MILLCREEK TOWNSHIP

COMPREHENSIVE PLAN

1976
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BACKGROUND

STUDIES
INTRODUCTION

This document has been prepared as a technical guide to be utilized by township officials to promote orderly growth and development in Millcreek Township. By following the data and information contained in this report, decisions concerning the extent and location of future development can be made knowledgeably.
GEOGRAPHIC SETTING

Millcreek Township is a second class township located in the southeast corner of Lebanon County in south central Pennsylvania. The township is primarily rural in that much of the land is utilized for agricultural purposes while a significant portion of the southern sector remains as undeveloped forest and mountain land. The township is bordered on the south by Elizabeth, Clay, and West Cocalico Townships in Lancaster County; on the east by Heidelberg, Marion and South Heidelberg Townships in Berks County; on the west by Heidelberg Township, Lebanon County; and on the north by Richland Borough and Jackson Township in Lebanon County. Elevations in the township range from 400 feet on the Mill Creek as it flows northeast out of the township to 1,380 feet in the South Mountains. Newmanstown, the major population center of the township is approximately 11.5 miles east of the City of Lebanon, Pennsylvania. The township encompasses 20.7 square miles and was inhabited by 2,544 residents in 1970.
HISTORICAL BACKGROUND

The area in and surrounding Millcreek Township is rich with history. Recorded history of the area now known as Millcreek Township began with the Leni-Lenape Indians. Villages occupied by the Indians were located in the eastern portion of Lebanon County, which includes Millcreek. This fact is documented by the many Indian relics that were found in the Millbach area.

The first white men to arrive in the area were originally from the Palatine Region of Germany. They came to settle in this area after migrating from the Schoharie Valley in New York in the Spring of 1723. Dissatisfaction with indentures that had to be paid, lack of tillable soil and defective land titles were said to cause the Palatines to seek new land. They decided to settle in the Lebanon Valley since the fertile limestone soil reminded them of their homeland in Germany. The abundance of wildlife and fish as well as the many streams and springs also were attractive to them.

Fort Zeller, located north of Route 419 on Fort Zeller Road, and originally constructed in 1723 is concrete proof that white settlers were in Millcreek in the early 1720's. It was constructed as a meeting place for worship and for defense against Indian attacks. The original building which was constructed of logs soon deteriorated. In 1745, the fort was reconstructed of limestone a few feet from the original one. The fort which is in very good condition is said to be the oldest existing Indian fort in Pennsylvania. In 1975, Fort Zeller was placed on the National Register of Historic Places.

The first real settlement in the Township was the Village of Millbach. A few historic buildings are still standing in this small community. One of these structures, the House of the Miller constructed in 1752 and the attached mill constructed in 1784, is on the National
Register of Historic Places. The large 2½ story limestone house with gambrel roof has been cited as "probably the most outstanding existant example in Southeastern Pennsylvania of early Germanic domestic architecture." The exterior has remained unchanged and in good condition. However, interiors of the house were removed in 1926 for display in the Philadelphia Museum of Art.

In 1741, Walter Newman purchased land from the Penn family to lay out the town of Newbury which is now Newmanstown. About one-hundred years later the first home was constructed northwest of Newmanstown in Missimmers Station which is now named Sheridan for the famous Civil War general. About the same time, in 1843, Millcreek officially became a separate governmental unit known as Millcreek Township.
PHYSICAL CHARACTERISTICS

The physical characteristics of a municipality are the most important considerations when planning for future development. Physical features which consist of topography, soils, and waterways, should be studied to determine where features that are favorable for development exist and where limitations for development occur. Limitations that have been created by nature should never be altered for development purposes since the environment, and natural resources might be disturbed or destroyed. Instead development should be encouraged to take place only in areas that are indicated as suitable.

The three (3) major deterrents to development are streams, flood prone areas, and high water tables; excessively sloped hillsides; and soils with limitations for development and on-lot sewage disposal systems. These deterrents along with features that create favorable development conditions are discussed in the following analysis:

HYDROGRAPHY

The hydrography of the township is examined as the following three (3) separate entities; streams and their drainage systems, flood-prone areas, and the water table.

There are five (5) principal drainage areas in the township. Determined by topography and stream location, all of these drainage areas, with the exception of the Cocalico Creek, eventually drain into the Schuylkill River, which in turn flows into the Delaware River. Hence, most of Millcreek Township is in the Delaware River Basin unlike most of Lebanon County which is in the Susquehanna River Basin.
Millcreek Township's creeks and their respective drainage areas are as follows:

A. **Mill Creek Watershed** - The largest watershed in the township, Mill Creek, drains most of the land north of South Mountain (approximately 60% of the land area of the township). The Mill Creek, with its tributaries, flows toward Sheridan where it leaves the township as it flows to the Tulpehocken Creek in Berks County.

B. **Furnace Creek Watershed** - The second largest drainage area is in the southern portion of the township. Collected by the Furnace Creek, the waters of this area originate southwest of Texter Mission and flow northeastward toward Robesonia, Berks County.

C. **Cocalico Creek Watershed** - This watershed is located in the southwestern corner of the township. Its two (2) major tributaries flow from the south side of South Mountain into Lancaster County to form the Cocalico Creek which eventually empties into the Susquehanna River.

D. **Additional Watershed Areas** - There are two (2) remaining watersheds in the township. The first drains the northwestern most corner of the township, flows northward, and empties into the Tulpehocken Creek in Jackson Township. The second, a tributary of Furnace Creek, drains a small area along the Berks-Lebanon County line and eventually flows into Furnace Creek, just south of Robesonia, Berks County.

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MILLCREEK TOWNSHIP
DRAINAGE AREAS

A MILL CREEK WATERSHED
B FURNACE CREEK WATERSHED
C COCALICO CREEK WATERSHED
D ADDITIONAL WATERSHED AREAS

SCALE 1" = 4000'

Prepared by
Lebanon County Planning Department
Since the quality and quantity of the water are important factors for agricultural and industrial development as well as for future residential settlements, the drainage basin is a natural unit from which logical development plans for the township can be derived.

Additionally, the drainage pattern of the Township can be utilized in planning for future water and sewer systems. Since these systems are designed for reasons of economic feasibility to flow by gravity from high elevations to low lying areas, the five (5) drainage basins can be thought of as units for water and sewerage systems. Each basin would require a separate system; hence, the feasibility for construction of these facilities in the various areas of the Township can be determined. With this knowledge, development plans for high density development can feasibly be derived for areas that can and probably will be served by water & sewer facilities.

The fact that sewerage systems function by gravity does not indicate that sewer lines should follow the natural lowest-lying areas of the Township which are streambeds. This is not a wise practice since leakage of the lines may be created from changes and shifting of the stream bed. The direct result would be pollution of Township streams.

The hydrography of the Township must also be studied to determine the location of flood-prone areas. By utilizing information from past flooding conditions, topography, and soils maps, the areas most prone to flooding have been identified. The Hydrography Map, which is available in the Township Office, illustrates land areas that are considered to be flood-prone. Development should be restricted in these areas because of the dangers of property damage or loss of life. In addition, flooding conditions may be intensified through the volume displacement of structures or obstruction of the natural flow of water by structures. Finally, the risk
of water pollution problems may be increased by development on the flood plain.

Another concern is the quality of ground water which serves as a water supply for many Township residents. The valley area of Millcreek Township, which includes the central and northern portions, is underlain by limestone and dolomite beds. These rock formations generally hold excellent ground water supplies called aquifers. Water is usually held in bedding planes, joints, faults, and other fractures that have been enlarged by solution channels. Movement and storage of ground water occurs entirely within these solution openings. The rate of flow in ground water movement varies but it has been found that it generally flows downhill in the same direction as surface slopes. The water held in these aquifers is regenerated by precipitation. Generally, the recharge of ground water takes places over virtually the entire area that is underlain by limestone and dolomite beds, but is greatest at dry stream channels and sink holes.

Because of the nature of ground water regeneration in the valley region of the Township, caution must be exercised when installing on-lot sewage disposal systems. Ground water supplies will most likely be contaminated if systems are installed where there is less than four (4) feet of suitable soil between the bottom of the absorption area of the system and rock formations, impervious areas, or seasonal ground water table. With this in mind, sewage disposal officers should strictly enforce the regulations of Act 537, the Pennsylvania Sewage Facilities Act, as amended, when issuing sewage disposal permits in this area. Particular attention should be given to probe hole tests to assure that there is at least four (4) feet of suitable soil beneath the proposed absorption area before a permit is issued. If all of the proper precautions are taken prior to the issuance of a permit, there should be no danger of additional contamination of ground water supplies.
by new sewage disposal systems.

SOILS

Knowledge of soil characteristics for sewage disposal purposes and other development capabilities are invaluable when planning for future development. In areas of the Township that will not have sewerage facilities, it is essential to know which soil types are suitable or unsuitable for on-lot sewage disposal systems. If development were to take place on unsuitable soils, drainage problems as well as unsanitary sewage problems may result.

For study purposes, the soils of Millcreek Township can be divided into the following three (3) categories:

(1) deep, well-drained soils which are suitable for on-lot sewage disposal

(2) poorly drained soil and rocky and/or close to surface bedrock soil which is unsuitable for on-lot sewage disposal

(3) marginal soils that have characteristics that may cause them to be of questionable suitability for conventional on-lot sewage disposal systems.

These three (3) soil categories can be described in even more detail by separating suitable, unsuitable, and marginal soils into their respective soil series. A soil series is that grouping of soils having structural similarities such as thickness, arrangement and other similar identifying features. Since some soil series vary so much in slope, texture, etc. all series are also denoted by numerical mapping symbols which indicate soil type and slope. The number itself refers to the soil type while the accompanying letters signify the degree of slope. For example "A" indicates
a slope of 0% to 3%, "B" is 3% to 8%, "C" is 8% to 15%, "D" is 15% to 25%, and "EF" is 25% to 50% slope.

The soils of Lebanon County were studied, classified and mapped into soil series by soil specialists of the United States Department of Agriculture Soil Conservation Service. The soil specialists have grouped the identified soil series by names and map symbols into three (3) categories known as slight, severe and moderate for on-lot sewage disposal and development purposes. These three (3) categories correspond with the designations of suitable, unsuitable, and marginal that are being utilized in this plan.

In the process of designating Millcreek Township's soils into the three (3) categories, only the soil type was considered and not the degree of slope. In the preparation of this study it was felt that slope should not be considered as the primary determinant of soil suitability since the method of soil mapping might not give an accurate picture of slope over a large area. Slope can vary substantially so that small areas with slight slopes can exist where severe slopes have been indicated. Therefore, it was determined that areas that have been labeled with suitable or marginal soil type symbols with the accompanying letters "D", "E", or "F" indicating severe slopes, would remain in the suitable or marginal categories. It was also felt that where the letters "D" denoting 15% to 25% slope and "EF" denoting 25% to 50% slope are indicated, it would be assumed that large areas of that soil type may be unsuitable for development because of slope limitations only. It should be mentioned here that the USDA Soil Conservation Service recommends that slopes is excess of 12% not be intensively developed and slopes in excess of 20% not be developed at all.

A map which depicts the general location of soil types in Millcreek Township is available for review in the Township Office. The following is
a listing of the soil series and the respective mapping symbols commonly
found in Millcreek Township:

SUITABLE SOILS
DEEP, WELL DRAINED SOILS

47 CD-AB
53 B-C
161 EF
64 AB-CD
51 B-C-D
74 B-C
75 B-C
77 AB-CD
45 B-C

Edgemont very stony loam
Chester channery silt loam
Dekalb very stony sandy loam
Lewisberry very stony sandy loam
Lewisberry gravelly sandy loam
Murrill gravelly silt loam
Laidig channery loam
Laidig very stony loam
Edgemont channery loam

UNSUITABLE SOILS
POORLY DRAINED SOIL OR ROCKY/CLOSE TO SURFACE BEDROCK

10
72 AB
174 B
199 DF
116 B
105 A-B
7
8
56 B
71 B
5
4

Atkins silt loam
Andover very stony loam
Brinkerton silt loam
Very stony land
Huntington silt loam
Penlaw silt loam
Lindsie silt loam
Melvin silt loam
Abbotstown silt loam
Andover gravelly loam
Rowland silt loam
Bowmansville silt loam

MARGINAL SOILS
QUESTIONABLE FOR ON-LOT SEWAGE DISPOSAL

76 AB
78 B
102 B
80 A-B-C
35 B-C-D
113 A-B
37 AB-CD
44 B-C
144 C

Buchanan very stony loam
Buchanan gravelly loam
Readington silt loam
Duffield silt loam
Hagerstown silt loam
Clarksburg silt loam
Hagerstown very rocky silty clay loam
Berks shaly silt loam
Weikert shaly silt loam

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The first group, the deeper, more well drained soils, mainly consist of the Chester, Edgemont, Murrill, Dekalb, and Laidig soil series which are primarily found in the southeastern half of the township. The Chester and Edgemont series (approximately 22% of the township's soil) are found on the southern slopes of the South Mountain, while the Dekalb series in Millcreek, with a typical slope exceeding 20%, is found on the main ridge of the mountain. North of this ridge, extending to just south of Newmanstown, Laidig and Murrill soils predominate.

While the total acreage of the suitable soils comprise almost 35% of the total acreage of Millcreek Township, much of this area is in the more mountainous portion of the township where excessive slopes may be a deterrent to development. The remaining suitable soils on lower elevations are well suited for productive agricultural uses as well as for on-lot sewage disposal, thus making it a prime area for residential development. Just such an area is found south of Newmanstown and in the general area of Stricklerstown.

The unsuitable or poorly drained soils in the township may be categorized into two (2) groups; (1) soils that occur on flood plains and have a high flooding hazard and (2) soils on upland sites that are very poorly drained. Fortunately, only about 9% of the soil in Millcreek Township is classified as unsuitable. Unsuitable for agricultural as well as developmental uses, these soils (ie., Atkins, Penlaw, Melvin, etc.) are mainly found along Mill Creek, Furnace Creek, and various tributaries to these creeks and the Tulpehocken Creek. In addition, there are several areas of Abbottstown, Andover and Brinkerton soils which are limited for development due to a high water table and the resultant poor drainage.

The remaining 57.5% of land area in the township is composed of marginal soils of which Duffield (31.6% of township soil) makes up the largest portion. Clarksburg and Hagerstown soils are also highly prevalent.
Agricultural potential for these soils range from fair to excellent depending on high water table, seasonal wetness, slope or rockiness. Additionally, on-lot sewage disposal is often possible either with a conventional or acceptable alternate system. Therefore, development of an area with such marginal soil should be carefully evaluated with respect to existing soil capabilities and, the effect of development on the existing water supply. Intensive residential development should be restricted unless public sewage facilities are available. Unsanitary health conditions often result when on-lot septic systems fail to operate properly in such areas, since groundwater and streams are often polluted in the process.

Soil characteristics should be evaluated not only for suitability for on-lot sewage disposal systems but also for other considerations before any type of development is allowed to occur. In the past it has been found that poorly drained soils should not be developed since structures built on these soils may settle, crack, or be subject to water leakage. Moreover, roads, parking areas, and slab structures which are constructed on poorly drained soils generally require more bedding material than is normally needed for durability and protection against excessive settling and/or frost action. A good reference publication that should be studied before any type of use or development takes place on any soil is the Soil Survey Interpretations for Selected Areas in Lebanon County, Pennsylvania prepared by the United States Department of Agriculture.

TOPOGRAPHY

Located in the Piedmont Region of Pennsylvania, Millcreek Township is characterized by a varying topography. The north and central portions of
the Township consist of fertile valleys and gently rolling terrain primarily oriented to agricultural uses or sporadic residential development; the exception of course, being the main population concentrations in the Newmanstown and Sheridan area to the northeast. In contrast to this are the mountainous southern areas of the South Mountain range which are primarily woodland. Characterized by excessive slope, there are, however, some areas of level land devoted to agricultural uses. Elevations in the township range from 400 feet above sea level north of Sheridan to 1,380 feet in the South Mountains.

Since a sizeable percent of the township consists of land with a slope in excess of 12%, special attention should be directed toward preventing development and cultivation of steeply sloping land. If such land is cultivated or otherwise removed of vegetation, excessive water runoff, erosion, and mudslides may occur. Consequently, the USDA Soil Conservation Service recommends that all lands with slopes in excess of 12% be spared from cultivation. Similarly, such steep slopes should not be intensively developed since paving and roof tops increase water runoff and the chance of mudslides or other erosive damage.

In addition, sewage problems are generally intensified in sloping areas since drainage problems often result in the surfacing of sewage effluent at lower elevations. However, some low density residential activity may be permitted under certain conditions where slopes range from 12% to 20%, as long as there is conservation of vegetation, and wise placement of buildings and septic systems. Slopes in excess of 20% should not be developed because the terrain is definitely unsuitable.

Inspection of a topographic map of Millcreek Township indicates that the only areas with a slope in excess of 20% are the South Mountain area and the area north & west of Sheridan and Newmanstown. Scattered areas with slopes of 12 - 20% are also evident in these areas and extend sporadically
to the western Township line. Development in these areas should be carefully regulated with a trend toward larger residential lots.

It is specifically recommended that large lots be required for development in the South Mountain area because of the steep slopes and numerous springs. Large lots would discourage intensive development which is not suitable for this area because it tends to create increased water runoff, landslide, erosion, and sewage disposal problems.

In addition, strict land and vegetative coverage regulations should be enforced in this area to prevent water runoff and erosion problems. Applications for development of severely sloping plots should be accompanied by a soil and erosion control plan to be approved by the Soil Conservation Service. Also, limits should be placed on the amount of vegetative cover that can be removed.
EXISTING LAND USE

Existing land use data is a valuable and informative part of a comprehensive plan, since it indicates the current distribution of uses and the intensity of those uses on the land. More importantly it is an essential part of the comprehensive plan since it will serve as the basis for the future land use plan. In formulating the plan for future land use, past and current trends of development are usually evaluated to determine if these trends should be continued or discouraged. In addition, the location of physical features, existing community facilities, public utilities, and transportation systems are examined in relation to existing and proposed developments. These factors indicate the type and intensity of development that should take place or be avoided in certain areas.

To determine the types and intensity of land uses in the Township, an extensive land use inventory was conducted in July, 1975. At that time the primary use of land for each property was noted. Six (6) general categories of land use were catalogued by utilizing the criteria indicated on the following table:

**LAND USE CATEGORIES**

<table>
<thead>
<tr>
<th>General Land Use Category</th>
<th>Subcategories of Land Use Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residential</td>
<td>Single-family, two-family, multi-family, and mobile homes.</td>
</tr>
<tr>
<td>Commercial</td>
<td>retail, personal service, offices, businesses, repair and construction services, and professional services.</td>
</tr>
<tr>
<td>Industrial</td>
<td>Manufacturing, warehousing, refuse collectors.</td>
</tr>
<tr>
<td>Public</td>
<td>Municipal buildings, educational facilities, churches, and cemeteries.</td>
</tr>
</tbody>
</table>
Recreation, Parks, and Open Space———recreation areas, parks, playgrounds, campsites.

Undeveloped Land———cropland, woodland, state game lands

**General Land Use Patterns**

The results of the land use survey indicate that Millcreek Township is essentially rural in character. This is documented by the fact that only 11% of the Township has been developed. The following table gives a statistical summation of the types and intensity of land uses that have been established on the land that has been developed.

<table>
<thead>
<tr>
<th>Land Use Classification</th>
<th>Area (acres)</th>
<th>Percent of Total Developed Area</th>
<th>Percent of Gross Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residential</td>
<td>472.13</td>
<td>33.58</td>
<td>3.7</td>
</tr>
<tr>
<td>Commercial</td>
<td>32.47</td>
<td>2.30</td>
<td>0.3</td>
</tr>
<tr>
<td>Industrial</td>
<td>200.60</td>
<td>14.27</td>
<td>1.6</td>
</tr>
<tr>
<td>Public</td>
<td>71.08</td>
<td>5.05</td>
<td>0.6</td>
</tr>
<tr>
<td>Recreation &amp; Parks</td>
<td>301.85</td>
<td>21.47</td>
<td>2.4</td>
</tr>
<tr>
<td>Transportation</td>
<td>328.00</td>
<td>23.33</td>
<td>2.6</td>
</tr>
</tbody>
</table>

**Total Developed Area** 1,406.13 100.00 11.2

**Total Undeveloped Land** 11,265.87 88.8

Crop Land 8,449.40 66.6

Remaining Undeveloped Land 2,816.47 22.2

**Total Township Area** 12,672.00 100.0

Source: Lebanon County Planning Department estimates based on existing land use survey.

Generally, residential, commercial, and industrial development has occurred in the central portion of the Township in a strip extending from Stricklerstown to Newmanstown. Other minor residential concentrations of...
development have occurred in Millbach and in a small area along Stricklers-town Road near the junction of Route 897 in the vicinity of Cocalico. The northern and southern sectors of the township remain undeveloped for the most part.

One contrast in land use intensity should be noted. While most of the land area in the Township is sparsely developed, Newmanstown and Sheridan are as densely developed as many urban areas of Lebanon County.

In order to fully comprehend the nature of land uses in Millcreek Township the following analysis of each category has been completed:

Residential

It is estimated that 472.13 acres or one-third of the entire developed area of the Township is occupied by residential uses. This percentage is slightly higher than the average 29% of the total County developed land area devoted to residential uses.

Four sub-categories of residential uses exist within Millcreek Township. These are single-family dwellings, two-family dwellings, multi-family dwellings and mobile homes. Of the 650 residential structures that exist in the Township, the overwhelming majority, or 86% of these structures were found to be single-family homes. The distribution of types of residential structures has been tabulated as follows: single-family, 558 (86%); two-family, 33 (5%); multi-family, 9 (1%); and mobile homes 51 (8%). It should also be mentioned that 119 farm homes were recorded, but these have been classified with agricultural uses.

Residential development has occurred in the greatest concentration in the Newmanstown and Sheridan areas, where 412 residential structures, or 74% of all residential structures are located. Most of the remaining 146 structures are situated along the major collector roads such as Schaefferstown Road, Stricklerstown Road, Fort Zeller Road, and Sheridan.
Road. Small concentrations of development along these roads have occurred in Stricklerstown, Millbach, Millbach Springs, and the area immediately south of Newmanstown. Scattered residential development has occurred throughout the remainder of the Township.

**Commercial**

There are no major centers of commercial activity in Millcreek Township that could satisfy most consumer needs of Township residents. However, there is a hub of commercial activity in the villages of Newmanstown and Sheridan where several convenience type establishments are located. In fact twenty-four of the thirty-seven businesses in the Township are located in Newmanstown and Sheridan. Most of these businesses consist of restaurants, taverns, gas stations, and personal service shops such as barber shops, beauty salons, and insurance agencies. Major establishments include a grocery store, bank, and nursery-orchard business.

The remaining thirteen commercial businesses are widely scattered throughout the Township. They consist mainly of sales and service shops that are in many cases home occupations.

**Industrial**

Industrial uses account for a significant two-hundred (200) acres or 14.27% of the developed land area of the Township. A large part of the two-hundred acres is occupied by two industries on large sites. Lavino, Inc. occupies 75 acres while Kountry Kraft Kitchens is on 75.52 acres of land. The remaining six industries are on parcels that vary from 0.3 acres to 13.68 acres. One of these six industries, North American Refractories, actually occupies a large parcel of land, however, most of the land area is in Berks County.

Seven of the eight industries are located either in or in close proximity to the population centers of Newmanstown and Sheridan. This locality is convenient to existing transportation systems such as Route 419.
which intersects with U.S. 422 and the railroad. This means that raw materials and finished goods can be easily transported.

Public

Almost 60% of the 71 acres of public land is devoted to community facilities. Two township buildings, one post office and one firehouse are located in the population center of Newmanstown where they are utilized and needed most. Three schools, two of which are parochial Mennonite schools, and one which is a public elementary school, are located on major collector highways in the northern sector of the township.

The remaining 40% of the public land area is occupied by eight churches and two cemeteries. Three of these churches are located in the Villages of Newmanstown and Sheridan. The other five churches are scattered throughout all sectors of the Township.

Recreation and Parks

In comparison to Lebanon County in its entirety, Millcreek Township has a large amount of recreation land. Twenty-one percent of the developed land area in Millcreek is utilized for recreation and parks, while 8.5% of the developed land area in all of Lebanon County is devoted to recreational uses. Only one municipality in the County, Swatara Township, has a greater percentage of developed land area occupied by recreation areas and parks.

Millcreek has a variety of recreational uses that are dispersed through the central and southern portions of the Township. In Newmanstown there are two parks occupying twelve acres. In close proximity and immediately south of Newmanstown is the Community swimming pool and a trout hatchery. The Stricklerstown and South Mountain area boast three camp grounds and a rod and gun club.
Transportation

Transportation uses in the Township include highway and railroad right-of-ways. This transportation system utilizes 23.33% of the developed land area or 2.6% of the gross land area of the Township.

Undeveloped Land

Nearly ninety percent of the land area in the Township remains undeveloped. Undeveloped land areas are predominate in the northern and southern portions of the Township. The bulk of the undeveloped land is agricultural land, wooded areas, mountain land, State Game Lands, and watershed areas owned by the Richland Borough Water Company, and the Newmanstown Water Authority and Womelsdorf-Robesonia Joint Water Authorities.
Population Trends

Millcreek Township has experienced a relatively slow growth rate as evidenced by past population trends. A slight increase from 1960 to 1970 followed the small decrease in population from 1950 to 1960. This indicates that the population has remained relatively stable over the past twenty (20) years. Moreover, the township's population percentage increase (5.7%) for the last decade has been rather insignificant when compared to the total county percentage increase (9.7%). Additionally, Millcreek had the fourth lowest growth rate in the County from 1960 to 1970. The following table indicates the past trends of population growth and decline for the Township and its principle population center, the Village of Newmanstown:

### POPULATION TRENDS: MILLCREEK TOWNSHIP

<table>
<thead>
<tr>
<th>Year</th>
<th>Population</th>
<th>Numerical Change</th>
<th>% Change</th>
<th>% Change for the Total County</th>
</tr>
</thead>
<tbody>
<tr>
<td>1940</td>
<td>2,299</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1950</td>
<td>2,442</td>
<td>143</td>
<td>6.2%</td>
<td>12.4%</td>
</tr>
<tr>
<td>1960</td>
<td>2,406</td>
<td>-36</td>
<td>-1.5%</td>
<td>11.2%</td>
</tr>
<tr>
<td>1970</td>
<td>2,544</td>
<td>138</td>
<td>5.7%</td>
<td>9.7%</td>
</tr>
</tbody>
</table>

### POPULATION TRENDS: NEWMANSTOWN

<table>
<thead>
<tr>
<th>Year</th>
<th>Population</th>
<th>Numerical Change</th>
<th>% Change</th>
<th>% Change for the Total County</th>
</tr>
</thead>
<tbody>
<tr>
<td>1950</td>
<td>----</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1960</td>
<td>1,459</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1970</td>
<td>1,532</td>
<td>73</td>
<td>5%</td>
<td>9.7%</td>
</tr>
</tbody>
</table>

Source: 1970 U.S. Census of Population

From all indications, it seems as if the increase in population from 1960 to 1970 can be attributed primarily to natural increase rather than immigration. This has been determined from computations utilizing birth and death statistics.
BIRTH AND DEATH STATISTICS FOR MILLCREEK TOWNSHIP

<table>
<thead>
<tr>
<th>Year</th>
<th>Births</th>
<th>Deaths</th>
</tr>
</thead>
<tbody>
<tr>
<td>1960</td>
<td>42</td>
<td>28</td>
</tr>
<tr>
<td>1961</td>
<td>45</td>
<td>24</td>
</tr>
<tr>
<td>1962</td>
<td>63</td>
<td>21</td>
</tr>
<tr>
<td>1963</td>
<td>48</td>
<td>35</td>
</tr>
<tr>
<td>1964</td>
<td>54</td>
<td>28</td>
</tr>
<tr>
<td>1965</td>
<td>48</td>
<td>33</td>
</tr>
<tr>
<td>1966</td>
<td>45</td>
<td>38</td>
</tr>
<tr>
<td>1967</td>
<td>54</td>
<td>26</td>
</tr>
<tr>
<td>1968</td>
<td>31</td>
<td>18</td>
</tr>
<tr>
<td>1969</td>
<td>49</td>
<td>29</td>
</tr>
</tbody>
</table>

Total  479   280

Source: Birth and Death Records, Office of the Pennsylvania Department of Health.

MIGRATION FACTOR COMPUTATION

2406 - 1960 Population
+ 479 - Births 1960 - 69

2885
- 280 - Deaths 1960 - 69

2605 - 1970 Population by Net Natural increase
- 2544 - 1970 Population according to U.S. Census

- 61 - Net out-migration factor.

It is apparent from the preceding computations that there was actually out-migration from 1960 to 1970, in spite of the population increase caused by a greater number of births than deaths. However, actual number of persons
who have left the township can not be determined with the limited data that is available.

The relatively slow population growth rate that has taken place in Millcreek is further emphasized when compared to growth rates in surrounding municipalities:

<table>
<thead>
<tr>
<th>County</th>
<th>Municipality</th>
<th>Population</th>
<th>Numerical Change</th>
<th>Percentage Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lebanon</td>
<td>Millcreek</td>
<td>2544</td>
<td>138</td>
<td>5.7</td>
</tr>
<tr>
<td>Lebanon</td>
<td>Heidelberg</td>
<td>2833</td>
<td>236</td>
<td>9.1</td>
</tr>
<tr>
<td>Lebanon</td>
<td>Jackson</td>
<td>3388</td>
<td>610</td>
<td>22.0</td>
</tr>
<tr>
<td>Lebanon</td>
<td>Richland</td>
<td>1444</td>
<td>168</td>
<td>13.2</td>
</tr>
<tr>
<td>Lancaster</td>
<td>West Cocalico</td>
<td>4247</td>
<td>639</td>
<td>17.7</td>
</tr>
<tr>
<td>Lancaster</td>
<td>Clay</td>
<td>2832</td>
<td>826</td>
<td>41.2</td>
</tr>
<tr>
<td>Berks</td>
<td>South Heidelberg</td>
<td>3198</td>
<td>-573*</td>
<td>-15.2*</td>
</tr>
<tr>
<td>Berks</td>
<td>Heidelberg</td>
<td>1263</td>
<td>177*</td>
<td>16.3*</td>
</tr>
<tr>
<td>Berks</td>
<td>Marion</td>
<td>1250</td>
<td>78</td>
<td>6.7</td>
</tr>
<tr>
<td>Lebanon</td>
<td>County</td>
<td>99,665</td>
<td>8,812</td>
<td>9.7</td>
</tr>
</tbody>
</table>

* parts of Heidelberg and South Heidelberg Townships were annexed by Wernersville Borough therefore causing the population growth for these townships to seem to be lower then they would have with no annexation.

The preceding table indicates that Millcreek had the next to the lowest growth rate of all the surrounding municipalities. It should be noted, however, that five (5) of the nine (9) surrounding municipalities had significant increases in population during the past decade. This may point to a trend of increased growth in this region in the future. Conceivably, Millcreek may experience an increase in population as a result of the growth impact that is expected to occur in nearby communities.
Population Characteristics

Age-Sex Distribution

Millcreek township seems to have an age distribution that is similar to Lebanon County in its entirety. The following table verifies this fact:

<table>
<thead>
<tr>
<th>AGE COMPOSITION</th>
<th>% Under 18 Years</th>
<th>% 65 Years &amp; Over</th>
<th>Median Age</th>
</tr>
</thead>
<tbody>
<tr>
<td>Millcreek</td>
<td>34.2</td>
<td>10.5</td>
<td>29.1</td>
</tr>
<tr>
<td>Lebanon County</td>
<td>33.2</td>
<td>10.5</td>
<td>30.1</td>
</tr>
</tbody>
</table>

Source: 1970 U.S. Census

The age sex distribution in the following pyramid illustrates a broad base in the younger age groups that tapers in at the middle age groups and expands outward again for the elderly.
One interesting revelation is the small size of the 0 to 4 age group in comparison to the 5 to 9 age group. This seems to indicate that the birth rate is declining particularly since the 0 to 4 age group was larger in 1960 at 248 as compared to 230 in 1970. This hypothesis is further supported by the following computations:

BIRTH RATE

**1956 to 1960**

\[
\text{Birth rate} = \frac{248 \text{ 0 to 4 year olds in 1960}}{394 \text{ 15 to 39 year old families in 1960}} = 0.63 \text{ births for every woman of child bearing age}
\]

**1961 to 1965**

\[
\text{Birth rate} = \frac{257 \text{ 5 to 9 year olds in 1970}}{380 \text{ 20 to 44 year old females in 1970}} = 0.68 \text{ births for every woman of child bearing age}
\]

**1966 to 1970**

\[
\text{Birth rate} = \frac{230 \text{ 0 to 4 year olds in 1970}}{409 \text{ 15 to 39 year olds in 1970}} = 0.56 \text{ births for every woman of child bearing age}
\]

The decline in birth rate means that the school age group should be shrinking over the next five to ten years.

The sex composition of the population is also typical of most sections of our country today in that there are more females than males.

**SEX COMPOSITION**

<table>
<thead>
<tr>
<th></th>
<th>Female</th>
<th>Male</th>
<th>No. of females per 100 males</th>
</tr>
</thead>
<tbody>
<tr>
<td>Millcreek Township</td>
<td>1,302</td>
<td>1,242</td>
<td>104.8</td>
</tr>
<tr>
<td>Lebanon County</td>
<td>51,019</td>
<td>48,646</td>
<td>104.9</td>
</tr>
</tbody>
</table>

Source: 1970 U.S. Census

**Racial Distribution**

The overwhelming majority of Millcreek Township residents is white. A very insignificant number are non-whites as the following table illustrates:
RACE IN MILLCREEK TOWNSHIP

<table>
<thead>
<tr>
<th>Total Population</th>
<th>% of Total Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>White</td>
<td>2,540</td>
</tr>
<tr>
<td>Black</td>
<td>3</td>
</tr>
<tr>
<td>Other</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td>2,544</td>
</tr>
</tbody>
</table>

Source: 1970 U.S. Census

Actually, the non-white population has decreased since 1960 when there were 18 blacks in the census count.

Household Population

In 1970 there were 2,544 persons living in 800 households for an average of 3.18 persons per household. In 1960, there were 2,406 persons in 721 households which indicates an average of 3.34 persons per household.

Population Projection and Estimate

According to a recent population estimate by the Planning Department based on birth and death statistics and building permit records, Millcreek Township's population is growing at a surprising rate when compared to past census figures. The January 1975 population estimate was computed at 2,690 this represents a numerical increase of 146 since the 1970 Census and a percentage increase of 5.7%.

In the future, Millcreek's population is expected to continue to grow at a moderate rate. This prediction is forecast on the basis of the following criteria:

1. As mentioned previously, the surrounding municipalities in the region have been experiencing moderate to rapid population growth. It would seem logical that the regional trend would effect Millcreek's future population growth.
2. In recent years, significant industrial expansion has taken place. New and/or expanded industry tends to attract new residents through additional job opportunities. In the future increased industrial activity is likely since proposed sewerage facilities to be constructed before 1980 may possibly attract new industry.

3. There are many aesthetically pleasing mountain areas in the Township that are desirable for residential development. Already many individuals are constructing homes in these areas. Conceivably, if a developer would purchase and subdivide a large parcel into building lots a significant increase in population would occur. However, caution should be exercised in permitting any future development of this area since the water supply for several communities is regenerated on the South Mountain. Indiscriminate development in the spring and reservoir areas may pollute the water supply.

4. The metropolitan areas of Reading and Lancaster as well as the City of Lebanon are within easy commuting distance of Millcreek Township. The escape to the suburbs and rural areas by workers in urban areas may well spill over into areas such as Millcreek.

The population projection for Millcreek Township into 1980 and 1990 has been based on an expected percentage representation of the total county population projection. The county projection has been computed by the reliable cohort-survival method. This method is based on past trends of the survival of 5-year interval age groups. The township projection is then calculated by the percentage of the total county population that it is expected to represent. This is based on past percentages as well as expected future growth. Millcreek's percentage representation is expected to remain about the same over the next two decades. Population growth is still predicted, though, since the county total population is expected to increase at a substantial rate.
MILLCREEK TOWNSHIP POPULATION PROJECTION

<table>
<thead>
<tr>
<th></th>
<th>Projection</th>
<th>Numerical Increase from last decade</th>
<th>Percentage Change from last decade</th>
<th>Percent of County Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Millcreek 1980</td>
<td>2,834</td>
<td>290</td>
<td>11.4%</td>
<td>2.51%</td>
</tr>
<tr>
<td>Millcreek 1990</td>
<td>3,222</td>
<td>388</td>
<td>13.7%</td>
<td>2.52%</td>
</tr>
<tr>
<td>Lebanon Cty. 1980</td>
<td>112,904</td>
<td>13,239</td>
<td>13.3%</td>
<td>100.00%</td>
</tr>
<tr>
<td>Lebanon Cty. 1990</td>
<td>127,859</td>
<td>14,955</td>
<td>13.2%</td>
<td>100.00%</td>
</tr>
</tbody>
</table>

Source: Computations by Lebanon County Planning Department

It should be noted that a population projection for a rural township can not be predicted with accuracy, since future population growth can be affected by a variety of factors. New highways, sewer lines, large scale housing development, new industries and other unforeseen occurrences can significantly alter a population projection. Therefore, projections for sparsely populated townships with large vacant land areas are at best educated guesses. For this reason, the population projection should only be used as a guide for planning for probable future development and needs. It should not be utilized as absolute figures on which to base detailed projections for specific needs.
ECONOMY

Historically, the analysis of the economy of a municipality has given us valuable insight into the potential for growth or decline. Millcreek Township exhibits a fair amount of economic activity, inspite of the predominantly rural nature of the area. Moreover, from all indications this activity has been increasing at a significant rate in recent years. This would seem to imply that Millcreek Township will show growth, or at the very least, stabilization in both the economy and population in the future.

The following analysis looks at the components of Millcreek's economy in more detail:

INDUSTRIAL ACTIVITY

One major manufacturer, two moderate sized industries, and six smaller businesses constitute the nine industrial concerns of Millcreek Township. With a total of 482 employees, these nine industries account for 78% of the 617 Millcreek residents employed in manufacturing of both durable and non-durable goods. The remaining 22% of the residents involved with manufacturing are in all likelihood employed in areas outside the municipality.

INDUSTRIAL ESTABLISHMENTS

<table>
<thead>
<tr>
<th>Industry</th>
<th>Manufacturer of-</th>
<th>No. of Employees</th>
</tr>
</thead>
<tbody>
<tr>
<td>North American Refractories</td>
<td>Refractory Brick for Steel Furnace Linings</td>
<td>334</td>
</tr>
<tr>
<td>Kountry Kraft Kitchens</td>
<td>Custom Kitchen Cabinets</td>
<td>50</td>
</tr>
<tr>
<td>Linden Manufacturing Co.</td>
<td>Ladies Blouses</td>
<td>40</td>
</tr>
<tr>
<td>K &amp; H Kitchens</td>
<td>Kitchen Cabinets</td>
<td>16</td>
</tr>
<tr>
<td>Rettew Automation, Inc.</td>
<td>Special Purpose Machinery Design and Fabrication</td>
<td>15</td>
</tr>
<tr>
<td>Rich Maid Kitchens</td>
<td>Portions of Kitchen Cabinets</td>
<td>12</td>
</tr>
<tr>
<td>Clement Brothers, Inc.</td>
<td>Refuse Collecting and Recycling Sell Cardboard</td>
<td>10</td>
</tr>
</tbody>
</table>

-31-
Industry Manufacturer of- No. of Employees
Former Lavino Property Custom Crushing and 5
(now 3 small industrial Bulk Storage Area
concerns under 1 ownership) Storage Warehouse
Flour Mill (abandoned)  

Total Employees 482  

Source: Direct contact with industrial establishments by the Lebanon County Planning Department

Industrial growth or decline is always a reliable indicator of the direction that the local economy is taking. From recent past history, it appears as though Millcreek's economy is strengthening since industrial employment has increased by a significant 60% from 1969 to 1975. The following table illustrates the changes that have taken place in Millcreek Township's industry since 1962:

INDUSTRIAL GROWTH AND CHANGE

<table>
<thead>
<tr>
<th>Manufacturing Establishments</th>
<th>No. of Employees</th>
<th>Change from:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flour Mill</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Linden Manufacturing</td>
<td>72</td>
<td>45</td>
</tr>
<tr>
<td>Kountry Kraft Kitchens</td>
<td>-----</td>
<td>21</td>
</tr>
<tr>
<td>Former Lavino Property</td>
<td>120</td>
<td>12</td>
</tr>
<tr>
<td>Diamond Plastic Co.</td>
<td>-----</td>
<td>5</td>
</tr>
<tr>
<td>Rettew Automation, Inc.</td>
<td>-----</td>
<td>8</td>
</tr>
<tr>
<td>North American Refractories</td>
<td>96</td>
<td>202</td>
</tr>
<tr>
<td>K &amp; H Kitchens</td>
<td></td>
<td>16</td>
</tr>
<tr>
<td>Rich Maid Kitchens</td>
<td></td>
<td>12</td>
</tr>
<tr>
<td>Clement Brother's Inc.</td>
<td></td>
<td>10</td>
</tr>
<tr>
<td>Total</td>
<td>289</td>
<td>294</td>
</tr>
</tbody>
</table>
It is important to note, however, that most of the industries in the township are vulnerable to downturns in the economy. The principle reason is that six of the nine industries produce durable, elastic goods. This means that products produced here are the type that usually do not wear out readily and tend not to be in continuous demand, particularly in a recession.

Since many Millcreek Township residents work in other communities in Lebanon County as well as in Berks County, it is apparent that the economy of these areas also affect the economic well being of Millcreek Township. For the most part, economic conditions in Lebanon and Berks Counties follow the trend of the national economy. However, both counties have strong, diversified economic bases that seem to withstand extreme fluctuations in employment and income. Currently, the economy in the Lebanon and Berks County areas is in a slump. This reflects economic conditions over the entire nation which is experiencing a recession.

Commercial Trade

There are thirty-seven commercial establishments in Millcreek Township that consist of a variety of home occupations and wholesale, retail, and service oriented businesses. Generally, Millcreek's commercial trade is comprised of the following:

<table>
<thead>
<tr>
<th>Type of Business</th>
<th>No. of Businesses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Restaurants and Taverns</td>
<td>4</td>
</tr>
<tr>
<td>Grocery stores</td>
<td>2</td>
</tr>
<tr>
<td>Automobile Service Stations</td>
<td>4</td>
</tr>
<tr>
<td>Beauty and Barber Shops</td>
<td>5</td>
</tr>
<tr>
<td>Retail Shops</td>
<td>8</td>
</tr>
<tr>
<td>Repair and Service Oriented Businesses</td>
<td>9</td>
</tr>
<tr>
<td>Nursery and Orchard</td>
<td>1</td>
</tr>
<tr>
<td>Commercial Recreation (campgrounds &amp; Fish Hatcheries)</td>
<td>4</td>
</tr>
</tbody>
</table>

Source: Existing Land Use Survey by the Lebanon County Planning Department.
The "commercial center" of Millcreek is the village of Newmanstown, with 20 of the 37 total commercial establishments located in the village and its immediate vicinity. Other smaller concentrations of commercial activity are Sheridan with 4 establishments, and Stricklerstown with two (2) establishments. The remaining eleven (11) businesses are scattered in more remote areas of the township.

Millcreek, itself, does not contain any shopping centers or large retail establishments. Residents, instead, must depend on the nearby urban areas of Lebanon, Reading, and Lancaster.

Characteristics of the Work Force

According to the U. S. Census Bureau, there were 1,156 persons in Millcreek's labor force in March, 1970. Of this number, 711 were males while the remaining 445 were females. It is interesting to note that 45% of the total population (2544) of the Township is in the labor force. This percentage compares similarly to the 44% of the total Lebanon County population that is in the labor force.

The following table indicates the types of employment by industry held by township residents and compares their distribution to the number of County residents employed in the same industries.
### EMPLOYMENT BY INDUSTRY, 14 YRS. AND OVER

<table>
<thead>
<tr>
<th>Industry</th>
<th>No. Employed</th>
<th>% of Total Employed</th>
<th>% of County Total Employed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agriculture, Forestry, &amp; Fisheries</td>
<td>93</td>
<td>8.1</td>
<td>3</td>
</tr>
<tr>
<td>Mining</td>
<td>4</td>
<td>.3</td>
<td>2</td>
</tr>
<tr>
<td>Construction</td>
<td>48</td>
<td>4.2</td>
<td>5</td>
</tr>
<tr>
<td>Manufacturing-Durable Goods</td>
<td>288</td>
<td>25.1</td>
<td>15</td>
</tr>
<tr>
<td>Manufacturing-Non-Durable Goods</td>
<td>329</td>
<td>28.7</td>
<td>26</td>
</tr>
<tr>
<td>Transportation</td>
<td>25</td>
<td>2.2</td>
<td>4</td>
</tr>
<tr>
<td>Wholesale and Retail Trade</td>
<td>123</td>
<td>10.7</td>
<td>15</td>
</tr>
<tr>
<td>Finance, Insurance, and Real Estate</td>
<td>0</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>Business and Repair Services</td>
<td>14</td>
<td>1.2</td>
<td>2</td>
</tr>
<tr>
<td>Personal Services</td>
<td>8</td>
<td>.7</td>
<td>3</td>
</tr>
<tr>
<td>Entertainment and Recreation Services</td>
<td>4</td>
<td>.3</td>
<td>1</td>
</tr>
<tr>
<td>Professional and Related Services</td>
<td>145</td>
<td>12.7</td>
<td>14</td>
</tr>
<tr>
<td>Public Administration</td>
<td>35</td>
<td>3.1</td>
<td>4</td>
</tr>
<tr>
<td>Industry not Reported</td>
<td>30</td>
<td>2.6</td>
<td>4</td>
</tr>
</tbody>
</table>

Source: 1970 U.S. Census 4th Count Summary Tapes representing a 20% Sample of the total population.

It is apparent from the table that the greatest percentage of workers in 1970 was employed in manufacturing (53.8%), which surpasses the total percentage of County workers employed in manufacturing (41%). This high percentage indicates that industry is vital to Millcreek's economy. Overall, the percentages of employment by industry for the township vary from the County in many categories. A significantly greater percentage of township residents were employed in agriculture and in the manufacture of durable goods than were employed in the remainder of the county. Conversely, a larger percentage of other county residents were employed in wholesale and retail trade, business and repair services, personal services, entertainment
and recreation, transportation, and mining. Overall, it is apparent that the greatest sources of employment for Millcreek Township residents are manufacturing, professional and related services, wholesale and retail trade, and agriculture.

The data for employment of township residents by occupation gives another perspective of the character of the local economy. Again these figures indicate the importance of manufacturing to the township.

### EMPLOYMENT BY OCCUPATION, 14 YRS. AND OVER

<table>
<thead>
<tr>
<th>Occupation</th>
<th>No. Employed</th>
<th>% of Total Employed</th>
<th>% of County Total Employed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Professional, Technical, &amp; Kindred Workers</td>
<td>86</td>
<td>7.5</td>
<td>8.8</td>
</tr>
<tr>
<td>Managers and Administrators, except farm</td>
<td>23</td>
<td>2.0</td>
<td>4.8</td>
</tr>
<tr>
<td>Sales Workers</td>
<td>46</td>
<td>4.0</td>
<td>5.8</td>
</tr>
<tr>
<td>Clerical and Kindred Workers</td>
<td>88</td>
<td>7.7</td>
<td>12.1</td>
</tr>
<tr>
<td>Craftsmen, Foremen, and Kindred Workers</td>
<td>153</td>
<td>13.4</td>
<td>15.3</td>
</tr>
<tr>
<td>Operatives, except transport</td>
<td>378</td>
<td>33.0</td>
<td>25.3</td>
</tr>
<tr>
<td>Transport Equipment Operatives</td>
<td>59</td>
<td>5.1</td>
<td>4.0</td>
</tr>
<tr>
<td>Laborers, except farm</td>
<td>66</td>
<td>5.8</td>
<td>4.8</td>
</tr>
<tr>
<td>Farmers and farm managers</td>
<td>65</td>
<td>5.7</td>
<td>1.5</td>
</tr>
<tr>
<td>Farm Laborers and foremen</td>
<td>23</td>
<td>2.0</td>
<td>1.4</td>
</tr>
<tr>
<td>Service Workers, except private household</td>
<td>129</td>
<td>11.3</td>
<td>11.1</td>
</tr>
<tr>
<td>Private Household Workers</td>
<td>4</td>
<td>.3</td>
<td>.8</td>
</tr>
<tr>
<td>Occupation Not Reported</td>
<td>26</td>
<td>2.3</td>
<td>4.1</td>
</tr>
</tbody>
</table>

Source: 1970 U.S. Census 4th Count Summary Tapes representing a 20% sample of the total population.

A large number of township residents are employed in occupations related to manufacturing such as operatives, craftsmen, and foreman. Service workers
also account for a significant number of the total employed. In comparison to other areas of Lebanon County there are far fewer people in Millcreek Township employed in clerical positions and managerial and administration type positions. Also it should be noted that there are a significantly greater percentage of people listing their occupations as farmers and as operatives than in other areas of the county.

It is difficult to determine the number of township residents who are actually employed by a business or industry within the municipality. However, a good indication of the amount of commuting to employment outside of the county and township is detailed in the table below:

<table>
<thead>
<tr>
<th>PLACE OF EMPLOYMENT</th>
<th>No. of Residents</th>
<th>% Total Residents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inside Lebanon County</td>
<td>672</td>
<td>58</td>
</tr>
<tr>
<td>Lebanon City</td>
<td>55</td>
<td>5</td>
</tr>
<tr>
<td>Remainder of County</td>
<td>617</td>
<td>53</td>
</tr>
<tr>
<td>Outside of Lebanon County</td>
<td>492</td>
<td>42</td>
</tr>
<tr>
<td>Dauphin County</td>
<td>18</td>
<td>1.5</td>
</tr>
<tr>
<td>Reading City</td>
<td>32</td>
<td>3</td>
</tr>
<tr>
<td>Remainder Berks County</td>
<td>340</td>
<td>29</td>
</tr>
<tr>
<td>Lancaster City</td>
<td>12</td>
<td>1</td>
</tr>
<tr>
<td>Remainder Lancaster Co.</td>
<td>71</td>
<td>6</td>
</tr>
<tr>
<td>Not Reported</td>
<td>19</td>
<td>1.5</td>
</tr>
</tbody>
</table>

Source: 1970 U.S. Census 4th Count Summary Tapes representing a 15% sample of the population.

Distribution of Income

Millcreek Township has a somewhat lower median family income (the 50th percentile where 50% of all families are above and 50% are below this amount) than the median family income for Lebanon County. The median for the county in 1969...
was $9,450 while the median for Millcreek was $8,523. The following table shows the actual distribution of Millcreek residents' incomes.

**FAMILY INCOME DISTRIBUTION - 1969**

<table>
<thead>
<tr>
<th>Family Income</th>
<th>No. of Families</th>
</tr>
</thead>
<tbody>
<tr>
<td>Under $1,000</td>
<td>0</td>
</tr>
<tr>
<td>$1,000 - $1,999</td>
<td>3</td>
</tr>
<tr>
<td>2,000 - 2,999</td>
<td>21</td>
</tr>
<tr>
<td>3,000 - 3,999</td>
<td>19</td>
</tr>
<tr>
<td>4,000 - 4,999</td>
<td>45</td>
</tr>
<tr>
<td>5,000 - 5,999</td>
<td>73</td>
</tr>
<tr>
<td>6,000 - 6,999</td>
<td>45</td>
</tr>
<tr>
<td>7,000 - 7,999</td>
<td>93</td>
</tr>
<tr>
<td>8,000 - 8,999</td>
<td>63</td>
</tr>
<tr>
<td>9,000 - 9,999</td>
<td>32</td>
</tr>
<tr>
<td>10,000 - 11,999</td>
<td>88</td>
</tr>
<tr>
<td>12,000 - 14,999</td>
<td>85</td>
</tr>
<tr>
<td>15,000 - 24,999</td>
<td>88</td>
</tr>
<tr>
<td>25,000 - 49,999</td>
<td>5</td>
</tr>
<tr>
<td>50,000 and over</td>
<td>4</td>
</tr>
</tbody>
</table>

**Total** 664

Median Family Income - $8,523.31

Source: 1970 U.S. Census 4th Count Summary Tapes representing a 20% sample of the population.

Current estimates of average family income, based on percentage increases in manufacturing wages and cost of living increases, are estimated to be the following:
CURRENT INCOMES

<table>
<thead>
<tr>
<th></th>
<th>1969*</th>
<th>1973</th>
<th>1975</th>
</tr>
</thead>
<tbody>
<tr>
<td>Millcreek Township</td>
<td>$9861</td>
<td>$12,550</td>
<td>$14,029</td>
</tr>
<tr>
<td>Lebanon County</td>
<td>$10,386</td>
<td>$13,218</td>
<td>$14,776</td>
</tr>
</tbody>
</table>

* actual 1970 U.S. Census figures

Generally, 1969 incomes of township residents were lower than that of the county average. Even though incomes tend to be low, this does not indicate that the residents are poverty-stricken. The percentage of families living below poverty level was actually much lower in Millcreek township than it was in the remainder of Lebanon County. The following table illustrates this fact:

RATIO OF FAMILY INCOME TO POVERTY LEVEL

<table>
<thead>
<tr>
<th>Ratio</th>
<th>No. of Families</th>
<th>% of Total Families</th>
</tr>
</thead>
<tbody>
<tr>
<td>Below</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Under .50</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Poverty</td>
<td>.50 - .74</td>
<td>3</td>
</tr>
<tr>
<td>Level</td>
<td>.75 - .99</td>
<td>0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Poverty Level</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Above</td>
<td>1.00 - 1.24</td>
</tr>
<tr>
<td>44</td>
<td>6.62</td>
</tr>
<tr>
<td>Poverty</td>
<td>1.25 - 1.49</td>
</tr>
<tr>
<td>20</td>
<td>3.01</td>
</tr>
<tr>
<td>Level</td>
<td>1.50 - 1.99</td>
</tr>
<tr>
<td>90</td>
<td>13.55</td>
</tr>
<tr>
<td>2.00 - 2.99</td>
<td>219</td>
</tr>
<tr>
<td>32.98</td>
<td></td>
</tr>
<tr>
<td>3.00 &amp; Over</td>
<td>288</td>
</tr>
<tr>
<td>43.37</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>664</td>
</tr>
<tr>
<td></td>
<td>100.00</td>
</tr>
</tbody>
</table>

Below poverty level in township - .5%

Below poverty level in Lebanon County - 4.6%

Source: 1970 U.S. Census 4th Count Summary Tape representing a 20% sample of the population.
COMMUNITY FACILITIES

Community facilities are those buildings, land, equipment, and whole systems of activity that exist to improve the quality of life for all residents of the Township. Some of these services are necessities while others are merely desirable for cultural or educational enrichment. Facilities that exist in Millcreek Township and are included in this study are municipal buildings, the fire protection system, ambulance service, police protection, educational facilities, recreational facilities, postal service, the library system, water and sewerage facilities, and utilities.

Township Municipal Buildings

Millcreek Township has two municipal buildings, the Millcreek Township Building and the Township Garage. The Township Building is located in Newmanstown on North Sheridan Avenue, 1 3/4 blocks north of Main Street. This building was originally constructed as a school in 1864 and was converted to the present Township building in 1972. Facilities in the building include the Township office and meeting room, the Millcreek-Richland Regional Police Department headquarters, and meeting rooms utilized by the Jaycees, Boy Scouts, Girl Scouts, 4-H, and the Recreation Association. Various governmental agencies also conduct their business from this building. The condition of the building is fair to good.

The Township Garage, located on the southeast corner of Park Street and Sportsman Road in Newmanstown, is used to store road maintenance equipment. This building was converted from a barn and is in fair condition.

Fire Protection System

Lebanon County is protected by a system of forty-four fire companies. The entire fire protection system is monitored by the Lebanon County Civil Defense office, located in the County-City Municipal Building. Many emergency fire calls in the county are received by the Civil Defense
Center, and from there are dispatched to the company or companies in the vicinity of the fire. Mutual aid agreements exist among all fire companies in the county. Therefore, in the event of a major fire, any number of fire companies may be relied upon to respond to fires in any section of the Township.

According to the American Insurance Association, a four-mile radius is judged to be the most distant point to which efficient and expedient fire protection service can be dispatched in suburban and rural areas. Close examination of the fire protection system for Millcreek Township reveals that five fire companies in Lebanon County cover Millcreek within their recommended four-mile service radius areas. These are the following: Myerstown Goodwill, Myerstown Keystone Hook and Ladder, Richland Neptune, Schaefferstown Volunteer #1, and Newmanstown Fire Companies. All areas of the Township are covered by a service radius area of one of these companies except for the extreme southwestern tip. However, this portion of the Township is sparsely populated and fire protection for this area should not be a matter of great concern.

Another minor problem with the fire protection system is the fact that the Civil Defense Center is a long distance call for many residents of the Township. For most residents, local fire calls are made directly to the Newmanstown Fire Company. However, the Newmanstown Fire Company has direct communications with the Lebanon County Civil Defense Center in case additional companies are needed to remain on standby or to respond to a fire. By 1977, when the new emergency communications system is completed, this situation will be rectified. At that time residents anywhere in Lebanon County will be able to contact the Civil Defense Center directly by dialing 911.
The only fire company actually situated within the Township is the Newmanstown Fire Company. It is ideally located in the population center of the Township on South Sheridan Road in Newmanstown. The firehouse was built in 1950 and is in good structural condition. In 1972 a 40 foot by 50 foot addition was constructed to the original building. Fire equipment owned by the company includes a 1967 John Bean high pressure truck with a 1,000 gallon tank; a 1950 Seagraves 750 gpm pumper truck with a 250 gallon booster tank; and a 1944 GMC 1,200 gallon water tank truck. Sixty-five volunteer firemen and seven fire police are on call to operate the equipment in the event of a fire emergency.

Ambulance Service

Millcreek Township is fortunate to have one of the nine ambulance corps in the county located within its boundaries. The Newmanstown Ambulance Corps, like the fire company, is conveniently located in Newmanstown, the Township's population center. The ambulance is also in close proximity to U.S. 422, a major traffic arterial, and the densely populated towns that have developed along this highway.

The ambulance, a 1966 Cadillac, is housed in the Newmanstown Fire Hall. Sixteen attendants with Advanced First Aid Training and two Emergency Medical Technicians are on call to man the equipment. Within the next year or two the corps hopes to order a new ambulance.
Police Protection

Police protection in Millcreek Township is provided by the Millcreek-Richland Regional Police, the Lebanon County Sheriff's Office and the State Police.

Most of the police work in Millcreek Township is handled by the local police department. The sheriff and his deputies are considered to be the highest ranking peace officers in the county, however, they do not take an active part in arrests and investigations unless requested by local and State Police. They are primarily concerned with civil work. The State Police are sometimes called in to assist the Millcreek-Richland Regional Police in emergencies. Generally, they offer support services such as laboratory analysis to the local police department.

The Millcreek-Richland Regional Police Department carries on all investigations in the Township. On the average they investigate 1900 incidents a year which includes 120 traffic accidents, 200 to 300 traffic violations and over 200 criminal arrests. Chief Charles M. David, of the police department, indicates that the current crime conviction rate for those arrested is 74%, while the department's uniform crime report clearance rate is 42%. The U.S. Uniform Crime Report indicates that the nationwide clearance rate, that is the percentage of crimes solved, is about 21%.

Presently, the police department employs four (4) full time police, ten (10) auxiliary police and one secretary to protect an estimated 4182 persons (1974 estimate) in Millcreek Township and Richland Borough. According to F. B. I. Standards, there should be 1.4 police officers per 1,000 population in communities with populations under 10,000. By utilizing this standard, we find that Richland and Millcreek should have nearly six (6) police officers. In view of this fact, it seems as though the police force is under-staffed, particularly when the recent ruling concerning auxiliary police is considered. Because of a recent Superior Court Decision, auxiliary police no longer have
the power to arrest. They can be used only in extremely limited circumstances such as riding with a full-time police officer or guarding at school functions, etc. Because of the decrease in police protection that has been brought about by this decision, Millcreek Township and Richland Borough officials should seriously consider hiring more police personnel. This consideration is particularly important in view of the fact that the incidence of burglary and theft is increasing significantly. In 1975, burglary and theft cases had increased 48% over 1974.

The local police department carries out its duties with the aid of two police cars. The department also has its own local base communications system and in addition is linked with the Lebanon County Civil Defense system by radio dispatch. As an added note of interest the police budget for 1975 was $49,000.00, a per capita expenditure of less than a dollar per month.
Educational Facilities

Millcreek Township along with Heidelberg Township, Jackson Township, Richland Borough, and Myerstown Borough make up the Eastern Lebanon County School District. Four elementary schools, one middle school, and one high school adequately serve the district. Only one facility, the Fort Zeller Elementary School, is actually located in Millcreek Township on Richland Road. It is a modern building that was constructed in 1972 to replace the obsolete Newmanstown, Millbach, and Richland Elementary Schools. All Millcreek Township elementary school students attend this school. It has eighteen (18) classrooms with a design capacity for 550 students. 1974-75 enrollment was 354 which indicates that the capacity of the school should be adequate for a long period of time if present population growth rates continue. Additionally the site size of 26.5 acres is more than sufficient for recreational needs and future building expansion.

Middle School students from Millcreek Township attend the recently constructed Elco Middle School which was completed in 1972. Located in Jackson Township it is on the same 46 acre tract with the High School. Thirty classrooms provide for a design capacity for 900 students. This facility is not nearly filled to capacity since during the 1974-75 school year the enrollment was 749.

Elco High School, constructed in 1962, is in very good structural condition. There are 23 regular class rooms and 30 special purpose class rooms in the building. As is the case in the other schools that serve the district, the student enrollment of 899 for the 1974-75 school year does not nearly reach the design capacity figure of 1,227.

Overall, it does not appear that any new school facilities will need to be constructed in the Elco School District in the near future. Most of the structures are new and modern facilities and none are close to being
filled to capacity. When considering present population growth trends and the falling birth rate, it does not seem likely that the student population will exceed the design capacity of the buildings for a long period of time.

Two private parochial school facilities are also located in Millcreek Township. Both are operated by the Mennonite Church for church members who do not wish to send their children to public school. The older of the two buildings is located near Millbach Springs on the Schaefferstown Road. The newer facility which had been the Millbach Elementary School until 1972 is also located on Schaefferstown Road in the Village of Millbach.

Recreational Facilities

Of the nearly 302 acres of recreational land in Millcreek Township there are 12 acres devoted to public recreation, 235 acres for semi-public recreation, and 54.5 acres in private recreation uses.

Public recreational facilities which are open to the general public, are owned and maintained by the State, County, Township or recreation association. There are two public parks in the Township located in the Village of Newmanstown. Millcreek War Memorial Park is located in the eastern portion of the town at the intersection of Ash Street and Memorial Boulevard. It is a 1.36 acre tract owned and maintained by the Township. A passive recreation area, it has many trees and park benches. The Newmanstown Athletic Association Playground, located in the western sector of town at Prospect Road and Park Street, has facilities for more active recreational pursuits. A ball field, a band-shell with a stage, and two picnic pavilions are available on this 10.6 acre parcel. During the summer months, many baseball leagues play on the ball field. This particular facility is owned and maintained by the Newmanstown Athletic Association.

Five semi-public recreational facilities in the Township are open to the public on a fee basis. These are the Newmanstown Lion's Club Swimming Pool,
the Krystal Kleer Trout Hatchery, and three camp grounds.

The Newmanstown Lion's Club Swimming Pool is located on a 2½ acre tract south of Newmanstown on Stricklerstown Road. Other facilities on the site include a picnic pavilion and a volleyball court.

Krystal Kleer Trout Hatchery provides fishing and picnicking from March to October. It is situated on a 121 acre parcel on Bethany Road south of Newmanstown.

Three camp grounds, Eagle's Peak, Shady Oaks, and Cocalico Camp Grounds, offer rental spaces to travelers with motor homes and travel trailers. Almost 111 acres of land in the South Mountain area are occupied by these campgrounds.

Only one private recreational facility, the Millcreek Rod and Gun Club, is located in the Township. It is a hunting and fishing club opened on a membership basis only. The location is on a 54½ acre tract near Stricklerstown in the South Mountains. Members operate a fish hatchery during the summer months for the purpose of stocking the Mill Creek.

Postal Service

There is one post office (17073) located in the Township at the corner of Main Street and Sheridan Road in Newmanstown. It is conveniently located at the crossroads of two main streets in the major population center of the Township. The building is not used solely as a post office facility since there are apartments located on the second floor.

Library System

There are no library facilities located within Millcreek Township but this is not considered to be a critical problem since the population of the Township is not large enough to support a facility of its own. The nearest library for Millcreek residents is the Richland Community library. Located
on Main Street in Richland Borough, it is only a \( \frac{1}{2} \) mile to 5 mile drive away for any Millcreek resident.

As is the case with every other library in the County, Richland's library is slightly deficient in the number of book volumes and the floor area that is recommended by the American Library Association. Even though the library does not quite meet the suggested standards it is considered to be sufficient for the estimated 4,000 people that it serves.

Township residents may also utilize the book-by-mail service which is provided by the State Library of Pennsylvania in Harrisburg. Through this service township residents who are unable to use community library facilities may order and receive books through the postal service.

**Water and Sewer Facilities**

The availability of adequate water and sewerage facilities is essential for the future development of the Township. The location of these facilities almost dictates which areas of the Township will be developed in the future, since business and industry as well as residential developers always find it desirable to be served by reliable public water and sewer.

All areas of Millcreek Township with existing industrial and high density residential development are served by public water systems. Three separate water companies, the Richland Borough Company, the Newmanstown Water Authority, and the Womelsdorf-Robesonia Joint Water Authority, are presently serving the Township. There are no plans to expand the water service areas in the near future since all vital areas are adequately served at this time.

The Richland Borough Water Company has its source on the ridge of the South Mountain immediately south of Stricklerstown. Three wells, and two springs supply the 0.250 million gallon reservoir on the side of the mountain. An eight inch main supplies the eastern portion of Stricklerstown and the farms and residences along the main as it follows Millbach Road into the Borough of Richland.
All properties in the Village of Newmanstown as well as businesses and residences along South Sheridan Road are served by the Newmanstown Water Authority. One well and five springs located on the South Mountain directly south of the Village supply the 0.085 million gallon reservoir that serves this water system.

The water supply for the Womelsdorf-Robesonia Joint Water Authority is located on the South Mountain ridge directly east of the Newmanstown Water Authority reservoir. The 0.150 million gallon Robesonia reservoir is supplied by one well. This water system supplies the entire Village of Sheridan as well as nearby towns in Berks County.

It is quite apparent that the South Mountain ridge is a very important watershed area for Millcreek Township as well as other municipalities in the region. For this reason it is essential that this valuable water supply area be protected from any development that might pollute it.

Currently, no public sewerage system exists in Millcreek Township. However, within the next five years it is expected that all sections of Newmanstown and Sheridan will be serviced with a sewerage system. All sewage will be carried to the Myerstown Sewerage Treatment plant by force mains. The construction of sewage facilities will permit more industry and higher density residential development to take place in these communities.

Since 66% of the soil in the Township is considered to be marginal or unsuitable for on-lot sewage disposal, it is recommended that the sewer lines be extended to other areas of the Township in the next ten to twenty years. Areas that would most likely be densely developed and require sewerage by that time would be Stricklerstown and the outskirts of Newmanstown.

Utilities

Gas Service - Gas service is provided by the Reading Division of the United Gas Improvement Corporation.
**Electric Service** - Millcreek Township residents receive electric service from the Pennsylvania Power and Light Company, whose regional office is located in Lancaster County.

**Telephone Service** - Telephone service in Millcreek Township is provided by the Bethel and Mt. Aetna Telephone and Telegraph Company, a subsidiary of General Telephone and Electronics. Exchanges in the township are Womelsdorf (589) which serves the eastern sector of the Township and Schaefferstown (949) which serves the western sector. The area code for Schaefferstown is 717 while Womelsdorf is Area Code 215.
EXISTING CIRCULATION NETWORK

Introduction

The evaluation of the existing circulation network is a vital element in the formation of a meaningful comprehensive plan. America's dependence on a safe, efficient transportation system, particularly by the automobile, has compounded the importance of adequate circulation planning. Especially important is the coordination of the circulation system with the overall development scheme of the municipality. Since the automobile has become the major means of transportation, this circulation study of Millcreek Township will be primarily limited to the roads and streets within the township.

Classification and Condition

Three categories are generally applied to roadways - arterials, collectors and locals. These can be defined as follows:

<table>
<thead>
<tr>
<th>TYPE</th>
<th>DEFINITION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arterial</td>
<td>Normally a continuous route, functioning to move traffic quickly and safely great distances; it should be a limited access or divided highway.</td>
</tr>
<tr>
<td>Collector</td>
<td>A route serving to gather traffic from roads and carry it to and from arterial highways and local traffic generators (i.e. business centers, schools, public buildings, industrial areas, etc.)</td>
</tr>
<tr>
<td>Local</td>
<td>A road providing for access and easement for utilities and private properties.</td>
</tr>
</tbody>
</table>

The following table lists street width standards now required in the Lebanon County Subdivision Regulations. They serve as guides to roadway adequacy.

<table>
<thead>
<tr>
<th></th>
<th>Cartway</th>
<th>Right-of-way</th>
</tr>
</thead>
<tbody>
<tr>
<td>Local</td>
<td>26'</td>
<td>50'</td>
</tr>
<tr>
<td>Collector</td>
<td>34'</td>
<td>60'</td>
</tr>
<tr>
<td>Arterial</td>
<td>*</td>
<td>80'</td>
</tr>
</tbody>
</table>

* Width reached through agreement between Planning Department and State Highway Department.
According to these standards, even local roads should have cartways of 26' width. These guidelines are aimed at facilitating future County growth, and as such, may not give a true picture of the necessary minimum road width being generally regarded as safe for two lane traffic.

While Millcreek Township does not have highways located within its boundaries which can be classified as arterials, the township is not completely isolated. Major highways which serve Millcreek residents include the Pennsylvania Turnpike, located fifteen (15) miles south of the township, and U.S. 422, also an east-west roadway, located two (2) miles to the north. Major north-south access is provided by Pennsylvania Route 501, west of the township.

Only two (2) collector routes exist in the township, Pennsylvania 419 which serves as a main route between Schaefferstown, Newmanstown, and Womelsdorf, Berks County; and L.R. 38011/38014 which serves to connect the communities of Newmanstown and Richland. Pennsylvania 419 extends some 5.9 miles from the Heidelberg Township line to the Berks County line with an existing surface width of 16 to 36 feet. The average daily traffic volume (ADT) ranges from 120 to 2780 vehicles per day. The heaviest flow in the township occurs on Main Street in Newmanstown.

The existing road surface on Pennsylvania Route 419 varies from deteriorating from the western township line to the Millbach area, to good through Millbach and Newmanstown to the eastern township line. Insufficient road width (the suggested width is 34 feet exclusive of parking lanes) and poor visibility on curves and intersections tend to create hazardous road conditions. In particular these hazardous conditions include (1) the narrow bridge east of Millbach, (2) driving maneuverability problems due to the narrow cartways and on-street parking in Newmanstown, and (3) several blind curves and blind intersections along this road.
Some 1.8 miles of L.R. 38011/38014 extend from Richland Borough to Main Street, Newmanstown. This collector has an existing surface width of 14 to 20 feet and carries an ADT of 640 to 1970 vehicles per day in the Sheridan area. While the road surface is adequate, the intersection of L.R. 38014/38011 and T-620 is extremely hazardous with regard to the steep road grade, curves and dog-legged intersection. In addition, the existing paved cartway falls short of the suggested 34' in the Lebanon County Subdivision Regulations.

The remaining roadways within the township serve as local roads used primarily for short distance low speed travel. The more important of these include portions of A1119, L.R. 38014 (south of Newmanstown) L.R. 38012, L.R. 425, T-620, T-612, and T-361.

The majority of these roads are in poor or deteriorating condition, with substandard cartway widths of 14 to 16 feet and several hazardous, blind curves. However, since the ADT volume on these roads is minimal, the widening of these roads to the required 26' is not an immediate concern but should be considered as the township develops. These routes complete the discussion of the most travelled roadways within the circulation network of the township.

**Accident Survey**

An examination and investigation of traffic accidents in this transportation system in conjunction with traffic volumes, road conditions, and road widths, is helpful in determining where the most congested and hazardous roadways in Millcreek Township exist. Accident reports and records have been compiled by PennDOT that can help us to locate dangerous road conditions and to determine remedies for such conditions.

Data for this survey has been compiled from the Annual Traffic Accident Statistics Log (1969 - 1974) released by the Bureau of Traffic Engineering of PennDOT. The results of the compilation have been recorded on the Map
on page 55, which pinpoints accident locations on state roadways in Millcreek Township for the period 1969 to 1974. During this period a total of 114 accidents occurred on state roads in the township. Fortunately, there were no fatalities and only 38 injuries suffered in these accidents.

It becomes apparent after studying the map that certain roads, road sections and intersections seem to be definitely accident prone. These hazardous roadways by degree of danger are listed as follows:

1. One of the most hazardous areas in the township is the intersection of L.R. 38011/38014, and T-620, located just north of Newmanstown. This dog-leg intersection has been the site of some fifteen (15) accidents during the period 1969-1974. Visual obstructions in the form of guard-rails, trees, brush, and a mill hinder the clear sight distance for vehicles entering L.R. 38011/ L.R. 38014 from the north and south. In addition, L.R. 38011/ L.R. 38014 as it extends to the east and west of the intersection is steeply sloped as well as curved in both directions, thus making this heavily travelled collector hazardous to vehicles travelling east and west.

   It appears from the Accident Log provided by PennDOT that the major cause for accidents at this intersection during daylight hours is proceeding without clearance, while travelling above a safe operating speed is the major cause of accidents after dusk. It is obviously unfeasible to realign this intersection at present, however, careful consideration should be given to the placement of warning signs, etc. to clearly mark this hazardous intersection and to the removal of any obstructing vegetation, etc. wherever possible.

2. Another problem area in the township is along Main Street in Newmanstown. Since parking is allowed on both sides of the 34 foot to 36 foot cartway, many of the accidents taking place involve parked vehicles. In fact, 14 of the 28 accidents charted during 1969-1974 and
MILLCREEK TOWNSHIP

TRAFFIC ACCIDENT LOCATIONS

AND

SUGGESTED ROAD IMPROVEMENTS

SCALE 1" = 4000'

Prepared by
Lebanon County Planning Department
that occurred between T-626 and the Reading Railroad Bridge, involved either stationary parked vehicles or vehicles attempting to leave parking spaces. This situation indicates that provisions should be made to eliminate as much on-street parking as possible in order to safely handle the present traffic volume, which is already beyond the capacity of the existing cartway width. In addition, when crossing or pulling onto Main Street, the clear sight distance is hampered by parked vehicles on both sides of the street.

3. The remainder of accidents charted on the map resulted from a whole host of variables from hazardous weather conditions to operation of a motor vehicle above a safe speed to proceeding without clearance. In the case of L.R. 38015 and L.R. 38055, the six accidents occurring on these roads were the result of operation of a motor vehicle above a safe speed on the curved roadway. Intersections at Route 419 and T-620; L.R. 38051 and T-610; L.R. 38012 and T-361; L.R. 38012 and T-604; and All19 and T-600 are apparently accident prone because of poor design or because brush, trees or other vegetation have been allowed to encroach upon the clear sight triangle of the intersection.

In conclusion, it should be noted that one of the most obvious deficiencies of a rural transportation system is the narrowness of the cartway and the seemingly open nature of the roadway. In cases such as this, the motorist often exceeds safe operating speeds on infrequently travelled roads only to find himself forced off the narrow, curving road by other similarly travelling vehicles. In some cases he may find himself failing to cautiously stop at obscure rural intersections and proceed without proper clearance. In the circulation plan of this study we will examine possible solutions to the problems that have been identified in this Section.

-56-
GOALS AND OBJECTIVES

Millcreek Township is, for the most part, a rural Township since nearly 90% of the land area is undeveloped. Because of the potential for growth in this relatively "untouched" region that lies between Lebanon and Reading, it is vital that goals and objectives for future development be established. Already development has occurred in an unsuitable and haphazard manner. This trend must be discouraged so that Millcreek Township will be developed in such a manner that a desirable environment for living will be maintained.

The following goals and objectives have been established by Millcreek Township as guidelines for promoting orderly growth and development in the future.

1. **Protection and Preservation of Agricultural Land** - Agricultural land must be conserved as a potential source of food supply for future generations. The preservation of Millcreek's farmland is particularly important since nearly 60% of all soil in the Township is considered to be good to excellent for cropland. To prevent indiscriminate and wasteful use of this valuable cropland, scattered development should be discouraged in prime agricultural areas. Instead, development should be encouraged to take place in areas where concentrations of development have already been established near facilities that are available to support them. As the demand for developable land continues to grow, it will be necessary to open up additional land areas for development after careful study of the value of existing land use. In addition, it should be mentioned that the preservation of agricultural land will assure the availability of a large amount of open space in the Township.

To summarize the importance of farm land, agricultural uses in the Township should be encouraged for the following beneficial reasons. First of all, agricultural land uses generally require fewer services per tax
dollar than other uses. Secondly, the farms in the Township serve as a
source of employment for many residents. Third, farm land offers
aesthetically pleasing open space. Fourth, on farms that practice soil
conservation as recommended by the County Conservation District, there
is improved ground water absorption and less water runoff during rain-
storms. Finally, farm land serves as a source of food and recreation for the
hunter since it is prime pheasant hunting land.

2. Preservation of Open Space and Aesthetically Appealing Wood Lands

The preservation of open space is vital if future generations are to
enjoy the beauty of scenic open lands, attractive wooded areas and the
gently rolling terrain characteristic of central Pennsylvania and
Millcreek Township. Millcreek has large expanses of attractive farm-
land and aesthetically pleasing wooded regions in the South Mountains.
Though areas such as these are now abundant in the Township, they must
be protected from indiscriminate development in order to insure their
future existence.

3. Conservation and Preservation of Flood Plain Areas and Other
Ecologically Sensitive Areas - Streams and waterways are valuable
natural resources that are ecologically sensitive to development.
Encroaching development in the flood plains of these streams can have
serious consequences, since it tends to create erosion and water
pollution problems, increases in flood elevations, human suffering from
lose of life or property due to floods, and the extraordinary and
unnecessary expenditure of public funds for floor protection and relief.
All of these problems can be avoided if development is restricted or
prohibited in flood-prone areas.

In order for Millcreek Township residents to remain eligible for
Federal flood insurance, the Township will be required to enforce some
type of flood plain management program. The Department of Housing and
Urban Development through the Federal Insurance Administration have assigned engineers to the project of designating the bounds of the one-hundred year flood in Millcreek Township.* When the results of this flood insurance study are completed, regulations for a flood plain district should be instituted into the Zoning Ordinance so that restrictions can be placed on new construction in the flood prone areas.

In the future, increased surface runoff water from new development in the Township may cause the identified one-hundred year flood plain to widen. For this reason it is essential that a periodic review be conducted to discover the amount of new development taking place and its probable effects on the identified flood plain boundaries. Any indicated widening of the one-hundred year flood would warrant widening of flood plain zoning district bounds so that regulations can be enforced to prevent development from taking place in newly created flood-prone areas.

Another ecologically sensitive area in the Township that must be protected is the perched water table on the South Mountain. Several wells and springs on this mountain supply over half of the Township population, as well as Richland Borough, Womelsdorf Borough and Robesonia Borough with public water. Any development that would threaten to pollute this valuable water supply should be prohibited or strictly regulated. It may be prudent to place restrictions on any type of development on the central and eastern portion of the mountain where the water supply is generated.

4. Promotion of Orderly Growth and Development - Land is a valuable and limited resource that should be used wisely. For this reason wasteful

* The One-Hundred Year Flood is the flood that has a 1% chance of occurring in any year.

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development practices must be discouraged. The current trend towards haphazard and scattered development uses up more valuable farmland and open space than if development would be concentrated.

Scattered development usually occurs as strip development on single lot depths along local and collector roads. This type of development may create many problems since it generally creates a need for improved and extended road systems in outlying areas of the Township; encourages additional development, perhaps even large scale development, to take place in scattered, far-reaching areas; and generates traffic problems when several driveways have access points on collector roads.

Ideally, development should take place near existing population centers such as Newmanstown, Sheridan, and Stricklerstown. By encouraging development to be concentrated, utilities and community facilities can be more economically and feasibly provided. Costs for these services increase when electric lines, water and sewer lines, and roadways must be extended to accommodate scattered development.

Residential development in particular should take place in well placed developments that are designed to accommodate the greatest number of homes in the least amount of space. There should be no through streets, but only local curvilinear streets that serve local residents and discourage fast moving through traffic.

If the recommendations for orderly growth are followed, the Township will develop in a logical and efficient manner and agricultural land and open space will be protected.

5. Provision for Adequate Community Facilities - Availability of community facilities is an important concern of all property owners in the Township. Industrial and commercial establishments are dependent
on adequate water supplies and sewage disposal systems as well as fire and police protection. Residential property owners are concerned about these same services, but in addition, they look for amenities such as a good educational system, library facilities, and recreation areas.

Generally, new development is attracted to areas of a municipality that can offer the convenience of community services. In Millcreek Township, Newmanstown and Sheridan are adequately served by most of the desired community facilities with the exception of sewerage. However, sewerage facilities will be available in these villages by 1980. Because development of any kind depends on community facilities to improve the quality of life, as well as to provide safety and protection, it is recommended that new development be encouraged to locate in close proximity to these services.

6. **Control of Land Uses** - Adequate control of land uses must be established since certain types of uses are not compatible with each other. In order to determine which areas of the Township are suitable for various land uses, existing land use patterns must be studied in relation to transportation facilities, community facilities, and physical features. Then after suitable areas can be identified for agricultural, residential, commercial, and industrial uses, ample land area should be designated where each specific use is to be promoted. By encouraging development to occur in a planned and orderly fashion, all land uses will be so oriented that they will be able to co-exist compatibly.

7. **Preservation of Historical Amenities** - Millcreek Township was on the fringe of one of the first German settlements in Central Pennsylvania. In 1720, the German settlers arrived to establish themselves along the Tulpehocken Creek on the western border of Berks County. Many old, historic buildings that were erected by these settlers still remain.
Six well-preserved sites in Millcreek, dating from 1745 to 1861 have been listed by the Historic Preservation trust of Lebanon County as significant historic sites. In fact, two of these sites, the House of the Miller and the attached mill, as well as Fort Zeller, are listed on the National Register of Historic Places. The land use survey of the Township indicates that there are probably several more historic structures that are obscure and have not been "discovered". It would seem to be worthwhile to study many of the old limestone buildings in the Township to determine if they have any historic significance that would warrant their preservation.

The historic sites and structures in Millcreek Township reflect its rich heritage. Some of these structures are also architecturally significant. Therefore, it is vital that measures be taken to assure the preservation of these sites so that future generations can enjoy and appreciate the history of this area.

8. Conservation and Preservation of Natural Resources and Land Resources - Millcreek Township has many valuable natural and land resources that must be preserved and protected against indiscriminate uses and development. First of all, conservation practices must be instituted to preserve the watershed area of South Mountain as well as the many streams that are potential recreation areas and are presently enjoyed for fishing. Secondly, development should be discouraged in certain areas of the Township in order to preserve farmland which is a source of food, and forests and wooded areas that are habitats for wild game, potential sources for future timber supplies and potential recreation areas. Finally, measures must be taken to prevent widespread open pit mining on South Mountain where large formations of Hardyston Quartzite exist. Quartzite is a source of sand and stone for the
building trades, but it has been utilized here in the manufacture of fire bricks. Presently, a large open pit scars the side of South Mountain near Eagle's Peak.
COMMUNITY FACILITIES PLAN

Population growth coupled with expanding development is expected to place increasing demands on community facilities in the future. Consequently, existing and proposed community facilities must be evaluated to determine if they will be adequate to meet future needs. Presently no major changes are anticipated for any of the existing facilities with the exception that a sewage system will be constructed before 1980. However, the following few changes and potential inadequacies should be examined:

**Municipal Building**

The Millcreek Township Building was recently converted from the Newmans-town Elementary School. Because the building was constructed in 1864 it may soon need to undergo major structural repairs. In addition, remodeling should be considered to modernize the building. It is not recommended that a new building be constructed at this time since the existing structure is in fair to good repairable condition and offers plenty of space to accommodate all activities. Therefore, a new building would not be economically feasible.

The township garage, however, has been converted from a barn and is in fair condition. Plans should be made to replace this building within the next ten to fifteen years as the township budget can absorb the cost.

**Fire Protection**

Almost all areas of Millcreek Township are adequately protected by five fire companies. Each of these companies serve Millcreek Township within the American Insurance Association's recommended four-mile service radius. The only exception is the southwest corner of the township on the Heidelberg Township and Lancaster County Line. Currently, there is not much development in this area so that inadequate fire protection should not be a matter of great concern. However, if this small sector of the township should develop significantly, the establishment of a new fire company should be considered to protect the area. Feasible locations for the new company might be Stricklers-town or Kleinfeltersville in Heidelberg Township.
Ambulance Service

Ambulance service for Millcreek Township residents is very adequate since the Newmanstown Ambulance Corps is ideally located in the population center of Newmanstown. The only recommended improvement is that more of the ambulance attendents qualify as Emergency Medical Technicians. By having more than two EMT's, the corps would be sure to have at least one technician on duty at all times to offer better medical assistance to save more lives.

By 1977, ambulance service in Lebanon County will be vastly improved by the new emergency communications system that is being installed. At that time each ambulance in the County will be equipped with a radio that will link communications with the Hershey Medical Center, the Good Samaritan Hospital, Lebanon Valley General Hospital, and Reading hospitals.

Police Protection

Presently the Millcreek-Richland Regional Police Force has four (4) full-time and ten (10) auxiliary police. According to F.B.I. Standards, there should be 1.4 police officers per 1,000 population which would amount to six (6) full-time police officers to adequately protect Richland Borough and Millcreek Township residents.

Millcreek Township and Richland Borough officials would be wise to consider hiring one or two additional full-time police since Superior Court has taken away the power of arrest from the auxiliary police. This decision has actually decreased the strength of the police force. The need for additional police protection will probably also be mandated by the increasing crime rate.

Educational Facilities

Within the past ten years the Eastern Lebanon County School District constructed three new buildings to replace inadequate structures and to upgrade the school system. Presently, all facilities are more than adequate. Furthermore, the student population is not expected to exceed the design capacity of the buildings for quite some time. As a result, there are no plans for
expansions or improvements to school facilities.

**Recreational Facilities**

Millcreek Township has a more than adequate amount of recreational land to serve its residents. Standards that the Planning Department accepts as a rational goal are 25 acres per 1,000 population. Accordingly, the January 1975 population estimate of 2,690 would indicate that the township should have 67 acres of recreational land. However, the 301.85 acres that Millcreek Township has devoted to recreational uses far exceeds this recommended standard.

A new recreation facility is planned for the Township on the eastern portion of the 8.3 acre parcel occupied by the Township Municipal Building. The Township Recreation Committee has decided to establish a baseball field, football field, tennis courts, quoit courts, and a passive recreation area with picnic tables on this site. Construction is expected to take place in two phases. Phase one will be completed in 1976 while phase two will occur in 1977.

There is one facility in the township that should consider an additional improvement. Since the Newmanstown Athletic Association Playground has provisions for picnics it would be desirable to have playground equipment as an added facility for the young age group to enjoy.

**Water and Sewer Facilities**

The importance of water and sewerage facilities can not be underrated when planning for future development; since any type of intensive development of the land depends on the availability of water and sewer systems.

Currently, water facilities serve the population centers of Newmanstown, Sheridan, and part of Stricklerstown. There is only one known deficiency in the system and that is the fact that the water lines that serve the Newmanstown Water Authority are antiquated and should be replaced.

In the future, extension of water service should be considered for the
high growth areas south of Newmanstown and in the Stricklerstown area as well. Water service could feasibly be extended to these areas since water mains from the Newmanstown Water Authority and the Robesonia-Womelsdorf Joint Water Authority pass through the area south of Newmanstown; while mains from the Richland Borough Water Company pass through Stricklerstown. Millbach is another potential growth area that could feasibly be served by the Richland Borough Water Company.

Construction is expected to begin on the much needed sewerage system by 1978. The area to be served will include the densely populated communities of Sheridan and Newmanstown.

In the future, extension of sewerage service should be seriously considered as additional development takes place in the area surrounding Newmanstown and Sheridan. Extension of sewer lines to the Stricklerstown area may also be warranted if that area continues to develop.

The extension of sewerage facilities to these high growth areas is particularly important since much of the soil is marginal for on-lot sewage disposal systems. In addition, there is the danger that failure of on-lot sewage disposal systems in these areas will in all probability contaminate ground water supplies.

While it may not be economically feasible to extend sewer lines for a long period of time, it is physically possible to include the area surrounding Newmanstown and Sheridan as well as the Stricklerstown area in the sewerage system since all of these communities are in the same drainage basin. However, if numerous on-lot sewage disposal systems fail in these communities, a serious effort should be made to include the effected areas in the sewerage system at the earliest date possible.
The Future Land Use Plan has been formulated as a guide for promoting orderly growth and development in Millcreek Township. Generally, it outlines and describes recommended development patterns and trends that future growth should follow. It also serves as the foundation for developing a township zoning ordinance.

Several factors were taken into consideration in the process of formulating this plan. In fact, much of the information utilized was taken from the Background Studies. Primary factors that were considered in developing the plan were the following:

1. **Physical Limitations** - Features that are deterrents to development such as flood-prone areas, land areas with slopes in excess of 20%, soils that are unsuitable for development, and the ecologically sensitive South Mountain water regeneration area are not recommended for development.

2. **Existing Land Use** - Existing land use trends were generally encouraged to continue to develop as they had in the past and were expanded upon on the land use map as long as they were thought to be compatible with other surrounding uses.

3. **Availability of Water and Sewerage Facilities** - Areas of the Township that will have water and sewer service are considered to be prime developable areas. As a result they were considered as suitable for intensive development purposes such as industrial and high density residential uses.

4. **Location of Transportation Facilities** - The location of highways and rail lines was considered when recommending the best location for all land uses but particularly industrial and commercial uses.

5. **Land Use Trends in Adjacent Municipalities** - It has always been considered good planning practice to examine land use trends in surrounding municipalities. Consideration of land uses along Township
lines will offer assurance that conflicting land use patterns will not develop at municipal boundaries.

**Land Use Categories**

Ten categories of future land use have been designated for Millcreek Township. They consist of the following: 1) Agriculture, Sporadic Residential Development, and Undeveloped Land, 2) Low Density Residential, 3) High Density Residential, 4) General Commercial, 5) Neighborhood Commercial, 6) Industrial, 7) Recreation and Open Space, 8) Institutional, Public, and Semi-public, 9) Conservation-Flood Plain, and 10) Conservation-Watershed. The description and color codification of each use is provided in the following outline:

1) **Agriculture, Sporadic Residential Development, and Undeveloped Land** (Uncolored on the Land Use Map) - Two general land types have been placed in this category. The first is prime agricultural land and the second is land that is not conducive to development.

Since farming is an important industry in Millcreek Township, it is essential that agricultural land be preserved. The value of this farmland is documented by the fact that 60% of the soil in the Township is considered to be good to excellent for cropland. To preserve farmland, it is recommended that development be discouraged throughout the agricultural area. The principal reason is that the large residential lots required to accommodate on-lot water and sewer systems tend to fragment valuable farmland and put many acres of land out of production.

Much of the agricultural area is not conducive to development for one or more of the following reasons: 1. no proposed water or sewer facilities, 2. limited availability to transportation systems, 3. lack of nearby community facilities, 4. excessive slope in the South Mountain area or, 5. severe soil limitations in the area north of Stricklerstown Road. Because of these factors
and the lack of "urban amenities", these particular areas will, in all probability, continue to be utilized for agricultural and scattered residential development purposes.

2) **Low Density Residential** (Yellow on the Land Use Map) - Low density residential development has been designated for areas of the Township that may feasibly be served by water and sewer facilities at some future date and have no physical deterrents to development.

Two areas of the Township have been designated low density residential on the land use map. The largest area which is south and southwest of Newmanstown is the area where new residential development has been concentrating. The other area of the Township, a small section adjacent to Richland Borough, has also been designated as low density residential. Residential uses are justifiable for this area since the land use designation in Richland Borough at this boundary line is also low density residential.

By 1990, it is estimated that there will be 532 more residents in Millcreek Township than there were in 1975. By utilizing the average 3.18 persons per household figure in Millcreek Township from the 1970 Census, it can be estimated that there will be approximately 167 additional households by 1990. Assuming that 70% of these new households will locate in the low density residential area, there will be a need for at least 120 acres of land to accommodate these new homes on one acre building lots. The land designated as low density residential on the land use map provides for approximately 700 acres of undeveloped land that can be subdivided into building lots.

3) **High Density Residential** (Orange on the Land Use Map) - High density residential uses have been recommended for areas that are currently developing residentially, are in the planned sewer area, are served by public water, and have no physical deterrents.

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On the future land use map Newmanstown and Sheridan serve as the nucleus for the high density residential area. This is a logical development scheme since land designated for future high density residential development surrounds or radiates from the existing high density residential area.

By 1990, it is estimated that there will be a demand for 50 additional housing units in the high density residential area. This estimate has been calculated from the 1990 population projection (see Low Density Residential section). It assumes that 30% of the estimated 167 additional households that will be established by 1990 will locate in the high density residential area. Approximately 10 to 25 acres of land will be required to accommodate these new units. According to the future land use map, 245 acres of undeveloped land are being designated for high density residential uses.

4) **General Commercial** (Red on the Land Use Map) - Ideally, commercial uses are located in population centers as well as near major transportation routes. In Millcreek Township most of the commercial establishments are conveniently located in the population center of Newmanstown. The major center of commercial activity exists around the intersection of the two collector streets of Sheridan Road and Main Street. While there is little or no off-street parking available in the center of Newmanstown, this location is still considered ideal for commercial uses because it is situated on a main thoroughfare and there is an existing concentration of businesses.

5) **Neighborhood Commercial** (Pink on the Land Use Map) - Neighborhood Commercial uses are convenience type establishments such as gas stations, small grocery stores, or personal service shops usually located in areas of residential concentration.

Stricklerstown, a major residential concentration in the Township, would in all likelihood be able to support and benefit from the convenience of a neighborhood commercial area. It was felt that commercial uses would be
feasible in this location for three principal reasons. First of all, Strickerstown is in the high growth area of the Township. In recent years, development has been concentrating in this section of the Township and this trend is expected to continue. Secondly, the area proposed for the neighborhood commercial uses is located on a well travelled roadway. Finally, there are two businesses already located in the area designated neighborhood commercial on the future land use map. An auto repair shop and a kitchen cabinet fabricating business have already established this as a commercially oriented area.

One other area of the Township on the extreme western end of Newmanstown at the intersection of Main Street and Fort Zeller Road, has been designated for neighborhood commercial uses. This small commercial area is currently occupied by two convenience type businesses, a former gas station and a restaurant. This is considered to be a good location for commercial uses since it is readily served by two well travelled streets.

6) **Industrial** (Gray on the Land Use Map) - Ideally, industrial uses should be located in close proximity to major highways and rail lines, and be served by water and sewer facilities. In addition, industrial sites should be located so that they will not have an adverse affect on residential areas.

On the future land use map, the industrial area seems to be ideally located along the railway system and near major traffic arteries where several industrial establishments have already located. This area, which includes 590 acres of undeveloped land, is separated from residential uses in most areas by the railroad, streets, commercial use areas, and by steep slopes in the Mill Creek area. In addition, the industrial area is situated so that the prevailing winds will keep any noxious odors or fumes from drifting over populated areas. It should also be noted that the industrial use area of Millcreek Township links in with the industrial area in Richland Borough.
At this point it is important to consider the probable effects of the Richland Borough and Millcreek Township Sewage Facilities Plan on industrial development in this area. The existing Sewage Plan indicates that the designated industrial area will not be served by sewerage lines. This situation could present a real problem in promoting industrial development in this area since industries usually look for and require sewerage facilities. Because of this problem, it is recommended that a few changes be made to the Sewage Plan.

Fortunately, it would be feasible to serve most of the industrial area by making two relatively simple changes to the plan. First of all, a line could be laid from the proposed pump station on Richland Road eastward along Furnace Road. This line would provide service in most of the industrial area south of Furnace Road as well as in a small portion to the north of the road. Secondly, since lateral lines can not be connected into force mains, the industrial area along Richland Road can not be easily served. However, this problem can be remedied by laying a return line in the same trench with the force main. The return line would serve the area along Richland Road and relay sewage back to the pump station where it would then enter the force main where sewage is pumped to Richland Borough (see sewer plan map in Millcreek Township office). If Millcreek Township officials are sincerely interested in attracting new industry to this area of the township, they should consider recommending to the Sewer Authority that these or similar changes be made to the Sewage Facilities Plan.
7) **Recreation and Open Space** (Light Green on the Land Use Map) - All recreation and park areas as well as the State Game Lands in the Township have been noted as a future land use category so that they will be considered as conservation areas in the overall development plan.

8) **Institutional, Public, and Semi-Public** (Blue on the Land Use Map) Schools, municipal buildings, and the fire company have all been classified as institutional, public, or semi-public uses. They have been noted on the future land use map since the location of these facilities is an important consideration when planning for the future highest and best use of land. For example, a fire company should be in close proximity to intensive land uses; while school facilities should not be far removed from residential areas.

9) **Conservation - Flood Plain** (Medium Green on the Land Use Map) Flood plains have been delineated as a separate category on the Future Land Use Map since they are considered to be ecologically sensitive areas that should not be developed without restrictions. It is recommended that development be strictly regulated in flood-prone areas to prevent unnecessary loss of life or property as well as to protect streams from water pollution problems, and erosion in and around the water courses. Additionally, development in flood-prone areas is known to increase flood levels by volume displacement and induce flooding conditions. Therefore, no development should be permitted on the flood plain that will have an adverse effect on other properties.

Ideally, flood-plains should be preserved as open space areas. In some sections of the Township flood-plains could serve as recreation areas or perhaps hiking and bicycling trails could be established along stream banks.

10) **Conservation - Watershed** (Dark Green on the Land Use Map) The South Mountain ridge as well as the Furnace Creek drainage area are ecologically sensitive regions where conservation of resources should be practiced. The following account lists the factors that were instrumental in determining that this region of the Township be designated conservation-watershed:
1. Water supplies for Richland, Newmanstown, Sheridan, Robesonia, and Womelsdorf are generated on the South Mountain ridge. Since safe and pure water supplies are becoming increasingly more difficult to find and maintain as development encroaches on water regeneration areas, measures should be taken to protect these valuable water supplies.

The nature of water regeneration coupled with the geological characteristics of the area also dictate that to restrict development on the mountain would be in the best interest of the population utilizing the water supply. The process of ground water regeneration begins with precipitation percolating through the soil where it then enters rock fractures and is held there as a ground water supply. When it is considered that the depth to ground water is rather shallow and that the soil cover on the mountain is thin, it is apparent that the ground water supply could easily become polluted by improperly installed on-lot sewage disposal systems.

2. According to the Bureau of Topographic and Geologic Survey of the Pennsylvania Department of Environmental Resources, ground water yields in the rocks on South Mountain are very low. The ground water occurs in fractures in the rock in the upper 100 to 150 feet from the surface. These fractures are few in number and extremely small in cross section, thus allowing for very little water storage. In order to avoid appreciable interference of yield, two or more wells should be spaced 3,000 feet or more apart. This factor alone, indicates that development should be of a low density nature on the mountain.

3. The granites and quartzites of South Mountain weather very slowly and are virtually not affected by solution. Breakup of these rocks occurs primarily from freeze and thaw action. As a result, the soil cover over the rock is very thin and slopes are very steep. The rockiness of the area could very likely prevent on-lot disposal systems from functioning
properly. In fact, sewage disposal permits probably could not be issued for this area. Additionally, the steep mountain slopes must be protected from indiscriminate development and improper clearance of vegetation. If proper precautions are not taken to protect severe slopes then erosion, excessive water runoff, and landslides may occur. Strict land and vegetative coverage regulations should be enforced in this area to prevent water runoff and erosion problems. Perhaps applications for development of severely sloping parcels of land should be accompanied by a soil and erosion control plan to be approved by the Soil Conservation Service. Also, limits should be placed on the amount of impervious surface permitted on the land as well as the amount of vegetative cover that can be removed.

4. Not only is it important to practice conservation on South Mountain, but also in the drainage area of Furnace Creek. This area has also been designated conservation since Furnace Creek flows approximately one (1) mile into Berks County where it is dammed to form the Robesonia-Womelsdorf Reservoir. Any contaminant draining into this creek in Millcreek Township would most likely pollute the Robesonia-Womelsdorf water supply.
CIRCULATION PLAN

The long range objective of the circulation plan is to promote an efficient roadway system in the Township that will support the existing and proposed land use scheme. It is apparent that the circulation plan and the land use plan are interrelated when it is considered that future development is usually encouraged by an adequate circulation system. Adequate road systems tend to promote development and in fact can make it more desirable. Conversely, extensive development on inadequate road systems can result in an over burdened and potentially dangerous transportation system. Consequently, improved street systems should be planned for areas that are predicted or encouraged to develop.

The only concern in this circulation plan will be the movement of vehicular traffic since the automobile and tractor-trailer are the primary means of transportation in most rural townships. The only other mode of transportation worth mentioning is the railroad system that serves the industrial area.

In the following paragraphs, deficiencies in the roadway system and recommendations for improvements are listed. It should be noted that these recommendations represent minimal corrections necessary to establish a safe and efficient road system in Millcreek Township. In addition suggested improvements are noted for roadways that might need to be upgraded to support new development.

Collector Roadways

Collector roads are the most frequently travelled roadways in Millcreek Township since they gather traffic from local roads and connect local traffic generators. Because of the importance of these roads to the efficient movement of traffic in the Township, they should be in the best possible condition. Unfortunately, there are a few serious deficiencies on these collectors that should be corrected to assure safer travel conditions. The following is a brief analysis of present conditions and recommendations for improvements:
1. **Route 419 - (Schaefferstown Road and Main Street)**

**Deficiencies:**

a. deteriorating road surface from west Township boundary to Millbach

b. insufficient road width for a collector road

c. poor visibility is evident on some curves and at some intersections

d. narrow bridge east of Millbach

e. in Newmanstown:

1) narrow cartway presents driving maneuverability problems

2) on-street parking prevents clear sight distances at intersections and causes the cartway to be narrower. The 34 to 36 foot cartway with parking on both sides of the street actually measures 14 to 20 feet wide.

3) most accidents in Newmanstown involved parked cars according to PennDOT reports.

**Recommendations:**

a. The State should resurface sections of this road and at the same time widen the cartway to 34 feet as recommended for collector roads by the Lebanon County Planning Department

b. Visual obstructions such as brush, vegetation, telephone poles, etc, should be removed at intersections.

c. The bridge east of Millbach should be replaced with a wider, more adequate structure.

d. Since it is not practical to remove all on-street parking on Main Street in Newmanstown a better alternative must be found. Any of the following recommendations could be considered:
1) permit on-street parking only on one side of the street
2) permit on-street parking only in select areas along Main Street (for example - only in the Commercial District)
3) Prohibit on-street parking 20 to 40 feet from any intersection.

2. L.R. 38011/38014 (Richland Road/ Sheridan Road - from Richland Borough line to Main Street in Newmanstown)

Deficiencies:

a. Very narrow carriageway of 14 to 20 feet in Sheridan area
b. Intersection with T-620 is extremely hazardous:
   1) poorly designed dog-leg intersection
   2) steep road grade on L.R. 38011/38014 to east and west of intersection
   3) poor visibility caused by curves on L.R. 38011/38014 and visual obstructions such as guardrails, trees, brush, and the old mill
   4) most accidents have been caused by proceeding without clearance or from travelling above safe speeds. Proceeding without clearance has probably been caused by visual obstructions.

Recommendations:

a. When the State resurfaces this roadway they should also widen it to the recommended 34 feet for collector streets according to the Lebanon County Planning Department.

b. The intersection at T-620 and L.R. 38011/38014 should be redesigned, however, it would probably be economically unfeasible at present to reconstruct it.

1) When redesigned, the dog-leg should be eliminated, and the severe slope and curves should be lessened
c. Until the intersection can be redesigned, the following measures should be taken:

1) Visual obstructions should be removed where possible.

2) Dangerous intersection signs should be posted and any other signals or markings that PennDOT may feel is necessary.

Local Roadways

Local roads serve as access streets to private properties and are not major roadways that connect traffic generators. Deficiencies on these roadways are not a major concern since they are for the most part rural roads that have minimal average daily traffic volumes. Nevertheless, a few deficiencies on the most frequently traveled roads should be noted so that plans can be made for necessary improvements to the roadway system.

1. Most Frequently Traveled Local Roadways (A-1119 - Kleinfeltersville Road; L.R. 38014 - South Sheridan Road; L.R. 38012 - South Millbach Road; L.R. 425 - North Millbach Road; T-620 - Kalbach Road and Fort Zeller Road; T-612 - Krumstown Road; and T-361 - Stricklerstown Loop)

Deficiencies:

a. Surfaces on most of these roads are in poor or deteriorating condition

b. Cartways are 14 to 16 feet in width in many places which may be too narrow for two cars to pass safely

c. A few blind curves and intersections exist on local roadways.

Recommendations:

a. When the Township or State resurfaces these streets, cartway widths should be increased.

b. Curves and dangerous intersections should be appropriately marked with signs.
2. **Potentially Dangerous Intersections on Local Roads** (L.R. 38051 and L.R. 38055 - Myerstown Road; Route 419 and T-620 - Kalbach Road and 419; L.R. 38051 and T-610 - Myerstown Road and Richland Road; LR 38012 and T-361 - Stricklerstown Road and MillBach Road; L.R. 38012 and T-604 - Stricklerstown Road and Dierwechters Road; and All19 and T-600 - Kleinfellersville Road and Chapel Road)

**Deficiencies:**

a. Poor design - particularly on:

1) T-600 and All19 - steep grade up to All19 from T-600
2) T-620 and Route 419 - hill on 419 cuts down on clear sight distance.

b. Poor visibility created by brush, trees, other vegetation, and embankments. This is particularly evident at the following intersections:

1) T-600 and All19 - Embankment and vegetation blocks clear sight distance
2) T-604 and L.R. 38012 - a structure and shrubbery limit clear visibility.

c. A curve on L.R. 38055 as it approaches L.R. 38051 creates a traffic hazard. According to PennDOT reports, many accidents have been caused here by vehicles proceeding above safe speeds on a curved roadway.

**Recommendations:**

a. Poorly designed intersections should eventually be redesigned and constructed to eliminate hazardous conditions. In the meantime, these intersections should be clearly marked with caution or dangerous intersection signs.
b. Visual obstructions at intersections should be removed where possible.

c. Eventually the State should straighten the curve on L.R. 38055. However, until this is economically feasible, the curve should be clearly marked with warning signs.

Proposed Streets

The Millcreek Township Supervisors will be assuming responsibility for a private unpaved road in Stricklerstown sometime during 1976. The street, to be named Round Barn Road, will be paved and maintained by the Township. The street right-of-way was given to the Township so that better service could be provided to the fifteen (15) residences and campground that are accessible only by the unpaved road.

Recommended Street Improvements to Accommodate New Development

As development occurs in the recommended patterns indicated on the future land use map it may be necessary to make certain improvements to the existing street system to accommodate it. Generally, only Residential and Industrial uses will require roadway improvement. For example, the industrial district may require wider and improved road surfaces to carry heavy tractor-trailer traffic. Residential development will probably require the extension of existing streets or perhaps the construction of new streets.

The following listing catalogues the street improvements recommended for the Residential and Industrial areas. It should be noted that these improvements are recommended only when substantial development has occurred to warrant changes in the road system:

Residential:

1. As high density development takes place in Newmanstown and Sheridan the following streets will in all probability need to be extended:
In Newmanstown -  
Robin Alley  
Progress Street  
West Park Street  
Avenue "A"  
Short Street  

In Sheridan -  
Willow Street  
Vine Street  
Sun Street  
Spruce Street  
Cedar Street

2. If development occurs on the north side of Alumni Alley, the road surface and width will need to be improved.

3. As the Stricklerstown area continues to grow some of the road surfaces on existing public streets will need to be improved. In addition private unimproved roadways will probably need to be taken over by the Township and reconstructed to improve roadway width and surface.

4. New streets created by developers will conform to the Lebanon County Subdivision Regulations. It is recommended that developers absorb the cost of new street construction. After construction, which should be carried out according to Township specifications, the street would be deeded to the Township. All maintenance would then be the responsibility of the Township.

Industrial:

1. Furnace Road, the primary road serving the existing industrial area, should be improved to eliminate the hazardous bridge and curve. The road surface should also be improved and widened to accommodate tractor trailers.

2. Ash Street as it leads into the industrial area is in poor condition. This street should be widened and paved if an industry moves into its service area.

3. Other streets of secondary importance that may serve the industrial area and that may need some improvements are Sonner's Road and Stouchburg Road.
4. One of the major transportation problems for the industrial area is a suitable traffic route to Route 422. Currently any tractor-trailer traffic traveling to or from the industrial area must go through Sheridan and Newmanstown on narrow two-lane streets. Perhaps if this area becomes an industrial park, Sheridan and Newmanstown could be by-passed with a new road that could be constructed through the industrial area from Furnace Road to link directly with Route 419 east of the railroad bridge.