
3. Storage of material or regular parking of trucks which contain highly inflammable or explosive cargos are prohibited. Storage of inflammable fuels or fueling of vehicles is also prohibited.
4. The Company reserves unrestricted rights of ingress or egress for line maintenance or other work. Access to Company facilities shall at no time be impeded.
5. Blasting under or near the line is prohibited unless a blasting procedure is submitted and approved by the Company. The Company assumes no liability in approving the blasting procedure but reserves the right to prohibit any blasting that is not performed in a safe manner.
6. If counterpoise, usually 12 inches to 18 inches below grade, or any other Company facility is damaged or severed, the damage shall be reported immediately to the Company and re-established by the Company at the responsible party's expense.
7. The Company reserves the right to reconstruct the line including relocation or addition of poles and relocation or installation of buried counterpoise.
8. Barriers approved by the Company shall be installed, as required, to protect line structures.
9. The Company shall be relieved of all responsibility for environmental problems resulting from construction on or use of Company property or rights-of-way and any such problems shall be resolved without expense to the Company and with the approval of and to the satisfaction of all appropriate local, state and federal governmental agencies.
10. The Company shall be relieved of all responsibility for damage or injury resulting from the use of the right-of-way or property.
11. Extreme caution shall be used when operating heavy equipment in the vicinity of Company facilities and energized conductors. Any contact with same shall be reported immediately to the Company.

Basic Restrictions for Installation of Parking Areas or Streets:

12. The Company reserves the right to restrict parking or use of roadways during performance of maintenance or other work.
13. No streets shall be constructed within 5' of the face of a tower or pole unless barriers approved by the Company are installed.
14. The Company reserves the right to reconstruct the line including relocation or addition of poles and relocation or installation of buried counterpoise without any obligation to restore paving or relocate barriers.

Basic Restrictions for Installation of Buried Pipelines (Sewer, Water, Gas, Etc.) and Underground Telephone and Electric Cables:

15. All underground facilities shall be installed to a depth that will withstand an axle weight of 50 tons without damage when traversed by PL Company equipment.
16. All underground facilities shall be visibly marked in the field where they enter or leave the R/W.
17. A 20' minimum horizontal separation shall be maintained from the centerline of the underground facility to the nearest parallel overhead line conductor to provide a safe working space during construction and maintenance of the underground facility.

Basic Restrictions for Planting Trees and Shrubbery:

18. The Company reserves the right to trim or remove any tree or shrub that interferes with maintenance or operation of the Company's facilities without any obligation to restore same.
19. No planting shall be allowed to exceed the following heights for the highest voltage line existing or planned on the right-of-way:

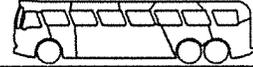
<u>Line Operating Voltage</u>	<u>Maximum Tree Height</u>
69—110 kV	14'
138 kV	10'
230 kV	12'
500 kV	10'

Other Miscellaneous Restrictions:

20. Proposed signs or lighting structures shall be reviewed by the Company as to height limitations for the particular locations selected, and approved, before installation.
21. Fences shall not exceed 10' in height. If a fence is of a metallic type it shall be adequately grounded.
22. Fences which cut-off access to the line shall be equipped with gates and Company locks.⁷

⁷Pennsylvania Power and Light Company, "General Restrictions and Conditions Which Apply to Requests by Property Owners, Customers, Etc. for Use Of, or Encroachment On, Company Transmission Line Rights-of-Way, Building Restriction Limits, or Company Properties Encumbered by Transmission Line Facilities," (Allentown, PA), April 12, 1982.

IX. TRANSPORTATION SYSTEM



Mobility has become one of the most sought-after qualities of life of this century. The widespread use and development of automobiles, trucks, and their road networks have enabled motorists to travel independently with great flexibility as to origins and destinations. Only recently, with the worsening of congestion, has society begun to realize that the extensive use of automobiles may in fact be threatening this mobility. Furthermore, as motorist frustration increases, so does risky motorist behavior, which reduces traffic safety.

Locally, traffic congestion has become one of the public's most popular complaints. Without a deliberate attempt to reduce existing congestion, and a plan for future traffic needs, this congestion will only worsen. Consequently, the quality of life for Township residents and the Township's economic base could become jeopardized. Safety is also a common concern as congestion increases.

In 1990, East Hempfield Township commissioned Herbert, Rowland and Grubic, Inc. to prepare a Township-wide Comprehensive Traffic Study. This study identified and evaluated the major components of the Township's transportation network which were in the process of failing, or were expected to fail in the near future. This study provided a coordinated, comprehensive and continuous look at what is needed to direct the decisions which will enable the network to function effectively and efficiently. This study was designed to meet the needs projected for the year 2001. It should be recognized that this design year could range an additional ten years or more into the future, depending upon demands for new development or redevelopment of current uses. Presented within this traffic study are descriptions of current (1989) conditions, the potential for future development and traffic growth, and the recommendations for highway improvements and other actions to provide improved operating conditions.

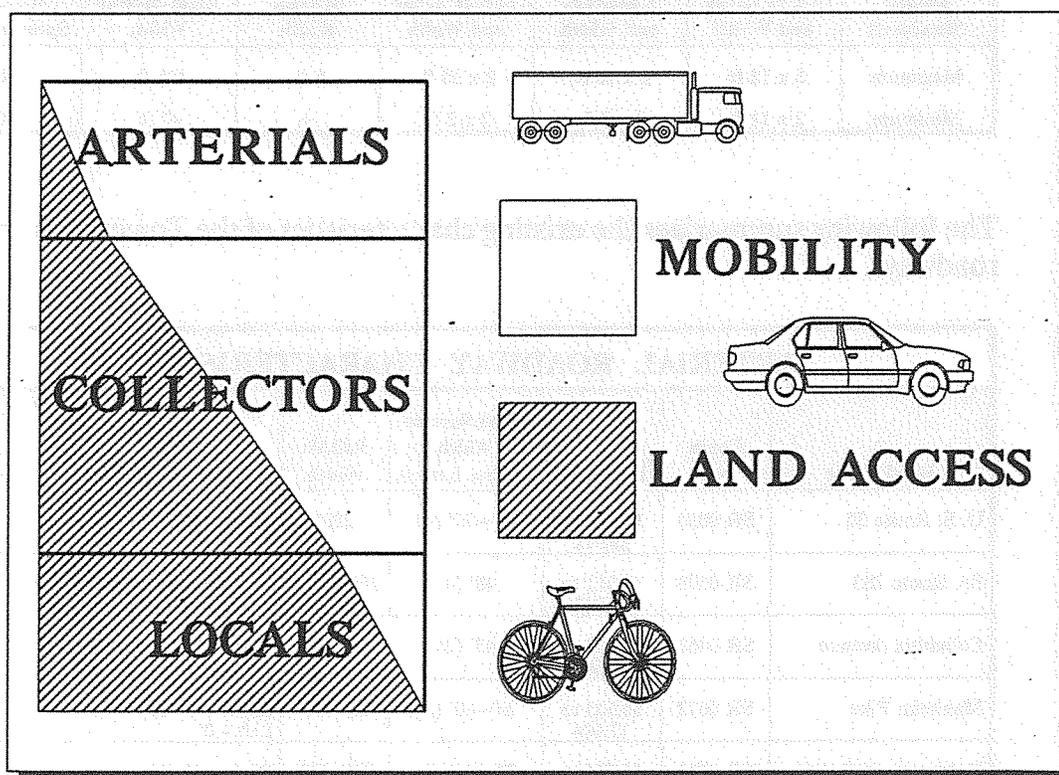
Much of the remainder of this chapter will describe the roadway classifications and design standards, and highlight the important findings and subsequent recommendations made within the Comprehensive Traffic Study.

A. ROADWAY CLASSIFICATIONS AND DESIGN STANDARDS

Functional classification of roadways refers to a system by which roads are described in terms of their utility.

Theoretically, roads provide for two separate functions. First, roads provide for mobility—the ability to go from one place to the next. Second, roads provide a measure of access to adjoining properties. Transportation experts assert that these two roadway characteristics determine a road's functional classification. The following chart depicts the relationship between roadway mobility and roadway land access for each of the three general road types:

**RELATIONSHIP OF FUNCTIONALLY CLASSIFIED SYSTEMS
IN SERVICE TRAFFIC MOBILITY AND LAND ACCESS**



As the preceding diagram reflects, roads that provide for greater mobility, accordingly, yield reduced land access, and vice-versa. This important relationship should always be considered when allocating future land uses along existing or planned roads.

The above diagram illustrates three road types: arterials, collectors, and locals. Certainly, these road types can be further subdivided into any number of different degrees, depending upon the complexity of the roadway network. However, for the purposes of this study, the Township's roadway network can be adequately described by the following four categories. The Roadway Classifications Map, located on page 176, depicts these categories.

ARTERIALS

Arterials are intended to provide for a greater degree of mobility than land access. Hence, individual driveway intersections with arterials should occur infrequently. Arterials generally convey between 10,000 and 25,000 average daily trips (ADT) for distances greater than one mile. These roads often connect urban centers with outlying communities and employment or shopping centers. Consequently, arteries are often primary mass transit routes that connect with "downtown" areas of nearby cities.

The following lists the design standards associated with arterial roads.

ARTERIAL ROAD DESIGN STANDARDS						
Design Standards	No. of Lanes and Width	Shoulders and Width	Border Areas and Width	Median Width	Right-of-Way Width	Design Speed (MPH)
Maximum	5 x 12 ft.	2 x 10 ft.	2 x 20 ft.	6 ft.	126 ft.	50
Minimum	2 x 11 ft.	2 x 8 ft.	2 x 2 ft.	—	42 ft.	40

The following summarizes the existing characteristics of the Township's arterial roadways.

ARTERIAL ROADWAY CHARACTERISTICS						
Road Name	Route No.	1990 ADT	Road Surface Width & (No. Lanes)	R.O.W. Width	Shoulder Width	Speed Limit (MPH)
U. S. Route 30	SR 0030	15,455 to 23,911	88'—92' (4)	220'	Right - 12' Left - 6'	55
PA Route 283	SR 0300	12,312 to 17,913	48' (4)	260'—330'	40' (includes grass median)	55
Columbia Avenue	SR 0462	15,453 to 22,648	43' (2)	50'—55'	Right - 5' (Manor Twp.) Left - 0' (East Hempfield)	35—45
Manheim Pike	SR 0072	16,603 to 17,484	24'—40' (2)	33'—50'	Right - 3'—10' Left - 0'	35—45
Rohrerstown Road/ McGovernville Road	SR 0741	13,674 to 27,500	24'—44' (2)	24'—280'	Right - 2'—10' Left - 0'	25—45
Marietta Pike	SR 0023	8,220 to 16,311	30'—44' (2)	33'—80'	N/A	25—45
Harrisburg Pike	SR 4020	6,541 to 15,122	64'—68' (2)	120'	Right - 10' Left - 0'	25—45

MAJOR COLLECTORS

Major collectors provide for medium length travel distances (less than one mile) and convey between 1,500 and 10,000 ADT. Major collectors also provide land access to major land uses, such as regional shopping centers, large industrial parks, major subdivisions, and community-wide recreation facilities. Some sparsely developed rural uses also have direct access to major

collectors. Major collectors primarily serve motorists between local streets and community-wide activity centers or arterial roads.

The following lists design standards for major collector roads.

MAJOR COLLECTOR ROAD DESIGN STANDARDS					
Design Standards	No. of Lanes and Width	Shoulders and Width	Border Areas and Width	Right-of-Way Width	Design Speed (MPH)
Maximum	2 x 12 ft.	2 x 10 ft.	2 x 20 ft.	84 ft.	35
Minimum	2 x 11 ft.	2 x 8 ft.	2 x 2 ft.	42 ft.	35

The following summarizes the existing characteristics of the Township's major collector roadways.

MAJOR COLLECTOR ROADWAY CHARACTERISTICS						
Road Name	Route No.	1990 ADT	Road Surface Width & (No. Lanes)	R.O.W. Width	Shoulder Width	Speed Limit (MPH)
Centerville Road ¹	T-554 & T-408	7,575 to 24,400	N/A	N/A	N/A	25-35
State Road ¹	0772 & T-554	8,646	24'-42' (2)	33'-150'	Right - 10' Left - 0'	35-45
Church Street ¹	SR 3017	8,636	24' (2)	33'-40'	N/A	25-35
Stony Battery Road ¹ (Marietta Pike to Church Street)	SR 3017	8,636	26' (2)	33'	N/A	35
Farmingdale Road	T-418	N/A	22' (2)	N/A	1'	25
Bowman Road	T-703	1,909	19' (2)	N/A	N/A	35
Nissley Road	T-408	435 to 3,329	(2)	N/A	N/A	25
Running Pump Road	T-374	2,445 to 2,637	21' (2)	N/A	N/A	25-35
Nolt Road ²	T-673	917 to 2,287	22'-35' (2)	N/A	N/A	25-35

¹The Lancaster County Planning Commission designated this road as an Urban Collector in 1979; in 1989, it proposed to upgrade its designation to Urban Minor Arterial (Arterial).

²The Lancaster County Planning Commission designated this road as a Local Road in 1979; in 1989, it proposed to upgrade its designation to Urban Collector (Major Collector).

MINOR COLLECTORS

Minor collectors provide for equal amounts of mobility and land access. These streets serve as the main circulation roads within large residential subdivisions and small rural settlements. Trip lengths tend to be shorter in "developed" neighborhoods, but will be longer in outlying rural areas.

The following lists design standards for minor collector roads.

MINOR COLLECTOR ROAD DESIGN STANDARDS					
Design Standards	No. of Lanes and Width	Shoulders and Width	Border Areas and Width	Right-of-Way Width	Design Speed (MPH)
Maximum	2 x 11 ft.	2 x 10 ft.	2 x 20 ft.	82 ft.	30
Minimum	2 x 10 ft.	2 x 4 ft.	2 x 2 ft.	32 ft.	30

The following lists the Township's minor collector roadways.

MINOR COLLECTOR ROADWAY CHARACTERISTICS						
Road Name	Route No.	1990 ADT	Road Surface Width & (No. Lanes)	R.O.W. Width	Shoulder Width	Speed Limit (MPH)
Graystone Road ³	SR 4013	2,640	24' (2)	33'	0'	
Landisville Road ⁴	T-711	6,999	22' (2)	33'	N/A	35-40
Spooky Nook Road ⁴	T-711	3,028	22' (2)	33'	1'	45
Leabrook Road ⁵	T-707	N/A	22' (2)	33'	1' on each side	35
Yellow Goose Road ⁵	T-802	N/A	24' (2)	33'	N/A	35
Kaufman Road ⁵	T-703	N/A	23' (2)	33'	N/A	35
Spring Valley Road ⁵	T-699	N/A	20' (2)	33'	N/A	25
Sylvan Road ⁵	T-374	1,398	20' (2)	33'	N/A	Not Posted
Stevens Street ⁶	T-709	N/A	18' (2)	33'	1'	35
Colebrook Road ⁶	T-374	2,377 to 3,059	14'-22' (2)	33'	1'-2'	35
Lititz Road ⁶	T-550	N/A	18'-20' (2)	33'	1'	35

³The Lancaster County Planning Commission designated this road as a Rural Minor Collector in 1979; in 1989, it proposed to upgrade it to a Rural Major Collector (Minor Collector).

⁴The Lancaster County Planning Commission designated this road as a Local Road in 1979; in 1989, it proposed to upgrade it to a Rural Major Collector (Minor Collector).

⁵The Lancaster County Planning Commission designated this road as a Local Road in 1979; in 1989, it proposed to upgrade its designation to Urban Collector (Minor Collector).

⁶The Lancaster County Planning Commission designated this road as a Local Road in 1979; in 1989, it proposed to upgrade its designation to Rural Minor Collector (Minor Collector).

LOCAL ROADS

Local roads are intended to provide immediate access to adjoining land uses. These roads are intended to serve up to 25 dwellings and will be quite short within a suburban type development. In outlying rural areas, local roads may run for greater distances and serve more individual properties; however, the sparsely developed character of these areas prevents congestion problems. Finally local roads are intended to only provide for transportation within a particular neighborhood, or to one of the other road types already described.

The following describes the design standards for local streets.

LOCAL ROAD DESIGN STANDARDS					
Design Standards	No. of Lanes and Width	Shoulders and Width	Border Areas and Width	Right-of-Way Width	Design Speed (MPH)
Maximum	2 x 11 ft.	2 x 8 ft.	2 x 8 ft.	54 ft.	25
Minimum	2 x 10 ft.	2 x 2 ft.	2 x 2 ft.	28 ft.	25

All of the roads not previously classified as arterials or collectors are considered local roads.

As noted earlier in this section, the Lancaster County Planning Commission designated the functional classification of the Township's roadways in 1979. In 1989, however, the Planning Commission reevaluated those designations in light of the County's recent growth. In so doing, the Planning Commission proposed the reclassification of many roadways. In East Hempfield Township, several roads were proposed for reclassification. They include:

EAST HEMPFIELD TOWNSHIP ROAD NETWORK			
Road Name	Route No.(s)	1979 Functional Classification	1989 Proposed Functional Classification
Rohrerstown Road/ McGovernville Road	SR 0741	Urban Minor Arterial	Urban Principal Arterial
Harrisburg Pike	SR 4020	Urban Minor Arterial	Urban Principal Arterial
Church Street	SR 3017	Urban Collector	Urban Minor Arterial
Stony Battery Road (from Marietta Pike to Church Street)	SR 3017	Urban Collector	Urban Minor Arterial
Centerville Road	T-408 & T-554	Urban Collector	Urban Minor Arterial
State Road	T-554 & SR 0722	Urban Collector	Urban Minor Arterial
Leabrook Road	T-707	Local Road	Urban Collector
Colebrook Road (from Leabrook Road to State Road)	T-374	Local Road	Urban Collector
Yellow Goose Road	T-802	Local Road	Urban Collector
Kaufman Road	T-703	Local Road	Urban Collector
Nolt Road	T-673	Local Road	Urban Collector
Spring Valley Road	T-699	Local Road	Urban Collector
Sylvan Road	T-374	Local Road	Urban Collector
Graystone Road	SR 4013	Rural Minor Collector	Rural Major Collector
Landisville Road	T-552	Local Road	Rural Major Collector
Spooky Nook Road	T-711	Local Road	Rural Major Collector
Stevens Street	T-709	Local Road	Rural Minor Collector
Colebrook Road (north of State Road)	T-374	Local Road	Rural Minor Collector
Lititz Road	T-550	Local Road	Rural Minor Collector

This list is presented to make Township officials aware of those functional classification changes that are proposed for roads within the Township. It is important to know what function certain roads are anticipated to have so that the Township can allocate future land uses and retrofit others in relationship to their

dependence on roadway access. At this writing, the proposed changes have not been implemented, however, the conditions that prompted these changes are present thereby forcing local officials to acknowledge their increased function.

B. TRAFFIC SAFETY

Along with congestion reduction, traffic safety is also an important consideration in the programming of roadway improvements. High frequency accident locations can result from various factors, such as inadequate roadway design, improper speed limits, driver frustration, negligence, etc. This section will identify those intersections and roadway segments (mid-blocks) which have reported a high number of traffic accidents. It must be understood that this traffic safety discussion is not presented as a qualified engineering analysis; instead, it is offered solely as a way to gain a general understanding of the location and severity of traffic safety problems.

Traffic accident data was obtained from the Township's Comprehensive Traffic Study. The main source for this information was the East Hempfield Township Police Department Traffic Accident Reports for 1989. From these accident reports for the twelve-month period, it was possible to determine the intersections and mid-block locations generating the greatest number of accidents. Listed below are those intersections and mid-blocks which recorded the most frequent number of traffic accidents in 1989 (twelve months).

Number of Accidents	Intersection	Number of Accidents	Mid-Block
13	Rohrerstown Road, Route 30 & Spring Valley Road	9	Rohrerstown Road between Mayer Avenue & Columbia Avenue
10	State Road & Route 283	8	Church Street between Nolt Road and Bowman Road
10	Harrisburg Pike, Rohrerstown Road & McGovernville Road	3	Centerville Road between Nolt Road and Nissley Road
8	Marietta Pike & Centerville Road	3	Rohrerstown Road between Alberm Boulevard & Harrisburg Pike
8	Harrisburg Pike, State Road & Centerville Road		
7	Manheim Pike & Lititz Road		
6	McGovernville Road, Swarr Run Road & Colonial Crest Drive		
4	Columbia Avenue & Rohrerstown Road		
4	Centerville Avenue & Hempland Road		
4	Colebrook Road & Landisville Road		

Based on the accident data presented, it is obvious that accident patterns do occur. The Rohrerstown Road (PA Route 741) and Centerville Road corridors posted the highest number of accidents occurring within the Township. Listed below are the top five roadway corridors within the

Township that recorded the highest number of accidents. During 1989, there were 250 reported accidents Township-wide.

Roadway Corridor	Number of Accidents	Percent of Total Township Accidents
Rohrerstown Road/PA Route 741	68	27.2%
Centerville Road/State Road	51	20.4%
Harrisburg Pike	37	14.8%
Marietta Pike	29	11.6%
Church Street	20	8.0%
Total	205	82%

From this analysis, Township officials can target various transportation and roadway improvements where they are most sorely needed and strive to reduce the adverse impact of future development proposals on these busy roadway corridors.

C. LEVELS OF SERVICE

The degree of traffic congestion at an intersection can be ranked according to six levels of service ranging from service level "A," which is free-flowing traffic, to service level "F," which represents forced movement (heavy congestion). The six levels, as they apply to signalized and non-signalized intersections, are briefly defined in the chart contained on the next page. The methodology used to determine intersection levels of service is the method prescribed in the *1985 Highway Capacity Manual, Special Report No. 209*. In this manual, signalized intersection capacity is evaluated in terms of the ratio of demand flow rate to capacity (V/C ratio), while level of service (LOS) is evaluated on the basis of average stop delay per vehicle (sec./vehicle). For unsignalized intersections, capacity, reserve capacity and level of service are evaluated in terms of critical gap size and conflicting traffic. The generally accepted industry standard is that service levels "A," "B," or "C" are acceptable, "D" is marginal, and "E" and "F" are unacceptable.

According to the Township's Comprehensive Traffic Study, the bulk of the Township's existing areas of congestion are located along the major State routes. Existing locations that have been identified as having unacceptable level of service conditions include:

<u>LOS</u>	<u>Intersection</u>
E/F	Landisville Road and Colebrook Road
F	State Road (SR 0722) and both PA Route 283 (SR 0300) ramp intersections
F	Rohrerstown Road (SR 0741), Flory Mill Road, and PA Route 283 west-bound ramps
D-F	Harrisburg Pike (SR 4020), State Road, and Centerville Road (T-554)
D-F	Harrisburg Pike, Rohrerstown Road, and McGovernville Road (SR 0741)

LOS**Intersection**

F	Rohrerstown Road and both U. S. Route 30 (SR 0030) ramp intersections
D-F	Rohrerstown Road, Bennett Avenue, and Erin Court
D-F	Marietta Pike (SR 0023) and Centerville Road
F	Marietta Pike and Running Pump Road
D-F	Marietta Pike and Rohrerstown Road
D-F	Centerville Road and both U. S. Route 30 ramp intersections
D-F	Columbia Avenue (SR 0462) and Donnerville Road
D-F	Columbia Avenue and Running Pump Road
D-F	Columbia Avenue, Rohrerstown Road and Millersville Road
F	Centerville Road and Industry Drive

As this table reveals, many of the major intersections are experiencing long to very long traffic delays. Where intersections have been designated as "F," delays can exceed one minute per vehicle, which is generally considered unacceptable to most drivers. *These intersections represent the highest need for traffic improvements due to their poor levels of service.*

LEVEL OF SERVICE CHARACTERISTICS ¹				
Service (LOS)	Unsignalized Intersection		Signalized Intersection	
	Reserved Capacity (PCPH)	Expected Delay to Minor Street Traffic	Stopped Delay Per Vehicle (SEC)	Expected Problems to Intersection
A	≥400	little or no delay	≤5.0	very low delay
B	300–399	short traffic delays	5.1 to 15.0	
C	200–299	average traffic delays	15.1 to 25.0	number of vehicles stopping is significant
D	100–199	long traffic delays	25.1 to 40.0	influence of congestion becomes more noticeable
E	0–99	very long traffic delays	40.1 to 60.0	limit of acceptable delay
F	*	extreme delays - usually warrants improvement to the intersection	>60	oversaturated and unacceptable

¹Highway Capacity Manual, Special Report 209, Transportation Research Board, National Research Council, Washington, D.C., 1985.

LOS - Level of Service

PCPH - Passenger Cars Per Hour

D. REGIONAL TRAFFIC IMPACT

Before specific transportation-related recommendations can be made, it is important to understand that the Township possesses several roads that serve a larger traffic shed than that of just the Township.

First and foremost are the two limited access arterial roadways which traverse the Township: U. S. Route 30 and PA Route 283. U. S. Route 30, which runs across the southern part of the Township, connects the Lancaster and York metropolitan areas. There are two interchanges that directly serve the Township. Both the Rohrerstown interchange and the Centerville interchange provide access to U. S. Route 30 for local residents, as well as providing passersby access to the Township. Both of these interchanges have been nearby land uses and traffic patterns. Vehicle-oriented commercial and service establishments, such as car dealerships, gas stations, fast-food restaurants, medical and professional offices, motels, and other retail operations comprise the land use mix in and around these interchanges. Furthermore, the Centerville Road interchange conveys considerable industrial truck traffic to the industrial parks. *Due to the extremely high volume of traffic at these interchanges, and the numerous driveway cuts along Rohrerstown and Centerville Roads, heavy traffic congestion develops. More importantly, this congestion contributes to risky motorist behavior, resulting in a high number of traffic accidents.*

PA Route 283 traverses east to west across the central part of the Township. This limited access arterial roadway connects Lancaster with Harrisburg and points in-between. There are three interchanges that directly serve the Township along Route 283. From east to west, these include the Flory Mill interchange (McGovernville Road), the State Road interchange, and the Spooky Nook Road interchange. Unlike the Centerville and Rohrerstown Roads interchanges along Route 30, the Route 283 interchanges are not as congested. However, that is not to say that the roads forming these interchanges do not carry a high volume of traffic. Both McGovernville Road (PA Route 741) and State Road convey large amounts of traffic volume. However, the relative lack of development at these interchanges reduces conflicting traffic movements, thereby lessening congestion and traffic accidents.

PA Routes 23, 741, 462, 72, and the Harrisburg Pike are other important regional roadways which traverse portions of the Township. These roadways form the major transportation network within the Township, as well as provide important linkages with surrounding communities, particularly Lancaster City.

Because of the regional nature of all these roadways, traffic volumes can increase in short periods of time, due to the ever-changing planning and zoning policies of adjoining municipalities and beyond. *No matter how well East Hempfield Township manages its own growth and resultant traffic, congestion and safety hazards will continue to occur along these major roadways, unless these roadways can be redesigned and improved to accommodate the regional traffic generated by the regional traffic shed.*

In the past, the State had played a primary role in the resolution of regional transportation problems. Today, however, the State only provides assistance to a relatively few number of locales with serious problems, and does not have the resources to deal with all regional road projects that are needed. Local

governments should not take a passive approach and wait for their regional road problems to become serious enough to be eligible for the State's attention. *Instead, the Township, with the cooperation of adjacent municipalities, where applicable, must begin to plan and program for regional road improvements so that the public welfare and convenience is maintained in an uninterrupted fashion.*

E. RECOMMENDATIONS

By combining all the data research in the previous sections (Roadway Classifications, Traffic Safety, Levels of Service, and Regional Traffic Impact), as well as the information described in the Comprehensive Traffic Study (1990), several important recommendations can be made.

The Comprehensive Traffic Study (1990) has developed an extensive set of recommendations. These recommendations are categorized by priority and are summarized as follows:

1. Regional Traffic Coordination

As described earlier, many of the roads in East Hempfield Township convey considerable levels of through traffic originating outside of the Township, particularly Routes 741, 4020 (Harrisburg Pike), 23, 462, 72 and Centerville Road.

To help municipalities respond to such demands, the State passed its Transportation Partnership Act. This Act (Act 47 of 1985) is provided to encourage the improvement of transportation systems through public/private cooperation and funding. *Specifically, the Township could create a Transportation Development District, which would need foreseeable transportation improvements. This District could also include areas and traffic generators from adjoining municipalities. Then, the Township could dedicate any source of funding authorized under Pennsylvania law (e.g., assessments on business and/or affected properties, general taxes, revenue bonds, governmental grants, private contributions, etc.) toward the implementation of transportation improvements. This program requires compliance with costly prescribed procedures, plans, and reviews by the State, as outlined in the Act.*

In addition, the Township is encouraged to cooperate with the Lancaster County Planning Commission to identify and implement roadway improvements and traffic movement strategies that will help to improve the situation.

One such method of cooperation should be encouraged now by the Township, endorsing the development of a municipal resolution requesting that the Lancaster County Commissioners study and act to create a Countywide program for the identification and acquisition of needed short-

run bypasses that serve regional traffic flows. This resolution would be adopted by local municipalities and presented to the Lancaster County Board of Commissioners in early 1992.

2. Traffic Signal Modernization

The Comprehensive Traffic Study revealed that several traffic signal installations within the Township are operating with substandard and/or outdated equipment. The traffic signal inventory performed in 1989 shows that the following intersections in East Hempfield Township require modernized traffic signal controller assemblies: Columbia Avenue and Yale Avenue; and Centerville Road and Marietta Pike. Several other intersections require maintenance to repair minor deficiencies, and all signalized intersections require annual maintenance for cabinet, lens, and reflector cleaning.

Operational improvements to traffic control systems have proven to be highly effective in reducing travel time, stops and delays. They also help to produce significant resultant savings in energy consumption, air polluting emissions and vehicle operating costs.

3. Implementation of Computer-Generated Control System For Existing and Proposed Traffic Signals

The Township can better regulate traffic flow along its most heavily traveled signalized roadways by installing a computer-generated traffic signal control system. Through the interconnection of signalized intersections, the systematic optimization of prescheduled signal timing plans, and the implementation of advanced traffic control functions, a traffic signal control system can be established.

This system, at a minimum, should include existing and proposed traffic signal installations along Centerville Road, Rohrerstown Road and Columbia Avenue.

4. Traffic Sign Improvements

In order to maintain proper and safe traffic movement throughout the Township, traffic signs must be strategically placed to direct and guide motorists. Many traffic signs within the Township get knocked down or are missing, which can lead to hazardous conditions. Traffic signs constantly require maintenance and modernization. However, before a sign maintenance and improvement program can begin, a comprehensive sign inventory should be undertaken. *A systematic sign inventory, performed manually or through photographing or videotaping, can locate deficiencies or damaged signs.*

5. Traffic Control Devices, Pavement Markings and Traffic Sign Maintenance

Similar to the discussion regarding the importance of traffic signs, traffic control devices and pavement markings are equally important in directing motorists and pedestrians safely. *Such traffic control devices, pavement markings and traffic signs need to be properly installed and maintained.*

6. Vehicle Reduction Strategies

Physical improvements to roadways and traffic control devices, traffic sign installation and maintenance, and regional roadway improvements are some of the more direct ways to improve traffic flow, however, there are other ways that have less impact than these physical improvements, but still aid in the reduction of traffic congestion. *Among the strategies which could help in reducing traffic volumes within the Township, and in adjoining urbanized areas, include:*

- *staggered work hours or flex time*
- *carpool/vanpool programs*
- *transit incentives*
- *improvements to existing mass transit programs*
- *new mass transit service*
- *park-and-ride facilities*
- *mass transit route extensions to serve new development*
- *additional bus stop placement to encourage more use of mass transit*

7. Intersection Improvements

Through the Comprehensive Traffic Study, traffic data was collected at 45 street intersections within the Township. These intersections were studied on the basis of traffic volumes, safety, levels of service (LOS), and the need for congestion reduction. A majority of the 45 intersections analyzed in the study have demonstrated a need for improvements to accommodate current, as well as future, traffic volumes and to address existing and future safety conditions. *The Traffic Study lists these intersections and describes the recommended improvements. The majority of the intersections which need improvement are found within the Centerville Road, Rohrerstown Road, Marietta Pike, Columbia Avenue, Harrisburg Pike, and Stony Battery Road/Church Street corridors.*

8. Roadway Segments and Corridor Improvements

Similar to the data collected for the 45 street intersections, approximately 30 miles of Township and State roadways which form the network between those intersections, were also studied. Based upon this analysis, numerous roadway segments and corridors should be improved to meet roadway design standards, to address existing and future safety conditions, and to accommodate existing and anticipated traffic volumes. *These*

roadway corridors are identified and their improvements described, within the Comprehensive Traffic Study. This list includes 35 roadway realignments, 16 roadway widening projects, and the creation of six new roadway segments.

This set of specific recommended improvements is a direct result of the intensive data collection and analysis performed with the Comprehensive Traffic Study. While these recommended improvements appear rather extensive and costly, they are needed to rectify and prevent adverse traffic impacts resulting from the heavy traffic volumes passing within and through the Township. The problems are associated with the heavy traffic volumes using the currently underdesigned roadways and intersections. Because these recommendations represent numerous and needed transportation improvements far and beyond immediate available Federal, State, and local funding sources, they have been listed in order of priority. *Local officials need to periodically refer to the Comprehensive Traffic Study and its list of prioritized recommendations when preparing annual municipal budgets, applying for funding, and when reviewing development proposals.*

Next, a set of general recommendations needs to be enumerated in order to help avoid traffic congestion and hazardous conditions throughout the Township's roadway network. Local officials can impose preventative measures to help reduce future problems associated with the conflicting uses many of the Township's roadways are serving. Several of the Township's arterial and collector roadways possess a large number of driveway connections and intersections, particularly Columbia Avenue, Rohrerstown Road, Centerville Road, Marietta Pike, Harrisburg Pike, Manheim Pike, and Stony Battery Road/Church Street. As described earlier, roads can either provide for greater mobility or greater access, but not both. Clearly, these roads are serving too many functions. It is apparent from the number of vehicles traveling these roads that they are being used for mobility between communities and neighborhoods as arterial roadways. Equally apparent, however, are the tremendous number of driveway connections and intersections occurring along these roadways. These driveway intersections testify to these roads' current use for property access. The combination of these conflicting road functions has produced serious congestion and safety problems, particularly along the entire length of Rohrerstown and Centerville Roads. This congestion has resulted in risky motorist behavior, which has led to a large number of accidents occurring along these corridors. *By reducing the number of driveway connections through zoning requirements, local officials can help decrease the congestion and traffic correlated with these roads' use for extensive land access.*

One solution could be the creation of special transportation improvement overlay zones. These zones would provide land use and design incentives for the joint use of access drives shared by neighborhood properties. Special setbacks, and parking and loading design standards could be reviewed on a case-by-case basis in the hopes of coordinating access between adjoining properties.

Equally important, local officials must seek to prevent the future development of lot-by-lot driveway connections along major arterials and collectors. Zoning requirements that impose setbacks between driveways, access drives, and intersections can be helpful. These setbacks would need to assure access to each existing property and could vary, depending upon the functional classification of the road(s). It might also be appropriate to limit the number of access points to one per lot frontage.

To assure adequate future traffic carrying capacities along major roads, it is recommended that local officials require greater front yard setbacks along such roads. Specifically, it is conceivable that each of the Township's planned major roads could require additional traffic lanes at some later time, particularly those roads identified in the Comprehensive Traffic Study. Consequently, front yard setbacks should be adjusted to protect the future availability of these lands for future road widening. The increased setbacks also serve to keep new structures farther away from traffic noise and potential accidents.

Equally important, however, is the future allocation of land uses along various road types. High volume arterial and major collector roads should pass by land uses that can take full advantage of the higher traffic volumes, without contributing to unnecessary congestion. Intensive commercial, industrial, and residential uses are obvious uses that benefit from the improved mobility provided by these roads; however, these intensive uses must be designed in a manner that minimizes driveway cuts, so that conflicting traffic movements are reduced. Only then will these roads provide for safe and convenient mobility. Major roads can also pass through rural areas that are located between villages and other activity centers. In these rural areas, it is also important to minimize the number of driveway cuts that intersect with the road.

Lower volume minor collector and local roads are primarily designed to provide local access to adjoining properties. These road corridors represent ideal locations for nonintensive rural and single-family detached residential developments. Intensive land uses with their high traffic generation rates should be prevented along these narrower streets. By limiting land use intensity, traffic impacts can be kept in line with the rural/residential character of the areas they serve. These road/land use guidelines are incorporated in the future land use scheme presented in Chapter X; local officials should also be mindful of these guidelines in the evaluation of future rezoning and development proposals.

F. STRATEGIES FOR FINANCING

While some of the previously described recommendations are fairly easily achieved through regulation amendments, the region's real traffic problems will require massive financial outlay. Furthermore, the inter-regional nature of many problems requires contribution beyond East Hempfield Township. The following presents a range of funding options that all should be applied toward meeting needed transportation improvements.

IMPACT FEES

One of the most recent additions to traffic improvement financing are State-enabled impact fees. Act 209 (amendment to Act 247) specifically enables local municipalities to require developers to financially contribute to any needed traffic improvements that would be necessary to serve the proposed development. The Act specifies guidelines that must be followed prior to collection of impact fees:

First, local officials must prepare and adopt a transportation capital improvements plan. This transportation capital improvements plan must be developed via a transportation impact fee advisory committee, with the cooperation of professional transportation engineers and planners. An impact fee advisory committee must number between seven and fifteen members with not less than 40% of the members being representatives of the real estate, commercial, and residential development, and building industries.

As a prerequisite to the development of the transportation capital improvements plan, the advisory committee must develop land use assumptions for the determination of future growth and development. The preparation of this Comprehensive Plan, and resultant Future Land Use Plan, is the first step in assisting any future advisory committee to determine land use assumptions. Once the land use assumptions are adopted, the advisory committee must prepare, again with professional transportation engineers at hand, a roadway sufficiency analysis. This analysis will establish the existing level of infrastructure sufficiency and preferred levels of service within any designated area or areas of each municipality. The roadway sufficiency analysis would be prepared for any roadway within the designated area or areas of each municipality on which the need for road improvements attributable to projected future new development is anticipated.

Finally, by combining the information provided by the land use assumption and the roadway sufficiency analysis, a determination of the need for road improvements to remedy existing deficiencies and accommodate future projected traffic volumes can be made. Following this, the advisory committee should identify these capital projects which the local municipality should consider for adoption in its transportation improvements plan, and delineate the boundaries of a transportation service area or areas. The transportation service area is a geographically defined portion of a municipality which is no larger than seven square miles. This service area, which, pursuant to the results of this

Comprehensive Plan and applicable zoning regulations, contains an aggregation of sites with development potential, which creates the need for transportation improvements to be funded by impact fees. However, no area may be included in more than one transportation service area.

Once these various procedures are achieved and necessary public hearings are held, then the local government can adopt and enact a transportation improvements impact fee, levied upon new development for traffic impacts directly resulting from that new development. This new legislation allows municipalities to upgrade transportation facilities to meet the needs resulting from increased development at the developers' expense. Of course, local governments would need to provide funding for any transportation improvements resulting from previous development.

The concentrated and infill development pattern resulting from this Comprehensive Plan should provide readily identifiable area in which growth (and resulting traffic impact) would occur. These growth areas should be exclusively targeted for roadway sufficiency analysis so as to tap this source of funding.

TRANSPORTATION PARTNERSHIPS

East Hempfield Township could participate under the State's Transportation Partnership Act. This Act (Act 47 of 1985) is provided to encourage the improvement of transportation systems through public/private cooperation and funding. Specifically, the Township could create transportation development districts which are in need of foreseeable transportation improvements. These districts could also include areas and traffic generators from adjoining municipalities. Then, the Township could dedicate any source of funding authorized under Pennsylvania law (e.g., assessments on business and/or affected properties, general taxes, revenue bonds, governmental grants, private contributions, etc.) toward the implementation of transportation improvements. Again, this program requires compliance with costly prescribed procedures, plans, and reviews by the State, as outlined in the Act. Contact PennDOT's Office of Planning for more information.

HIGHWAY ACCESS OR CAPITAL IMPROVEMENTS FUND

This fund can be established as a special fund set aside for capital improvements. Funds could come from a special tax or the use of excess revenues, or both. For instance, a specified amount of the millage could be set aside for this fund. When this fund reaches a certain size, it could then be utilized to contribute to a variety of capital improvement demands.

BORROWING

The municipalities could use their borrowing powers to raise funds for a specific project. This could be done at any time during the ten-year planning period.

HIGHWAY TRANSFER OR ROAD TURNBACK PROGRAM

This program has been sponsored by PennDOT since 1981. Under this program, PennDOT will bring a road up to current specifications and then dedicate it to the participating municipality. Annual maintenance fees are also included (up to \$2,500/mile) by PennDOT. In most instances, the municipality gets a new roadway and funding for maintenance. This is one method of restoring and improving aging and deficient roadways in the municipality. This program can and should be pursued by contacting PennDOT's District 8-0 Engineer's Office in Harrisburg.

ECONS: ENERGY CONSERVATION, CONGESTION REDUCTION, AND SAFETY PROGRAM

This program is aimed at improving the efficiency of existing road systems through traffic signal update and roadway improvements to increase safety and reduce congestion. ECONS projects are accepted by PennDOT on an annual basis and compete with other similar projects across the State, based on the project's benefit to cost ratio. The Township should pursue this program by contacting or submitting eligible projects to the Lancaster County Planning Commission.

COUNTY ROADS DEPARTMENT

Recognizing the inter-regional nature of many of the County's severe congestion problems, Lancaster County government could create its own roads department. Then, projects that would serve regional traffic flow; and would typically transcend local municipalities' abilities to resolve problems, could be undertaken. The creation of a County roads department would need to be justified from a Countywide perspective; however, this approach has successfully dealt with regional transportation issues elsewhere. Local officials may wish to contact County officials to consider the merits of this approach.

The two following funding sources have become an either/or situation this year, based on recent policy by the Lancaster County Commissioners:

Local Share of Liquid Fuels Tax - This provides for a permanent allocation of a part of the Liquid Fuels taxes collected by the State for municipalities. Liquid Fuels allocations may be used for any road-related activity, including maintenance, repair, construction, or reconstruction of public roads or streets. The funding source is the Bureau of

Municipal Services, PennDOT; distribution is by Lancaster County.

Lancaster County Transportation Grant Fund - The Lancaster County Planning Commission recently established a Transportation Grant Fund for projects that will reduce congestion, increase safety, or provide matching funds for other grant programs. The funding for this program is from Liquid Fuels money and the allotment for 1991 is estimated to be one million dollars. Municipalities must submit their project requests by March 31 of each year to be eligible for consideration. If additional information is required, contact the Lancaster County Planning Commission.

G. IMPLEMENTATION PLAN

The numerous recommended improvements that were described within the Comprehensive Traffic Study have been organized into four three-year expenditure periods for a total of twelve years. The arrangement of this improvement schedule is consistent with the priorities previously listed. This schedule has been developed to create some distribution of cost throughout the period with many low-cost improvements, such as isolated intersection improvements in the first three-year expenditure period.

The costs presented represent pre-design 1990 dollars. As a result, this implementation schedule will need periodic refinement and/or updating to reflect actual design and inflation costs. The estimated costs associated with the various improvements include the necessary engineering, construction, right-of-way allowance and additional construction services, such as inspection and administration. Current and potential cost-sharing is presently undetermined. However, known funding possibilities for reducing the Township's cost-share are PennDOT's Twelve-Year Plan, PennDOT's transportation partnership program, HUD's Community Block Grant Program, and projects planned by developers within the Township.

Listed on the following pages are the recommended implementation schedule. This schedule is excerpted from the Comprehensive Traffic Study and is provided here as a reference.

**East Hempfield Township Comprehensive Traffic Study
Recommended Improvements
Implementation Plan**

Priority	1990-91-92		1990-91-92	
	Description	Cost	Description	Cost
1. East Hempfield Regional Roadway Network Improvements	Work closely with Lancaster County Planning Commission to identify roadway corridor and intersection improvements which improve travel patterns on major corridors such as Routes 741, 23, 462, 72, and 4020.		Signalization Only Colebrook/Landisville Roads.	\$ 70,000
2. Traffic Signal Modernization	Modernize existing signal installations to eliminate substandard equipment.	\$ 30,000	Main Street/Stoney Battery Road. Harrisburg Pike & Nissley Road.	\$ 70,000
3. Implement Computer-Based Traffic Control System		\$ 100,000	SR 283 WB & EB Ramps/State Road. Harrisburg Pike/Bowman Road.	\$ 140,000
4. Traffic Sign Improvements	Prepare inventory of traffic signs in the Township and perform necessary maintenance and modernization as a result of the inventory.	\$ 50,000	Centerville Road/Nolt Road. Stoney Battery Road/Church Street.	\$ 70,000
5. Traffic Control Device Maintenance Programs	Implement maintenance programs for traffic control devices such as signs, signals and pavement markings.	\$ 75,000	Marietta Pike/Running Pump Road. Marietta Pike/Farmingdale Road.	\$ 70,000
6. Vehicle Reduction Strategies	Investigate various strategies/programs to reduce traffic volumes such as flextime, carpools, improved transit.		Rohrerstown Road/Regency Square. Columbia Avenue/Donnerville Road.	\$ 70,000
7. Intersection Improvements	Landisville, Spooky Nook and Sherk Roads (alignment improvements). Rohrerstown Road, SR 283 WB ramps and Flory Mill Road (alignment and signalization improvements).	\$ 950,000 \$ 290,000	Columbia Avenue/Running Pump Road. Columbia Avenue and Centerville Road (EB RT lane).	\$ 70,000 \$ 60,000
	Subtotal	\$1,495,000	Centerville Road and Old Tree Drive (SB LT, NB through lanes & additional lane on Old Tree Drive).	\$ 370,000
	Subtotal			\$1,340,000
	Total			\$2,835,000

**East Hempfield Township Comprehensive Traffic Study
Recommended Improvements
Implementation Plan**

1993-94-95			1993-94-95		
Priority	Description	Cost	Priority	Description	Cost
1. East Hempfield Regional Roadway Network Improvements	Work closely with Lancaster County Planning Commission to identify roadway corridor and intersection improvements which improve travel patterns on major corridors such as Routes 741, 23, 462, 72, and 4020.		7. Intersection Improvements	Rohrerstown Road, Bennett Avenue, & Erin Court (signal modifications, LT lanes on all approaches & RT on NB Rohrerstown Road).	\$ 150,000
				Marietta Avenue & Centerville Road (signal modifications, LT & RT lanes on all approaches).	\$ 310,000
				Marietta Pike & Rohrerstown Road (signal modifications (signal modifications & geometric improvements)).	\$ 660,000
				Centerville Road & SR 30 EB & WB lanes (signalization, additional ramp lanes SB LI & NB & SB through lanes).	\$ 650,000
5. Traffic Control Device Maintenance Programs	Implement maintenance programs for traffic control devices such as signs, signals and pavement markings.	\$ 15,000		Centerville & Hempland Roads & MacDonal's Drive (LT lanes on all approaches & RT lanes on NB approach).	\$ 390,000
6. Vehicle Reduction Strategies	Investigate various strategies/programs to reduce traffic volumes such as flextime, carpools, improved transit.			Columbia Avenue, Rohrerstown & Millersville Roads (RT lanes on NB & SB Rohrerstown Road).	\$ 370,000
7. Intersection Improvements	Harrisburg Pike, State and Centerville Roads (realign State Road LI lanes on all approaches & signalization). Harrisburg Pike, Rohrerstown, McCovernville, & Old Kohrerstown Roads (LI & RT on all approaches and signal modifications). Rohrerstown Road, SR 30 WB & EB ramp & Spring Valley Road (realign Spring Valley Road, signalization, additional ramp lanes, additional turn lanes).	\$ 500,000 \$ 420,000 \$1,000,000	Subtotal	Centerville Road & Industry Drive (signalization SB LI on Centerville Road & new lane on Industry Drive).	\$ 200,000
				Harrisburg Pike & Syvan Road (signalization & realignment).	\$ 910,000
				Church Street & Nolt Road (realignment of Nolt Road & curve improvements).	\$ 300,000
Subtotal	\$1,945,000		Subtotal	\$3,640,000	
			Total	\$5,585,000	

**East Hempfield Township Comprehensive Traffic Study
Recommended Improvements
Implementation Plan**

		1996-97-98		1996-97-98	
Priority	Description	Cost	Priority	Description	Cost
1. East Hempfield Regional Roadway Network Improvements	Work closely with Lancaster County Planning Commission to identify roadway corridor and intersection improvements which improve travel patterns on major corridors such as Routes 741, 23, 462, 72, and 4020.		8. Roadway & Corridor Improvements	<u>Roadway Realignments</u> State Road @ South of Colebrook Road @ Metzler Road @ west of Township line	\$ 250,000 \$ 200,000 \$ 340,000
4. Traffic Sign Improvements	Prepare inventory of traffic signs in the Township and perform necessary maintenance and modernization as a result of the inventory.	\$ 10,000		Stoney Battery Road @ Main Street @ Kaufman Road @ railroad crossing @ between Kayo & Hathaway	\$ 80,000 \$ 360,000 \$ 350,000 \$ 270,000
5. Traffic Control Device Maintenance Programs	Implement maintenance programs for traffic control devices such as signs, signals and pavement markings.	\$ 15,000		Ivy Drive @ Stoney Battery Road	\$ 210,000
6. Vehicle Reduction Strategies	Investigate various strategies/programs to reduce traffic volumes such as flextime, carpools, improved transit.			Church Street @ north of Nolt Road	\$ 330,000
7. Intersection Improvements	Centerville & Spring Valley Road (SB L/T lane, signalization, & sight improvements). Nissley & Bowman Roads (sight improvements).	\$ 180,000 \$ 10,000		Camp Meeting Road @ Church Street	\$ 200,000
8. Roadway & Corridor Improvements	<u>Roadway Realignments</u> Landisville Road at east of Junction Road. Graystone Road @ Landisville Road @ Manheim Pike (SR 72) Root Road @ Manheim Pike (SR 72)	\$ 250,000 \$ 250,000 \$ 140,000 \$ 190,000		Harrisburg Pike @ east of Nissley Road @ Sylvan & Old Mill Roads @ east of Rohrerstown Road	\$ 380,000 \$ 490,000 \$ 480,000
				Yellow Goose Road @ State Road	\$ 190,000
				Nissley Road @ between Bowman Road & Woodbridge Drive @ Dale Drive	\$ 350,000 \$ 260,000
				Nolt Road @ Church Street @ Nissley Road	\$ 250,000
				Centerville Road @ south of Nolt Road @ south of Hunters Path	\$ 340,000 \$ 330,000
	Subtotal	\$1,045,000		Subtotal	\$4,990,000
				Total	\$6,035,000

H. MASS TRANSIT

The Red Rose Transit Authority (RRTA) operates a fleet of public buses serving much of Lancaster County. This agency is based within Lancaster City and provides bus service to most of the urbanized areas, as well as outlying boroughs and townships.

East Hempfield Township is served by Columbia Route No. 17, the Elizabethtown/Mount Joy Route No. 18, and the Manheim Route No. 19. Specifically, the Columbia Route No. 17 follows Columbia Avenue, Centerville Road to Hempland Road, and Hempland Road. The Elizabethtown/Mount Joy Route No. 18 follows Marietta Pike to Stony Battery Road, then to Church Street. It continues to follow Church Street to the Harrisburg Pike. Finally, the Manheim Route 19 follows the Manheim Pike. All three of the bus routes originate and terminate in downtown Lancaster City where passengers can link with any of the numerous bus routes serving other sectors of the County.

Presently (December, 1991), the Columbia route operates 19 daily bus trips, Monday through Friday, and 13 on Saturday. The Elizabethtown-Mount Joy route operates ten daily bus trips, Monday through Friday, and seven on Saturday. Finally, the Manheim route operates ten daily bus trips, Monday through Friday, and six on Saturday. These scheduled routes and times are subject to change; current route information is available by calling the RRTA office at 397-4246.

Mass transportation is most effective when it is extensively utilized. To encourage utilization, it is best to select travel routes that run along high density neighborhoods, and commercial and/or industrial activity centers. The existing bus routes follow heavily populated corridors and both serve areas of concentrated residential development and areas of commercial and industrial activity. While these route alignments maximize ridership, they do not provide service for many of the developed areas within the center of the Township. *Local officials should advise the RRTA of this demand and suggest either new or rerouted future bus service within the center of the Township.*

Specifically, new or rerouted bus service should be extended along Rohrerstown Road and Centerville Road. Fortunately, RRTA is planning to implement a new bus route called the Outer Loop which would include Rohrerstown Road, from the Harrisburg Pike to Columbia Avenue. However, this new route is not scheduled to begin operation until 1997.

X. FUTURE LAND USE PLAN



One element important to the comprehensive planning process is the charting of expected growth areas. This effort embodies all of the background information collected regarding natural features, public facilities, existing land use, population studies, and traffic patterns. Then, these resources are allocated in a manner that responds to the community's desires, as expressed in the Community Planning Goals. What results is a future land use map that can be used to adjust zoning boundaries, and help properly locate future municipal investments, so to maximize their efficiency. This chapter should be used in conjunction with the Future Land Use Map contained on page 201.

The preparation of the Future Land Use Map was accomplished according to several "ground rules"; an understanding of these "ground rules" will lead to a better understanding of the Plan's recommendations.

First, a great deal of emphasis was placed on existing land and "pipeline" uses. Furthermore, this document deals with future land use on a property-by-property basis. Consequently, the presence of existing development types and locations were generally maintained. In some limited cases, existing development types were recommended for changes to another land use category to enhance compatibility. In rare instances, existing uses were removed to improve compatibility and safety. Overall, this emphasis on existing land use will keep the Plan practical and should make it more useful to local officials in their evaluation of future land use decisions.

Second, this Plan is designed to address future conditions until the year 2000. Accordingly, future growth areas have been deliberately located and sized to deal with growth that is projected during this time frame. The consideration of how much land is needed to accommodate projected growth represents a major difference between this Plan and the former plan. This results in a "staged" future land use scheme that (1) reduces the conversion of productive farmlands, (2) confines development areas so that public improvements and services can be provided efficiently to a compact area, and (3) predominately focuses infill development around existing settlements. The benefits of this approach are significant, but require that the Township commit to the Plan's updating on or before the year 2000.

Within these guidelines, the following describes each of the recommended land uses depicted on the Future Land Use Map.

*Pipeline land uses are ones that have been reviewed but are not yet developed!

A. AGRICULTURE

Three specific goals related to future agricultural land use that were expressed by local officials include:

- Affirm agricultural land use as a valid and important component of the Township's future;*
- Protect productive farmlands as a means of prolonging agricultural viability without financially overburdening local farmers; and,*
- Discourage the loss of farmland in areas with prime agricultural soils.*

As discussed in Chapter III, a majority of East Hempfield Township is comprised of prime agricultural soils. However, much of the land area located to the south of PA Route 283 has immediate access to public utilities and/or is adjoined by large expanses of development. Given these factors, it is recommended that areas south of PA Route 283 not be considered as long-term (or perpetual) areas of intensive farming. Certainly, some landowners may continue to operate farms in these areas during the next decade, but to limit such properties solely to farming would invite "nuisances" within a growing suburb, and unjustifiably discriminate against them. Instead, such areas should be acknowledged for development now, or planned for Agricultural Holding, as described next.

Conversely, vast farmlands remain relatively free of suburban encroachment to the north of PA Route 283. Here, no public utilities are available nor foreseeable according to various authority policies. In all, some 3,850± acres are involved in agricultural activities which should be protected.

Ideally, these areas should be subject to effective agricultural zoning. Local officials may impose effective agricultural zoning in these areas, despite the apparent lack of support from landowners in this area at this time. The recently revised Pennsylvania Municipalities Planning Code (MPC) specifically requires that townships adopt plans and ordinances that protect prime agricultural soils!

Another amendment to the MPC specifically enables the use of transfer of development rights (TDR) and density bonus zoning to accomplish local planning objectives. TDR enables a developer to purchase a farmer's (or landowner's) development rights and apply them to another site. Density bonus zoning enables the Township to award an increase in development potential for certain prescribed amenities and/or development features. Used in combination, TDR and density bonus zoning could provide real economic incentives to both farmers and developers toward the longevity and profitability of farming within Lancaster County. For these reasons, local officials are strongly urged to consider the use of these new planning tools in the near future. With these incentives, local officials can offer some economic return for the "downzoning" of agricultural areas that may make effective agricultural zoning more palatable to local farmers.

In addition, the Lancaster County Agricultural Preserve Board and the Lancaster Farmland Trust are continually offering new and innovative incentives that should be targeted within East Hempfield Township. Together, these approaches provide real benefits that can overcome the lure of speculative land prices paid to farmers. Finally, if Lancaster County should ever conduct a Countywide reassessment, local officials may wish to support the use of preferential agricultural tax assessment programs enabled by State law. Such programs, commonly called "Clean and Green," have been successfully implemented in York County.

Once established, the Agricultural area should have specific regulations that are aimed at protecting agricultural pursuits and the environment.

In light of recent attempts to reduce local groundwater and regional surface water pollution, farmers should also be encouraged to use sound conservation practices. Soil conservation keeps productive topsoils in place, thereby reducing sediment load in surface water and minimizing the need for fertilizers. The Township should also work with the Lancaster County Conservation District in the development of suitable manure management practices and regulations to stem water pollution. While farming should dominate land uses within this classification, other limited uses can provide benefits to the farming community.

First, some rural housing can be permitted. However, results of the well testing throughout Lancaster County suggest that rural housing with on-lot sewers will probably not be allowed on a widespread basis. Nonetheless, should any rural lots gain DER approval, such lots should be sufficiently sized to accommodate one approved on-lot sewage disposal system, and one alternative system. Additionally, proposed residential development should be (1) located and designed to minimize loss of valuable farmland, (2) clustered with other adjoining residences, (3) designed to minimize property lines shared by active farmland, (4) planned to assure vehicular access to future residences should the area be rezoned, and (5) designed in compliance with applicable subdivision requirements.

Another related planning goal expressed in Chapter II seeks to "halt the strip development pattern" occurring within this Agricultural area. Here, local officials are concerned over the wasteful strip development pattern which :

- (1) complicates the pick-up of school children, and trash and recyclables, which in turn creates traffic congestion;*
- (2) maximizes the common boundaries between residences and active farming, thereby creating opportunities for compatibility conflicts; and,*
- (3) blocks the scenic views of active farms as viewed from the street.*

To resolve this issue, it is recommended that local subdivision and zoning policies be specifically designed within the Agricultural areas to enable the use of short-run cul-de-sacs, limited flag lots, or rural clusters with shared driveways.

Finally, all prospective occupants of new housing units within the Agricultural areas should be specifically put on notice that they will be required to tolerate potential inconvenience and nuisance associated with common agricultural practices. Such notice should be conspicuously listed as an agricultural nuisance disclaimer within Agricultural zone language, and as a note upon any subsequent subdivision plans.

Second, farm-related businesses can provide important income-earning opportunities and convenient goods and services to local farmers. They can also present employment opportunities to farm family members on farms whose further subdivision is impractical. These limited businesses should be permitted, but subject to strict zoning regulations that assure their compatibility within a rural context. It is vital that the farm-related businesses remain accessory to existing farms so that their attendant impacts will not jeopardize the area's rural character. On the other hand, farming can be enhanced through the creation of small business nodes that cater to their specific needs and are conveniently accessible. The author and the Lancaster County Planning Commission have recently prepared model zoning provisions for various farm-related businesses, which should be helpful in establishing a strategy for these uses.

Third, not all farming is alike. In recent years, intensive livestock and poultry operations have sprung up within the Township and Lancaster County. Often, these operations involve several massive aluminum buildings on relatively small farms. The lot coverages of these operations generally fail to meet zoning requirements imposed within agricultural areas and have storm water management implications. Furthermore, the acute odor impacts associated with these operations can be greater than those associated with typical tilling operations. Finally, the management of farm animal waste is of critical concern in these high animal density farms. For these reasons, intensive livestock and poultry operations should be reviewed by conditional use.

Finally, the long-term viability of agriculture within the Township deserves discussion. The Township should be able to maintain a strong component of agricultural land for many decades. Surely, some loss of farmlands will occur, but it need not completely eliminate farming from the Township. By continuing the staged-growth concept begun in this Plan, local farming can be maintained. Furthermore, recent amendments to the Pennsylvania Municipalities Planning Code require municipalities to plan and zone for the protection of prime farmlands. This enabling legislation would seem to authorize the application of the legal "fair share" principle to agricultural uses, in addition to its more common connection with developed ones. Consequently, local officials can remain steadfast in their community goals to preserve the agrarian landscape and lifestyle.

B. AGRICULTURAL HOLDING

Based upon the Township's stated goal to "accommodate" rather than "encourage" land development, this Plan quantifiably projects growth and then

reserves areas to meet that growth. In turn, the Plan must accordingly identify areas that are not now needed to accommodate projected growth; this Agricultural Holding category represents such areas. Instead, these areas should be viewed as staged-growth opportunities for times beyond the year 2000. The extent of these areas are largely premised upon substantial masses of active farming and planned sewer service areas, as depicted as part of the Official Sewage Plan. While these areas will eventually be developed, the urgency for their development is less than in other areas. These areas should allow continued farming, but should prohibit the placement of large and intensive operations (e.g., hog farms, poultry houses, mushroom operations, etc.). Developments within these areas should be discouraged at this time, however, not prohibited. Developments which would be permitted should be strictly single-family detached residential in character. In areas where public utilities are available, the minimum lot size should not be decreased and the prevailing zoning requirements should require an inordinately wide lot, including one very large side yard setback, so that future infill potential would be provided when the area is slated for eventual development.

Each of the areas reflected will be described individually, as follows:

- The first area is located just east of East Petersburg Borough, straddling Buch Avenue. Here, several farms are located between the Borough and Manheim Township to the east. Around this location are proposed high density housing units with the use of public utilities. However, given political difficulties in extending public utilities to this vicinity, it is not likely that intensive use of this area is foreseeable within the near future. Once landowners are able to obtain expansions of public utilities to service this area, then it should be reclassified for suburban residential development. In the meantime, such areas should be subject to large-lot zoning with the use of on-lot utilities, on wide lots with one very large side yard setback.
- The second area is located just west of the village of Salunga on the south side of Route 283. Herein lies an area that presents little value for use at this time due to limitation on sewer capacity. However, in the coming decades, this area may evolve into an important development area. It is noted that a large area of development is proposed just west of this location within adjoining Rapho Township. The succeeding comprehensive plan effort should analyze this location for potential economic development. It should also ascertain the capacity of the Salunga and Landisville Pump Stations, which currently serve this area, and the Stanley Avenue Interceptor, to determine if improvements have been made to these facilities which would thereby support development.
- The third Agricultural Holding area is located along the east side of Stony Battery Road, south of Landisville. In the past, the western half of this area had been thought of as an industrial location. Both East and West Hempfield Townships planned for sizeable industrial development here, presumably premised upon the location of the railroad line. It is recommended that this area be abandoned for future industrial use, unless and until significant traffic improvements can be made to the Stony Battery corridor, which would link it with Routes 283 and 30. The down-zoning of this area is consistent with

similar policies recently proposed in adjoining West Hempfield Township, and would complement their efforts. It is also consistent with the adjacent expansion of School District property. It is important, however, that the existing industrial uses located within this vicinity be permitted to grow naturally. Down-zoning should not affect their viability, but instead should dissuade or prohibit the establishment of new industrial uses within this vicinity. The eastern half of this agricultural holding area contains several active farms that are set amid sizeable neighborhoods. As the current farmers have expressed no interest in development in this area, and because of the abundant development potential planned elsewhere within the Township, local officials desired to place these farms within this land use category. Accordingly, the current agricultural pursuits could be continued while other less viable farms are converted. It is also important to note that the recent acquisition of School District property in this vicinity could provide the basis for the future development of a "high density" residential development nearby. Therefore, premature detached dwellings in this area could impede such a future development.

- The fourth Agricultural Holding area is located on the south side of Route 283, straddling State Road, Ye Old Mill, and Sylvan Roads. This area includes properties both north and south of Harrisburg Pike. This significant area represents an ideal development reserve for East Hempfield Township. The access provided by the State Road interchange with Route 283 truly represents a valuable opportunity for a wide range of future land uses. However, given the locally-expressed goals to stage growth and development according to projected needs, and the abundance of future growth areas already depicted upon this Future Land Use Map, this large area is not necessary to serve development within the planned time frame. Clearly, this area will be developed within the future; however, to designate this area for development would over-allocate future land use necessary to accommodate projected growth. Furthermore, by awaiting subsequent planning studies in the future, it will be possible to better forecast needed land uses within this vicinity. To develop this area at this time with a low intensity use could create a severe impediment to the future development of the site with its highest and best use. Development at this time would also represent a lost opportunity for the Township to take full advantage of the economic development potential provided by the access of Route 283. To use an analogy, this area represents a grape on the vine that has not yet ripened. The triggering mechanism for activation of this area is not linked to the extension of public utilities, nor the provision of needed transportation improvements. Instead, it is the development of existing planned future growth areas with their respective land uses, and the need to plan for additional growth.*
- Similarly, the fifth Agricultural Holding area is located on the south side of Route 30, just southwest of Rohrerstown. Here, several large farms are to be held as future development reserves, situated between Rohrerstown Road and Running Pump Road. Again, this area will obviously be developed within the future; however, this area is not needed for development at this time. Moreover, with needed transportation improvements within this vicinity, it will be possible to designate this area for a greater intensity of land use than that*

which would be possible under today's conditions. To designate this area for immediate future development would be to ignore the severe transportation access problems associated with the Rohrerstown and Centerville Roads corridors. With the extension of Good Drive connecting U. S. Route 30, and providing a bypass around Rohrerstown, ultimately potentially connecting with Old Tree Drive, any number of commercial, industrial, or high density residential land uses might be supported in this area. In the meantime, this area should probably be designated for limited residential development; however, with each detached residential unit added to this location, the likely conversion of the area for a higher and better use becomes more tenuous. It would be far better to keep this area relatively undeveloped so that its full development potential could be realized in the future.

- The sixth Agricultural Holding area is located straddling Farmingdale Road between U. S. Route 30, north of the Conrail right-of-way. This location can be generally described as two separate areas.*

The first area is located just south of U. S. Route 30 and is comprised of seven parcels, including two large farms. While this area directly abuts Route 30, it must rely on the congested interchanges of Harrisburg Pike and Rohrerstown Road for land access. Intensive land use in this area now would only worsen this congestion and should not be permitted. However, with the extension of Good Drive through this area, transportation access to these sites would be improved. Furthermore, Good Drive could be used as a land use boundary between future residences to the west (relying upon Rohrerstown Road for access) and business to the east (relying upon Harrisburg Pike for access). These areas should not develop until adequate traffic access can be provided.

The second area is located south of the first and can be described as four different quadrants, separated by the intersection of Farmingdale Road and an unnamed tributary to the Conestoga Creek, which runs in an east-west direction. In addition, the Lancaster Area Sewer Authority line parallels the unnamed tributary. The northeast quadrant of this site is presently used as a landfill for sand and slag by-products from Lancaster Malleable Castings Company. Lancaster Malleable estimates that this site is presently about 60% full and should be completed within about three years. Because the materials which are deposited here are considered fill for many development sites, Lancaster Malleable contends that this area would be available for development after its completion. However, they have no immediate plans to develop the site. The southeast quadrant of this site was used in the past by the Lancaster Area Refuse Authority as a solid waste landfill. Consequently, its development is unlikely under State law, however, it could be developed for passive or active recreational facilities. The southwest quadrant of the site, located west of Farmingdale Road, is also an area that has been used for the deposit of natural fill, and therefore could be used for future development. Finally, the northwest quadrant of the site was also used for the deposit of unknown materials.

Prior to any development of this site, it will be necessary to determine what types of materials underlie the surface. Should such materials be considered normal fill, the area can be developed normally; however, if it is determined that the materials are hazardous in nature, then this site should not be developed for housing. Given this site's location surrounded by proposed residential development, it is suggested that it be slated for some form of residential development in the future. Such development should be conditioned upon on-site investigations of this area to determine the land area suitability for those purposes. Given the previous description of the four different quadrants, it is probable that the entire area will not be available for development. Instead, the Township could foster an innovative cluster or livable communities design, with concentrations of development in the northeast and southwest quadrants, and recreation or open space uses in the other two quadrants. The approval of such a concept should be conditioned upon any site preparation work necessary to make such open space and recreation areas usable by the public. For example, it is likely that some grading and filling would be necessary on the LARA landfill site, so as to make it usable for active recreation facilities.

- The seventh Agricultural Holding area is situated between Marietta Pike and U. S. Route 30, just northeast of the Centerville Road interchange. This location has been the subject of numerous development plans that have been rejected due to specific site deficiencies. Local officials feel compelled to retain a relatively low development potential in these areas until such time as these deficiencies can be corrected.*
- The final Agricultural Holding area is sandwiched between Binkley and Ober's Quarry and the northern border of East Petersburg Borough. Here, local officials decided that this designation would adequately buffer the Borough's residents from adjoining quarrying operations.*

Immediate use of agricultural holding areas should be limited to low density, suburban residential development. Again, however, it should be emphasized that any development occurring within these areas may, in fact, provide an impediment to the development of the property for its future highest and best use.

C. RESIDENTIAL

Residential land uses have been divided into three separate categories: rural, suburban, and high density. Rural residences are anticipated within the Agriculture and Agricultural Holding areas described earlier. Before specific recommendations are provided for the suburban and high density categories, some general recommendations regarding residential land use are offered.

First, the ongoing groundwater testing within the Township and Lancaster County has revealed widespread groundwater contamination, as well as scattered malfunctioning on-lot disposal systems. In turn, the PA DER has been requiring an increased reliance on the use of public utilities for planned growth areas.

Second, it is the responsibility of every municipality to provide for a variety of housing types. Furthermore, it is important that the proper amount and location of these various housing types remain compatible with existing development and/or adjoining planned uses. The three different residential densities have been allocated to provide a balanced opportunity for housing of all types and costs. They have also been located around existing neighborhoods with similar prevailing densities.

Third, infill residential growth areas were designated on a priority basis around the existing developments. These "infill" areas should be developed before additional farmlands are rezoned for growth. Within East Hempfield Township, local residents have seemingly developed their own meaning of the phrase "infill." Because of the Township's explosive suburbanization during recent decades, many residents have become alarmed over the constant disappearance of open spaces (primarily farmlands) adjoining their neighborhoods. In turn, visually pleasing pastoral settings and opportunities for open play spaces have gradually diminished. Many residents valued these "open space" characteristics when they decided to move into the Township.

More recently, County planning policies have further emphasized the need to locate even more future growth amid existing developments. This strategy is commonly called infilling and helps to make growth more cost effective and less consumptive of productive fertile soils. While local residents are generally supportive of efficient growth that helps to preserve farmlands, they, nonetheless, feel cheated when such growth threatens to further reduce nearby views and use of open spaces. Hence, infilling has locally come to be viewed as a bad concept that will only worsen residents' quality of life.

However, local residents fail to consider (and local officials are compelled to consider) the legal principle of "equal protection." This legal mandate requires that local planning policies treat properties that possess similar characteristics (locations, access, public utilities and services, landform, and adjoining uses) similarly. Hence, the farmer who continues to operate his farm today amid suburban developments must be given the same opportunity to develop his/her farm as his former neighbor, who just happened to be more eager to develop. Comprehensive land use planning needs to equitably provide for potential land uses based upon locational and service factors. The courts have repeatedly thwarted attempts of local residents who would seek to deprive an adjoining landowner the same development potentials that they enjoyed, simply to preserve their view or use of another's open space.

Notwithstanding, the above infill may, in fact, be able to perpetually protect some usable open spaces amid existing developments. By encouraging, or even requiring, clustered development within infill areas, with prescribed levels of common open space, existing and future residents may gain permanent usable open areas. Certainly, the Township's existing suburban (large-lot) zoning policies will need adjustment, and residents will need to accept slightly denser developments for neighbors. However, this cluster infill will enable equal

protection to current vacant landowners, while providing some measure of permanent relief from a completely developed landscape.

The Plan separates residential growth areas from planned agriculture with PA Route 283. This boundary should help to improve compatibility along these differing land uses. Future residential areas have been sized and block-shaped to encourage developments that run perpendicular to adjoining major roads, rather than in a strip-development pattern paralleling major roads.

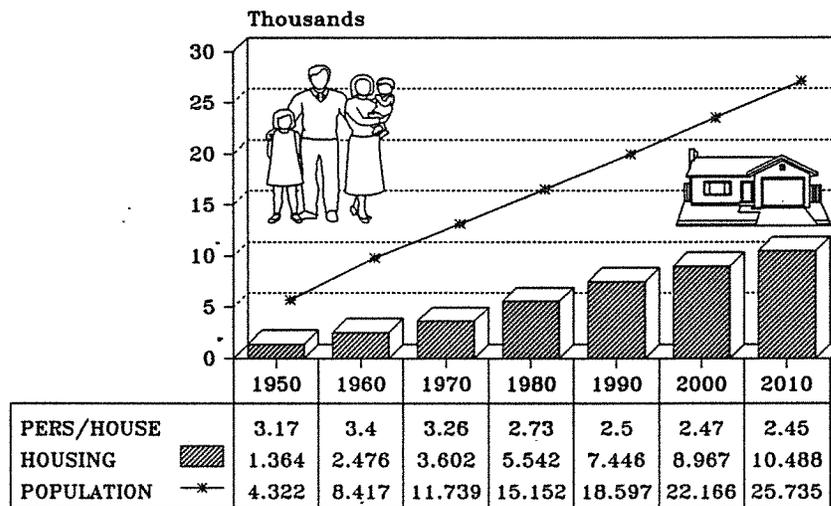
Because residential growth areas will have access to public utilities, the Township has the opportunity to promote cluster housing and "livable community" designs. It is recommended that the suburban and high density residential zones be adjusted to allow cluster developments by conditional use. The conditional use process will enable the Township to review a site plan of the project and negotiate with developers for the protection of certain natural features and/or provisions of needed development features. The conditional use process was selected over the special exception process because the Township Planning Commission and Board of Supervisors more regularly review development proposals via the subdivision process, than does the Zoning Hearing Board.

Finally, the clustering provisions should also provide a slight density bonus to offset the increased design costs and sales risks associated with development of clustered housing. A similar density bonus could be awarded for certain prescribed development features, like a linear park, swimming pool, historic site rehabilitation, etc.

Beyond clustering, the high density areas should be fitted with an overlay, or optional set of design standards that promote "livable communities." Such standards should also employ a conditional use review procedure with prescribed density bonuses. Livable communities have experienced a resurgence at the national and local levels, as the inefficiencies of the suburban sprawl become more evident.

To determine needed acreages for future residential development, the population and housing projections contained in Chapter IV (Demographic Studies) are useful:

POPULATION VS HOUSING 1950-2010



EHEMP28

From this graph, it is determined that some 1,521 new dwelling units will be needed to accommodate the Township's projected growth from 1990 through the year 2000.

Based upon the goals expressed in this Plan to concentrate development in public utility service areas, and the need to accommodate more higher-density housing, the following planned residential units and acreages are derived:

<i>Residential Category</i>	<i>Density (DU/AC)</i>	<i>New DU's (%)</i>	<i>Needed Vacant Land²</i>
<i>Rural</i>	<i>1 or Less</i>	<i>31 (2%)</i>	<i>31+ Acres³</i>
<i>Suburban</i>	<i>3¹</i>	<i>882 (58%)</i>	<i>338 Acres²</i>
<i>High Density</i>	<i>4.5¹</i>	<i>608 (40%)</i>	<i>155 Acres²</i>
<i>Totals</i>		<i>1,521 (100%)</i>	<i>524 Acres</i>

¹These densities assume the use of public utilities and are 75% of gross density to account for unbuildable areas of development sites (e.g., roads, floodplains, slopes, parklands, utility easements, etc.).

²The indicated acreages are actually 115% of the land area consumed by development. This factor accounts for a legal doctrine entitled the "right-to-travel." This doctrine is applied to residential zoning policies and is based upon our national emphasis of personal freedoms. The "right-to-travel" doctrine requires that local officials provide for a wide range of housing types at various locations. This doctrine distinguishes U. S. planning and zoning policies from European and Asian practices where the "State" dictates where, how much, and what types of housing will be provided. It also has the effect of ensuring adequate development potential, even though some landowners who have land zoned for development, are not willing to sell it for those purposes.

³Rural development is expected in the rural residential, agriculture, and open space areas of the Township. Additionally, the amount of land area needed to accommodate rural land uses is expected to be more than calculated based upon groundwater contamination and PA DER's ability to increase required minimum lot area to reduce local groundwater degradation.

Conceivably, East Hempfield Township need only designate 524 acres for future residential growth through the year 2000. However, another factor requires examination.

To account for "pipeline development" (that which has been already approved but not yet built), the Township staff was consulted. They calculated that 932 dwelling units are in the pipeline, with 741 detached units and 191 duplex, attached, or multiple-family units. The locations of these "pipeline" units are reflected on the Future Land Use Map.

When existing and pipeline units are plotted, numerous small parcels are bordered and/or are surrounded by proposed residential development. These properties have access to the same utilities, are comprised of the same land form, are served by the same public facilities, and front along the same roads. Equal protection land use policies dictate that these areas be treated similarly as their existing and pipeline development counterparts. This results in an over-allocation of suburban residential development, which is unavoidable, but enables the Township to eliminate development potential from other areas (e.g., the agricultural holding areas).

Given these equal protection policies, the following tabulates (1) needed, (2) pipeline, and (3) proposed dwelling units:

<i>Residential Category</i>	<i>Needed</i>	<i>Pipeline</i>	<i>Planned Acreage (DU's)¹</i>	<i>Potential Total</i>
<i>Rural</i>	31	N/A	N/A+	N/A+
<i>Suburban</i>	882	741	305 (773)	1,514
<i>High Density</i>	608	191	141 (539)	730
<i>Totals</i>	1,521	932	446 (1,317)	2,249

¹The calculation of planned dwelling units was accomplished by:

1. Planimetric measurement of vacant acreage planned for growth;
2. Reduction of measured acreages by 15% to reflect right-to-travel doctrine buffer;
3. Reduction of measured acreages by 25% to reflect nonbuildable areas of development sites; and,
4. Multiplication of acreage times recommended densities.

As can be seen, the potential total number of new units permitted within designated areas represents about 148% of those needed. Furthermore, each residential category exceeds its respective number of dwellings projected by the year 2000. While this excess development potential was not intended nor desired as part of this planning process, it provides a measure of assurance that the Township has met its fair share of residential growth. Therefore, local officials can confidently resist future rezoning claims based upon an argument that the Township has not provided for its fair share of residential growth.

SUBURBAN RESIDENTIAL

Much of the Township's existing development pattern is comprised of single-family, detached neighborhoods with suburban-style street configurations. These areas have evolved following public utility extensions located south of Route 283. Generally speaking, suburban residential development within East Hempfield Township is of a very high quality, as reflected in the high owner-occupied values and median monthly rental values, reported in Chapter IV of this Plan. Assuming suburban residential development will comprise 58% of the Township's projected growth, it is necessary for the Township to plan for the construction of 745 new dwelling units between 1990 and the year 2000. A staff inventory of "pipeline development" reveals that a total of 741 detached units are already foreseeable. When plotted, these pipeline units generally continue the development envelope established by the existing suburban residential development. Given the "equal protection" considerations explained earlier, 490+ acres have been set aside for future suburban residential development, beyond both existing and pipeline growth areas. In all, the depicted suburban residential areas could accommodate 1,519 new dwellings, or 172%, needed to accommodate projected growth.

Suburban residential areas consist of a fairly wide range of suburban detached densities. Therefore, the Township may wish to continue its zoning scheme, which provides for several different residential zones reflecting local prevailing lot sizes. Overall, the suburban residential category should be slated for the use of both public sewer and public water utilities, and should enable the development of detached units at up to four units per acre.

Equally important, this category should encourage, and may even require, the use of clustering provisions. Such clustering provisions provide a mechanism for retrofitting these neighborhoods with needed neighborhood parkland facilities and highly valued, short-run linear park opportunities. To enable these recreation facilities to be retrofit, it is important that zoning policies within this category provide for a slight density bonus to help offset the increased costs of providing such recreation facilities. Furthermore, the Township should consider the use of smaller, zero-lot-line detached housing styles, and duplex, quadruplex, and townhouse unit styles so as to provide greater flexibility in the design of neighborhoods with their recreation facilities.

Finally, the Township should consider requiring that all new developments within the suburban residential category either (1) provide for sidewalks, or (2) have direct access to a linear park. It is also important to note that these suburban neighborhoods are slated for the construction of additional neighborhood parks, as outlined in the Township's Comprehensive Recreation and Open Space Plan. Township officials should seek to connect proposed residential developments, as well as existing developments, with these new neighborhood parks via the use of sidewalks and/or short-run linear parks.

HIGH DENSITY RESIDENTIAL

This land use category is meant to accommodate high density housing with permitted densities ranging up to six units per acre. Both public sewer and public water should be required. A wide range of housing unit types should be accommodated, ranging from single-family detached, attached, duplex, garden apartments, townhouses, and accessory and conversion apartments. To ensure the Township provides for its fair share of low and moderate income housing, it is recommended that land area be set aside to accommodate 40% of its projected growth as high density housing units. In so doing, the Township can overcome any allegations of exclusionary zoning practices, which could be argued by researching its rather high housing unit cost and monthly rent data reported in the 1990 Census. Assuming 40% of the projected growth within East Hempfield Township will be comprised of high density housing, it would mean that the Township would need to accommodate 608 new high density housing units. The staff calculates that 191 pipeline dwelling units already exist within this category. Therefore, an additional 417 units on 107 acres need to be planned as part of this Future Land Use Map.

The Future Land Use Map, in fact, designates 141 such acres in one large location straddling McGovernville Road, just north of the proposed Lancaster General Hospital campus. This area represents a logical extension of the Colonial Crest, Town and Country, and Meadow Green Estates apartment complexes. It also takes full advantage of access between Routes 283 and U. S. Route 30.

This large site provides a valuable opportunity for the Township to promote the use of cluster development and/or the more recently advocated livable communities design. In either case, the Township should require approval of a conditional use for such development types with slight density bonuses awarded for the inclusion of needed recreation and civic uses. Projects that employ a "livable communities" design should seek to recreate traditional village settings that:

- 1. are distinct in their incorporation of important natural and cultural features;*
- 2. provide for a diversity of housing, types, sizes, and costs with particular emphasis on scattered-site affordable housing opportunities;*
- 3. provide for convenient vehicular access to the neighborhood's edge, but increased reliance upon pedestrian movements within its bounds;*
- 4. integrate local businesses and trades to enhance resident convenience and offer limited employment opportunities;*
- 5. make efficient use of local infrastructure and services;*
- 6. reflect the historic and traditional building styles of Lancaster County;*
- 7. reserve and feature civic uses and open spaces as community focal points;*
- 8. provide safe, efficient, and compatible linkages with existing nearby land uses, streets, sidewalks, etc.;*
- 9. invite regular and frequent social interaction among its inhabitants; and,*
- 10. blend all of these above-described features in a way that promotes community identification and a "sense-of-belonging" for the residents.*

To accomplish the above-described objectives, innovative approaches to zoning and subdivision and land development will be required. Furthermore, some of the objectives deal with aesthetic issues that are clearly beyond the zoning police powers. These issues are vital if traditional village settings are to be replicated. Consequently, the use of livable communities design standards should be offered as an unseverable complete package that is voluntarily self-imposed by the landowner/developer. To encourage its use, the zone should feature substantial density bonus incentives. Additionally, all high density areas should include sidewalks and/or linear park pedestrian paths.

Beyond these concentrated locations for high density residential development, the Township is also providing for scattered site, higher density, low-cost housing within the existing villages of Rohrerstown and Landisville, as well as along heavily impacted highways. Such scattered-site housing will take the form of converted historic structures within the next land use category.

VILLAGE RESIDENTIAL

This category reflects a historic residential development pattern occurring within the villages of Rohrerstown, Landisville, and Salunga. In these locations, historic homes have been built which create a village-like atmosphere. Local officials expressed a desire to preserve this character. Zoning requirements for this area should be specifically designed to promote the continued use or adaptation of existing structures in favor of their demolition and construction of new buildings. Permitted uses should include detached residences, plus limited conversions for apartments and other residential-related uses. On-site screening, access, loading, and signage requirements should be specifically designed to promote the village atmosphere, and protect adjoining detached homes. The site-by-site regulation of these properties is critical to the maintenance of the village atmosphere existing within East Hempfield Township.

On the other hand, specific incentives might also be incorporated that would enable neighboring properties to share driveways. The reduction of driveway cuts along Marietta and Harrisburg Pikes could help to reduce conflicting traffic movements along these heavily-traveled corridors.

Depending upon the commitment to preserve the villages "Main Street" character, the Township could establish one or several historical districts in this vicinity to preserve significant historical resources. This would require the creation of a Historical Architecture Review Board (HARB) and would be subject to the rules described in Commonwealth of Pennsylvania Act 167 (1961), as amended. This program could help to significantly protect the "small-town" charm exhibited in the older structures within the three villages.

D. COMMERCIAL

Within East Hempfield Township, commercial development can be generally described by the following three different categories:

COMMUNITY COMMERCIAL

These areas represent the Township's major community activity centers. In all, three separate areas have been identified. The first includes the large commercial centers of the Lincoln Plaza Shopping Center and the Regency Square Shopping Center, located on the east side of Rohrerstown Road, north of Columbia Avenue. The second community commercial area is situated straddling Centerville Road, between Marietta Pike and Columbia Avenue, and is centered around the Centerville Road interchange for U. S. Route 30. The final community commercial area is situated straddling Rohrerstown Road and is premised upon access provided by U. S. Route 30, Rohrerstown Road and the Old Harrisburg Pike. Zoning requirements imposed in this category should promote the use of large commercial centers and/or an integration of smaller, freestanding uses. While a wide range of commercial activities and land uses can be accommodated, their overall design and orientation should be regulated so as to promote a tidy and attractive appearance. Shared parking and off-street loading space incentives can also enhance function while reducing asphalt coverage.

Three un- or underdeveloped areas have been designated within this category: the proposed Hempfield Square, the former Good's Dairy site, and the Brubaker Appliance site. This strategy is consistent with local officials' goals to reduce the vacancy rates associated with existing built-up areas, and to rely upon smaller commercial, convenience sites scattered throughout the Township.

Last, because of the Lincoln Plaza and Regency Square sites adjoining large existing neighborhoods and planned high density areas, the Township should attempt to provide safe and convenient pedestrian linkages. Shaded on-site and perimeter sidewalks should be integrated between the sites. Traffic signals with pedestrian cycles should be placed at key traffic intersections and pedestrian crossings. These measures will help to reduce vehicle congestion in this busily-traveled vicinity, and enable community commercial uses to serve both motorists and pedestrians. Shaded bus stops should also be provided.

LOCAL COMMERCIAL

This category serves a dual purpose. First, within the Villages of Rohrerstown and Landisville, there have evolved groupings of commercial businesses. Within Rohrerstown, these businesses have followed the axes of Rohrerstown Road and Marietta Pike. In Landisville, a smaller grouping has centered around the intersection of Church Street and Old Harrisburg Pike. Local officials seek to sustain these businesses largely as they exist. Zoning requirements should acknowledge the tightly-knit character of these areas and encourage uses that would be compatible therewith. Additionally, overall size should be restricted to encourage an adaptation of existing structures, rather than demolition and rebuilding.

Second, several scattered nodes of neighborhood commercial development are provided at existing concentrations of such uses. They are small and are generally situated along interior collector roads of suburban detached residential

neighborhoods. Zoning requirements for these land uses should reflect their local orientation by (1) limiting overall retail size and lot coverage, (2) prohibiting outdoor storage, and (3) by imposing severe buffering and landscaping requirements to protect adjoining residential properties. The range of uses permitted within this category should again reflect a local orientation and include small retail shops, personal services and offices. The relatively small size of planned nodes of neighborhood commercial should not alarm local officials, as they are intended to be small and do not constitute spot zoning.

HIGHWAY COMMERCIAL

These areas reflect a historic evolution of strip commercial development occurring primarily along the Columbia Avenue, and the Manheim Pike, and around the Root's Country Market and Auction. Within these areas, a wide variety of commercial land uses and development styles have been employed. The Township should acknowledge these existing uses and, wherever possible, encourage the shared use of parking, access drives, loading, and signage so as to reduce the visual clutter along these highways.

Furthermore, it is suggested that no additional areas be planned for this category so as to move away from this undesirable development pattern. The Township must discourage this development form if it is to improve local traffic flow; however, the conversion of these existing areas will take time. Local officials should develop "carrot-and-stick" zoning policies that effect needed changes, and then wait patiently for them to occur.

It is further noted that some turnover within these areas has been occurring within recent years; the Township should take every opportunity to improve the appearance of these properties, through the retrofitting of landscaping strips.

In addition to the above-described strip pattern areas, the Plan also reflects the State Road/Route 283 interchange, and a large area just west of Route 72 at Becker Road. In both of these cases, local officials felt compelled to reflect these areas due to existing land uses or recent rezoning actions; however, local officials are not interested in commercial growth in these locales.

E. HOSPITAL CAMPUS

This category reflects the proposed plans by the Lancaster General Hospital to locate a major outpatient and hospital facility in the northeast quadrant of the intersection of U. S. Route 30 and Rohrerstown Road. The provision of this facility is linked with numerous public improvements, including an extension of Good Drive and a connection with Spring Valley Road. Zoning requirements in this area should be strict as to types of permitted uses and should allow the construction of a high-rise hospital building as its focal point. Other related offices and services should also be accommodated within this zone, but should be selected so that they do not present severe compatibility problems with adjoining residentially zoned areas. Emergency room vehicular access points should be

carefully oriented and designed so as to offer quick access while not unduly impacting nearby residential neighborhoods.

It is recommended that the development review process for this area involve a two-stage review. The first phase would involve a concept plan which shows the general locations of various types of land uses. The second development phase would nail down specific locations for proposed structures, parking lots, roads, etc. It is important for hospitals to have some assurance that their need for expansion can be secured up front without having to go to the expense of preparing detailed site development plans for facilities which may need to be revised in the future.

Finally, the construction of a "high rise" hospital building presents acute fire safety concerns. First, such building should be fitted with heat-activated sprinklers. Second, if the proposed building extends above the 75-foot high ladder truck capabilities of the Landisville Fire Company, then another ladder truck may need to be secured. Because of the volunteer nature of local fire companies, the acquisition of this expensive apparatus will require Township intervention. Hopefully, Lancaster General Hospital can be convinced to recognize its sole demand for this truck and financially contribute to its acquisition.

F. INDUSTRIAL

Because of East Hempfield Township's proximity to the Lancaster metropolitan area, and its major thoroughfares (Routes 72, 283, 30, 462, and 230), the Township has historically attracted, and continues to attract, industrial growth. As described in Chapter V (Existing Land Use), the evolution of industrial land use occurs in several locations throughout the Township. It also includes a broad diversity of industrial activities and levels of site design.

Local officials cited several industry-related goals in Chapter II of this Plan. Essentially, they recognize the need to accommodate industrial growth as a means of supporting the Township's and School District's tax bases. However, they also hope to gain greater control over the selectivity of particular industrial uses and their appropriate locations. Additionally, local officials emphasize the need to enhance the "design" and visual aspects of industrial development, particularly when such industry adjoins residential neighborhoods. Next, the Township desires to direct any new industries to the vacant "infill" sites existing within the Hempfield-Hempland Industrial Park, located south of U. S. Route 30 between Running Pump Road and the Township's western border. Finally, local officials wish to encourage development of a high quality office campus similar to those of other nearby municipalities.

Several of the preceding goals, when applied to the Township's existing industrial land use pattern, create irreconcilable conflicts, which will compel compromise. Before an optimal compromise can be determined, additional inventorying and analysis is necessary.

In December, 1991, an industrial property condition survey was conducted to evaluate the Township's industrial park sites according to aesthetic and design elements. A five-step ranking system was devised and used, as follows:

<i>Score</i>	<i>Site Characteristics</i>
<i>5</i>	<i>Attractive, well-maintained, buffered and screened design, no outdoor storage</i>
<i>4</i>	<i>Utilitarian architecture, tidy, some landscaping, screened storage</i>
<i>3</i>	<i>Functional architecture, tidy, minimal landscaping, no screening</i>
<i>2</i>	<i>Functional architecture, untidy site, no landscaping, no external hazards</i>
<i>1</i>	<i>Poor building and site maintenance, and/or external hazards</i>

From this system, individual sites, as well as industrial parks, were evaluated. Generally, the varying ages of industrial land uses were evident in their respective site conditions. Older sites tended to be functionally designed and built, but not particularly attractive; these sites averaged scores of 3. Over half of all sites scored 3. It is important to note that, although these areas lacked the architectural and aesthetic elements of a high quality industrial campus, they were largely very well-maintained and tidy. These traits are desirable and increasingly rare in aging industrial parks whose buildings and appurtenances become outdated.

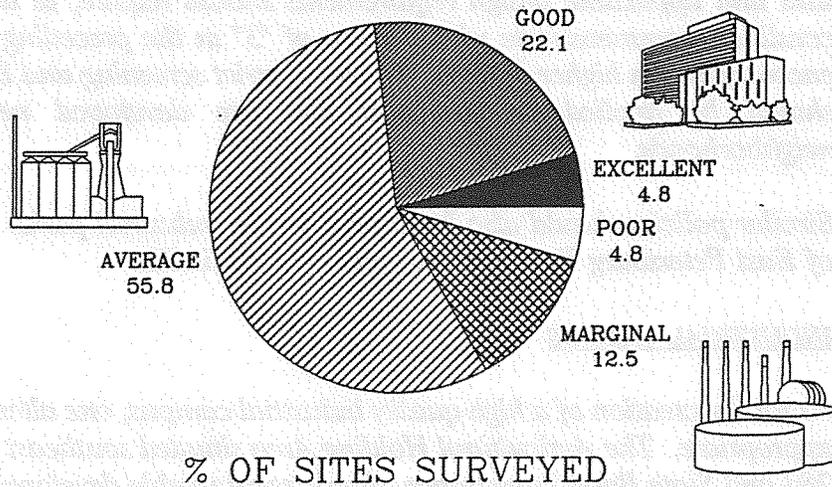
New industrial sites were fewer in number but occurred in localized pockets. A few of these (5) included exemplary levels of building and landscape design, befitting an exclusive industrial campus. More common, however, were sites that lacked a high measure of building design, or possessed a site orientation that could benefit from improved buffering or screening (particularly for off-street loading or outdoor storage). These sites typically scored 4. Twenty-two percent of all sites scored 4.

Only twelve sites scored 2. For the most part, these sites could be upgraded to a score of 3 by gathering and neatly stacking scattered materials. With additional landscaping, buffering and/or screening, these sites could improve to a score of 4. Local officials may wish to target these uses with a "voluntary" property clean-up campaign to achieve desired results.

The lowest category of site conditions had five sites identified. These sites were largely strewn with industrial equipment that was in various states of disrepair, or widely strewn industrial materials that were not neatly stacked. In this category, these materials and equipment dominated the site's unattractive appearance. To improve these sites would require considerable effort by the landowners.

The following pie chart reveals the frequency distribution of industrial site scores recorded:

INDUSTRIAL SITE CONDITIONS EAST HEMPFIELD TOWNSHIP INDUSTRIAL PARKS



1991 FIELD SURVEY

Specific mapped information was also prepared by this study; however, such mapping was only given to local officials for their use in property maintenance efforts.

To create a "high quality campus" setting as suggested by local officials, it would be necessary to ensure existing and future uses would score at least a 4, and preferably a 5, as part of the preceding site survey. Specific zoning requirements would need to select uses most likely to produce such industries which would value attractive settings. Next, specific zoning design requirements would be imposed to ensure aesthetic open areas and activity orientations.

Unfortunately, the creation of such an area becomes impractical if another stated goal is to be met. Specifically, local officials desire to limit industrial growth to the Hempfield-Hempland Industrial Park's remaining vacant parcels. As discussed earlier, most of the existing uses within this area exhibit site conditions below that necessary to attract "high quality" economic development. While some of the better existing industries are concentrated on the south side of Old Tree Drive and straddling Industry Drive, the remaining adjoining vacant parcels lack premium vehicle access and visibility. The development of a high quality industrial campus is dependent upon several vital locational factors, such as high visibility, transportation access, compatible adjoining land uses, and to some degree, local market momentum. In this locale, the most accessible and visible sites have already been consumed by uses that generally do not convey the image of a high quality industrial campus, and may impede investment by prospective industries. To summarize this point, it will be difficult to achieve a "high quality"

industrial campus in this location. Conversely, all forms of industry need a home. The Township is fortunate to possess its existing industries and should not forsake their viability solely to aspire to a newer development form. For these reasons, it is recommended that the remaining areas of the Hempfield-Hempland Industrial Park enable the continuation of past and current development forms. Permitted uses and applicable design requirements should require, at a minimum, a site condition commensurate with a score of "3" in the preceding scale and should encourage even higher designs. However, strict screening and buffering measures should be applied to industries that are developed next to residential neighborhoods.

Similar policies should also be applied to the industrial parks situated southwest of East Petersburg Borough, and east of Landisville.

INDUSTRIAL CAMPUS

As for the creation of a high quality industrial campus, one alternative seems most appropriate. The Agricultural Holding Area situated southeast of the U. S. Route 283 and State Road interchange affords considerable development potential with high visibility, good vehicular access, public water (CLA), public sewer (LASA), and an undeveloped setting. This area could be targeted for a "Campus Industrial Zone" in the future once the remaining vacant industrial parcels have been developed elsewhere within the Township.

Regardless of the timing of development here, adjoining residents will demand site designs that provide a maximum degree of screening and buffering. Additionally, road improvements to accommodate additional traffic would also need to coincide with any intensive development that relies upon Harrisburg Pike and State Road. Next, local officials should develop strict zoning policies that ensure attractive and functional site designs that are free from other "objectionable" industrial pursuits. Last, the Township should encourage the development community to self-impose architectural and aesthetic covenants and deed restrictions so as to further protect the potential "image" of this area.

GENERAL INDUSTRIAL

This category reflects two distinct forms of industry. Shown first are existing, small-scale industrial locations that are freestanding or not part of an overall, larger complex. These areas are reflected as they exist and are not recommended for further expansion at this time. The challenge within these areas is, and will remain their blending with adjoining residential and non-industrial land use activities. Any future plans for expansions in these areas should be subject to site plan review with an attempt toward providing adequate buffering for adjoining land uses. Should any of these land uses seek to enlarge their areas to accommodate massive expansion, the Township should encourage their movement to a more suitable location within the industrial park areas. In turn, the Township should seek to reduce development intensity on the sites so that they may better contribute to their surroundings.

The second form of general industrial relates to areas within the Township's existing industrial parks that are characterized by uses and/or site conditions that exceed those associated with light industry. As described earlier, these legitimate forms of industry should be continued with possible attempts to upgrade their buffering, landscaping and site maintenance. As always, in areas abutting residential neighborhoods, proper site orientation, screening and buffer separation should be vigorously applied. This zone would allow small and light industry by right, but would impose conditional use review procedures for heavier, larger, and potentially objectionable industries.

LIGHT INDUSTRIAL

The industrial property condition survey revealed sizeable concentrations of industrial sites with better than average function, design, appearance, and maintenance. These valuable locations also contain varying amounts of undeveloped land that should be similarly used. In these areas, only small-scale and lighter forms of industry should be permitted by right. Design standards should reflect the potential for small start-up industries that may lack the capital to purchase expansive minimum lot sizes.

OFFICE INDUSTRIAL

Finally, in response of the locally expressed goal to create a distinct "office" zone, a vacant area has been shown situated along the east side of Story Battery Road and south of Salunga/Landisville, and another site is shown southwest of East Petersburg Borough west of Rohrerstown Road. Here, local officials desire to harbor "industrial and corporate offices" that are distinctly different from personal service and commercial offices. Zoning requirements should reflect larger building sizes, but exclude disruptive manufacturing and warehousing uses. It is envisioned that this zone will act to buffer nearby residences (in East Petersburg Borough and West Hempfield Township) from existing industries located to the east and south. It is also envisioned that the regulations developed for this zone may find future application elsewhere within the Township as industrial and residential areas grow closer to one another.

G. QUARRY

A large limestone quarry is located in the extreme northeast corner of the Township. The extent of this quarry is limited to that authorized by the Township. Quarrying is a needed industry that supports agricultural, as well as the construction industries. Because of their intensive operations, and potentially detrimental impacts, quarry expansions are usually highly controversial. Hence, it is recommended that the Township develop a new quarry zone. This new zone should permit agricultural uses, public uses and utilities, and parks and recreation by right; quarries and other extractive-related uses should be allowed only through the obtainment of a conditional use. Quarries should be strictly regulated with numerous conditional use criteria that consider their grave impact on nearby neighborhoods, roads, and the environment. Finally, all quarrying should be required to at all times demonstrate compliance with the Pennsylvania Noncoal

Surface Mining Conservation and Reclamation Act (as may be amended). As part of compliance with this State Act, quarry owners are required to propose a reclamation land use once quarrying operations cease. Local officials should carefully scrutinize such reclamation uses to determine their suitability with long-range comprehensive planning for that locale.

This Plan only recommends the existing quarry location. Should this use require expansion, or a new use be proposed, local officials can scrutinize potential locations via a rezoning hearing process. At the same time, it can review an accompanying conditional use application, thereby streamlining the development approval process.

H. PUBLIC

This category includes land uses which serve some public or civic function. Specifically, it includes Township lands and parks, school sites, fire and ambulance companies, churches, and cemeteries.

Most often, municipalities allow these uses as permitted uses in a variety of zones. However, some limitations on these uses can be helpful in protecting neighborhoods from nonresidential impacts. Local officials may wish to require the obtainment of a special exception for some of these uses so as to prevent negative impact on nearby homeowners.

Furthermore, school sites should be placed amid planned future neighborhoods so as to promote students walking to school and to avail convenient use of the school's recreation facilities. These considerations could be applied as special exception or conditional use criteria attached to school uses.

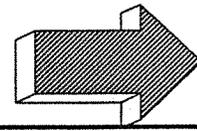
I. URBAN GROWTH BOUNDARIES

In order to support the Comprehensive Plan's objective of directing growth to the most appropriate locations, East Hempfield Township has endorsed the concept of urban growth boundaries. The establishment of Urban Growth Boundaries will help preserve the character and identity of the Township by controlling sprawled development patterns and the accompanying loss of farmland. The solid factual basis supporting these boundaries will make local decision-making at the urban edge simpler, more consistent and more predictable. The Township will be able to enhance its long-range planning of public facilities and services; to know where future development will occur; and, where future parks, road improvements, schools, etc. should be located. Service costs and property taxes can be kept down by limiting the extension of such services and by maximizing investment on existing public services and facilities.

East Hempfield Township has cooperatively developed an urban growth boundary with the County, which is identified on the Future Land Use Map on page 201. This UGB was developed using criteria consistent with both the County's Policy Plan and this Comprehensive Plan.

The urban growth boundary for East Hempfield Township will encompass the entire area south of PA Route 283, and the Armstrong, Kelly Mitsubishi, and Landis tract north of PA Route 283. The boundary signifies that urban growth, with a full range of facilities and services, will be encouraged within the boundary, and discouraged outside the boundary.

XI. IMPLEMENTATION



This Comprehensive Plan has extensively outlined a future direction and growth for the Township over the next ten years. This future direction is premised upon the comprehensive set of recommendations set forth in this Plan. In order to operationalize those recommendations, and the locally expressed goals and objectives, an implementation strategy must be put into action. This strategy can be achieved through the various municipal planning program components.

East Hempfield Township has, for some time, been actively involved in meeting the needs of its growing population and economy. In turn, substantial capital investments (land, buildings, machinery, vehicles and equipment) have been made. Additionally, local experts (staff) have been hired to manage specialized functions of the delivery of public service. For this document to suggest specific recommendations about these issues would be to ignore the considerable expertise and institutional knowledge of those staff that deal with these issues day-in and day-out. Instead, the following items present major recommendations regarding municipal planning functions and other recommendations that will assist the Township in cooperating with other public agencies and services.

First, the Township should revise its zoning policies to implement the recommendations of the Future Land Use Plan presented in Chapter X. Substantial re-thinking regarding the variety of land uses and their suitable design standards will require considerable effort. Additionally, the reorientation of the zoning map should also be accomplished. The urgency of this process should be immediate, as the vested rights provided by Section 508.4 of the MPC could enable developers to circumvent the recommendations contained within this Comprehensive Plan by simply submitting a preliminary plan for approval under the current Zoning Ordinance.

The second task to be accomplished relates to transportation. Clearly, East Hempfield Township has, in the past, made great strides in the reduction of traffic congestion and the elimination of traffic hazards. However, the work is not nearly-completed. Chapter IX of this Plan and the Township's recently Comprehensive Traffic Study, suggest numerous traffic improvements which will be necessary to correct existing deficiencies, as well as accommodate projected growth. The Township should continue to annually prepare a capital improvements program which prioritizes those projects for immediate funding, and earmarks additional funds for the planning and programming of future road improvements in the short-run. Additionally, the Township should seek funding from a wide variety of governmental agencies and private interests to implement these changes.

It may also be beneficial to the Township to prepare an official map for those new roadway corridors that will be necessary to improve the circulation.

The third priority relates to recreation. Chapter VII of this Plan and the draft Comprehensive Recreation and Open Space Plan recently prepared for the Township provide a detailed accounting of recommended recreation improvements within the Township. Most notably, the Township should aggressively seek to acquire and improve scattered neighborhood park locations. Additionally, the Plan recommends continued improvement of the Amos Herr Community Park site, as well as an initial investment at the Nolt Road site, so as to encourage the development of this site with other private funding sources (e.g., soccer and athletic clubs). Again, the Township should make use of all funding opportunities for such resources, including mandatory dedication provisions, the recently released County program, and the Pennsylvania Department of Community Affairs' RIRA programs. Additionally, the Township should adopt the recently prepared Comprehensive Recreation and Open Space Plan.

Fourth, East Hempfield Township relies upon several municipal authorities for the delivery of utilities. First of all, the Municipal Authority of East Hempfield Township (MAEHT) provides public water to much of East Hempfield Township. As described in Chapter VIII, the MAEHT is in need of acquiring additional groundwater sources so as to accommodate existing development, as well as projected growth. Local officials should cooperate with the Municipal Authority in the identification and improvement of needed groundwater sources. Similarly, much of East Hempfield Township relies upon the Lancaster Area Sewer Authority (LASA) for its public sewer service. LASA's recently completed management study identifies capacity problems associated with illegal connection of basement and storm water drains within the various drainage basins of East Hempfield Township. To avoid the need for costly public improvements to the LASA system, East Hempfield Township should cooperate fully with LASA officials in the identification and elimination of such illegal connections.

The final recommendation contained within this chapter deals with cooperation among several public service agencies. Specifically, East Hempfield Township's growth presents acute and localized service demands among emergency services and the School District. Advanced planning by the Township and coordination of development reviews with these agencies will enable them to keep pace with projected growth and maximize their efficiency. In addition, Township decision-makers would benefit from the expertise applied by these local service agencies in the review of future development proposals. As a result, it is recommended that the Township's subdivision and land development review process be amended to require prospective developers to submit information to the various public service agencies for their review and comment. In so doing, such public service agencies will be able to allocate their resources to meet the new demands.

This Comprehensive Plan has attempted to identify and prioritize recommendations necessary to manage growth. Local officials are responsible to monitor and evaluate these recommendations toward ever-changing, locally-expressed goals. Cooperation among all administrative bodies and levels of government are essential to a streamlined and successful implementation strategy. The continued use of public participation is also a very important duty of municipal officials. If, for some reason, the recommendations

of this Plan do not appear to address the then, current conditions, local officials should not hesitate to amend them.

This Plan holds a wealth of information which is easily obtainable and understood. Its implementation should be equally understood so that all residents, businesses, and visitors know that the Plan is vital and that the future of the Township is deliberate and the result of considerable analysis and public input.

The following table illustrates an Action Plan for 18 different tasks that need to be accomplished if the recommendations set forth in this Comprehensive Plan are to be implemented. While this list in no way covers all of the Plan's recommendations, it does emphasize those that are most important. The various tasks are presented by the municipal boards and staff that would be responsible for the implementation of such tasks. Along with each task to be acted on, a page number reference appears in parentheses so that Township officials can readily find the specific recommendations within the Plan. Finally, the completion of these tasks have been spread over a three-year period so as not to overwhelm local resources.

<i>Task and Reference Location</i>	<i>Board of Supervisors</i>	<i>Planning Commission</i>	<i>Township Staff</i>
1. <i>Revise and adopt Zoning Ordinance to implement recommendations of the Future Land Use Plan (pages 178-202).</i>	1993	1993	1993
2. <i>Prepare an annual capital improvements program specifically for transportation improvements (pages 171-175).</i>	1993, 94, 95	1993, 94, 95	1993, 94, 95
3. <i>Prepare an official map for new roadway corridors recommended to improve circulation (pages 165-166).</i>			1993
4. <i>Seek funding from both public agencies and private interests to implement recommended transportation improvements (pages 167-171).</i>			1993, 94, 95
5. <i>Adopt the Township's Comprehensive Recreation and Open Space Plan (pages 82-106).</i>	1993		
6. <i>Prepare a five-year capital improvements program for recreation facility acquisition, development and improvement (page 105).</i>	1993		1993

<i>Task and Reference Location</i>	<i>Board of Supervisors</i>	<i>Planning Commission</i>	<i>Township Staff</i>
7. <i>Continue improvement of the Amos Herr Community Park site (pages 86-88).</i>			1993
8. <i>Begin work on developing the Nolt Road Park site (pages 86-88).</i>			1994
9. <i>Develop the Wheatland Hills neighborhood park (page 90).</i>			1993
10. <i>Apply to Lancaster County for matching grant monies of up to \$100,000 to facilitate the acquisition and development of the John L. Landis property (page 94).</i>	1994		1994
11. <i>Apply to Lancaster County for matching monies of up to \$100,000 to facilitate the acquisition and development of Spring Valley Road site (page 92).</i>	1995		1995
12. <i>Update Act 537 Plan to delete reference to the need for public sewers north of PA 283 and to implement OLDS management techniques in those areas not served by public sewers (pages 179-181).</i>	1993	1993	1993
13. <i>Cooperate with the Municipal Authority of East Hempfield Township (MAEHT) in identifying and improving needed groundwater sources (page 124).</i>			1993
14. <i>Cooperate with the Lancaster Area Sewer Authority in identifying and eliminating capacity problems associated with illegal connections of basement and storm drains (page 139).</i>			1993
15. <i>Prepare a strategic plan, in cooperation with the Police Department, for the future allocation of municipal resources to combat crime and civil disobedience (page 111).</i>			1993

<i>Task and Reference Location</i>	<i>Board of Supervisors</i>	<i>Planning Commission</i>	<i>Township Staff</i>
<i>16. Prepare a strategic plan, with assistance from the various fire chiefs serving the Township, to facilitate the solution to future fire protection service issues (page 118).</i>			<i>1994</i>
<i>17. Establish a proposed residential development referral process with the Hempfield School District so as to facilitate better planning (page 80).</i>		<i>1993</i>	
<i>18. Consider the establishment of a Transfer of Development Rights Ordinance (pages 179-180).</i>	<i>1994</i>	<i>1994</i>	<i>1994</i>
<i>19. Reexamine the urban growth boundary together with the County, and amend it if needed (pages 200-202).</i>	<i>1998</i>	<i>1998</i>	<i>1998</i>

The preceding table plots an ambitious list of recommended activities. These tasks are vital if the Township is to optimally manage its growth. The completion of many of these tasks should result in an improved quality of life within the Township, and help to solve problems that are plaguing other developing suburban municipalities.

Township officials and staff are responsible to monitor and evaluate the implementation strategy aimed at achieving the recommendations set forth in the Comprehensive Plan. Cooperation among all administrative bodies and levels of government is an essential component to a streamlined and successful implementation strategy. The continued reliance on public participation is also a very important duty of Township officials.

If, for some reason, the recommendations set forth by this Comprehensive Plan do not appear to address the, then, current conditions, Township officials should not hesitate to amend portions of this Plan or any other Township policy to rectify those deficiencies.

This Comprehensive Plan holds a wealth of information which is easily obtainable and understood. Its implementation should be as equally understood so that all residents, businesses and visitors know the Plan is vital and that the future of the Township is deliberate, and the result of considerable analysis and public scrutiny.

RESOLUTION

WHEREAS, the East Hempfield Township Planning Commission prepared the Comprehensive Plan consisting of maps, charts and textual matter for East Hempfield Township; and

WHEREAS, the Comprehensive Plan was submitted to the Lancaster County Planning Commission, to the Hempfield School District and to all contiguous municipalities; and

WHEREAS, the East Hempfield Township Planning Commission conducted a public meeting pursuant to public notice concerning the Comprehensive Plan; and

WHEREAS, the East Hempfield Township Planning Commission recommended to the East Hempfield Township Board of Supervisors adoption of the Comprehensive Plan; and

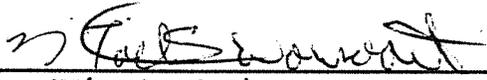
WHEREAS, the East Hempfield Township Board of Supervisors conducted a public hearing pursuant to public notice and considered the review comments of Lancaster County, all contiguous municipalities, the Hempfield School District and all public meeting comments and the recommendations of the East Hempfield Township Planning Commission; and

WHEREAS, the Board of Supervisors of East Hempfield Township deems it appropriate to adopt the Comprehensive Plan as the Comprehensive Plan for East Hempfield Township.

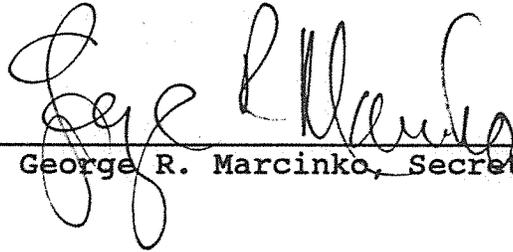
NOW THEREFORE, BE AND IT IS HEREBY RESOLVED that the Board of Supervisors of East Hempfield Township hereby adopts the Comprehensive Plan as the East Hempfield Township Comprehensive Plan. The Plan includes all maps, charts, textual matter and other matters included in the Comprehensive Plan.

ADOPTED this 13th day of January, 1994 by unanimous vote of the Board of Supervisors at a special public meeting duly advertised.

BOARD OF SUPERVISORS FOR THE
TOWNSHIP OF EAST HEMPFIELD

By: 
~~Vice~~ Chairman

I, George R. Marcinko, Secretary of the Board of Supervisors of East Hempfield Township, Lancaster County, Pennsylvania, hereby certify that the foregoing is a true and correct copy of a Resolution duly adopted at a legally constituted meeting of the Board of Supervisors of East Hempfield Township held on January 13, 1993, at which meeting a quorum was present and voted in favor thereof.


George R. Marcinko, Secretary

