

chapter 2 Background Studies Summaries

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Introduction

Comprehensive plans are developed to provide for the future well-being of a community. Before the future can be conceived, an understanding of the present community is needed – from its natural features and built structures to its people and the land uses they apply. The following summary profiles provide a foundation for planning in Lower Paxton Township. Detailed profiles, additional and expanded tables, and figures are presented in Appendix C of the Comprehensive Plan.

This Comprehensive Plan begins with the historic and existing demographic characteristics of Lower Paxton Township. Population, age and gender distribution, racial composition, educational levels and socioeconomic status are presented, based primarily on data released from the U.S. 2000 Census. This information will help to determine future housing, services, and utilities needs.

With an understanding of the population, the existing and future quality of housing for residents becomes relevant to the prosperity of the Township. A study of existing housing conditions, the variety of housing types and prices, and projected population levels are necessary to characterize future housing needs.

Land use data is an extremely important planning component as communities develop and redevelop lands while controlling negative impacts. The land use profile characterizes the amount and location of various land uses in the Township.

The Township's transportation network is intended to provide reliable access to destinations within and beyond the Township. A review of existing conditions, problematic locations, and planned improvements is included to assess needs for network enhancements.

Cultural resources are found in the Township's past and present. A review of federal, state, and local preservation efforts is given, as well as an acknowledgment of the present cultural landscape.

Community facilities and services are reviewed to identify current inadequacies and future needs. Public safety and public works services are characterized, as well as recreational, educational and health care facilities. Due to the size and complexity of the Township, both public and private facilities and services relevant to the community's well-being have been included. Community utilities are reviewed for their capacity to serve current and future residents.

The identification and characterization of Lower Paxton Township's natural resources are also important to the planning process. Delineation of these resources serves as a guide for future planning decisions. Sensitive resources are identified and described in order to ensure that future development in the Township occurs without unnecessary environmental impacts.



Demographic Profile

This profile summarizes Lower Paxton Township's demographic characteristics and measures its trends with neighboring municipalities, Dauphin County, Pennsylvania, and where appropriate, the Harrisburg-Lebanon-Carlisle Metropolitan Statistical Area (MSA). Detailed demographic information can be found in Appendix C.

Population Growth Trends

According to the 2000 Census of Population and Housing, Lower Paxton Township's population has reached 44,424, second only to the City of Harrisburg (48,950) in Dauphin County. More significantly, the 2000 Census ranked Lower Paxton Township as the 19th most populated municipality within Pennsylvania.

While growth rates of 30 percent or more were characteristic of the Township from the 1950s to the 1970s, the past two decades have seen more moderate growth.

Population Density

With 44,424 persons distributed over a total land area of 28.1 square miles, Lower Paxton Township has a population density of 1,580.9 persons per square mile. See Map 1 in Appendix A for an illustration of population density within the Township. During the 1970s, as the Township developed a greater number of multi-family dwelling units than the adjoining municipalities, its population density rose by more than 30 percent. More recently, population density has paralleled population growth at approximately 14 percent. As a result of a high population density, the majority (97.8 percent) of Lower Paxton Township's total 1990 population is classified by the U.S. Census Bureau as urban.

Age Cohort Distribution

Age cohort distribution, or the distribution of the total population by age, is a key factor that can affect

population growth and influence the services required, as different age groups have different public service needs. See Table 2-3 for a comparison of age cohorts between Lower Paxton Township and Dauphin County.

The young adult age group (20-44 years) comprises the largest percentage of the Township's total population, though this percentage is declining. The mature age group (45-64 years) represents the Township's second largest and fastest growing age group. The school age group (0-19 years) comprises nearly a quarter of the Township's population and has grown by 16.4 percent over the past decade. The senior age group (65 or more years) represents the Township's smallest and second most rapidly increasing population segment. These trends together suggest that the Township's population is aging, which may produce an increased demand for specialized services and facilities, and that school age group growth may impact educational facilities and possibly juvenile crime rates.

Gender Distribution

The distribution of males and females directly impacts future family formation patterns and subsequent birth rates, thereby influencing community service demands. In 2000, the number of females (23,089) in Lower Paxton Township exceeded the number of males (21,335). This trend may reflect aging populations in which senior women are outliving their husbands. In contrast, the number of males increased at a greater rate (i.e., 15.6 percent vs. 12.0 percent) than the number of females during the past decade.

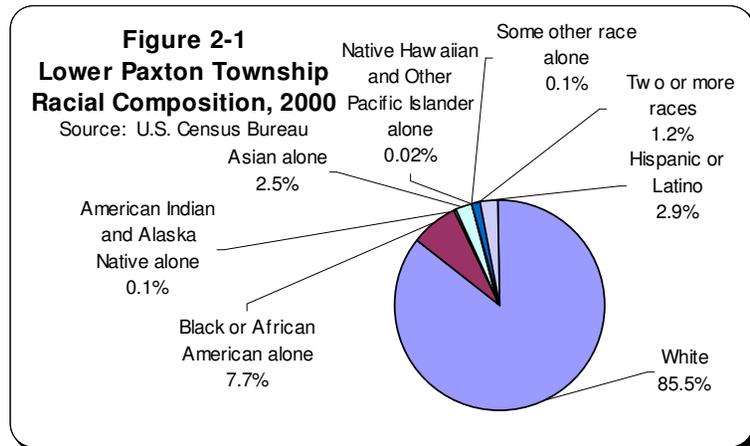
Table 2-1
Population Growth Trends, 1950-2000

Municipality	Population by Decennial Census						Rate of Change (%)				
	1950	1960	1970	1980	1990	2000	1950-1960	1960-1970	1970-1980	1980-1990	1990-2000
Lower Paxton Township	6,546	17,618	26,517	34,830	39,072	44,424	169.1	50.5	31.3	12.2	13.7
Dauphin County	197,784	220,255	223,713	232,317	237,813	251,798	11.4	1.6	3.8	2.4	5.9
Harrisburg-Carlisle Lebanon MSA	398,706	n/a	510,170	n/a	587,986	629,401	n/a	n/a	n/a	n/a	7.0

Source: U.S. Census Bureau

Racial Composition and Ethnicity

Though the majority (85.6 percent) of the Township's population is White, racial diversity is increasing. The percentage of Black or African Americans in the Township increased from 5.5 to 7.7 percent in 2000. The Township's Asian population has also grown, from 1.3 to 2.5 percent. In addition to these aspects of racial diversity, the number of residents who classify themselves as being of Hispanic or Latino ethnicity was tabulated in the 2000 Census. This number represents 2.9 percent of the Township's population. The 2000 racial composition of Lower Paxton Township is shown in Figure 2-1.



Household Characteristics

The types of households present in Lower Paxton Township, both "family" and "non-family," are of key interest to this Comprehensive Plan and warrant a careful analysis as they relate to future service demands. A family includes a householder and any people living in the same household who are related to the householder by birth, marriage, or adoption. Non-family households are groups of unrelated people or one person living alone.

As shown in Table 2-3, there are 18,584 households within the Township, an increase of 2,524, or 15.7 percent, over the past decade.

The majority (65.4 percent) of the Township's households are family households. Family households increased by 1,290 (11.9 percent) units over the 1990 to 2000 period. However, the Township's family households and living arrangements are reflective of changes occurring at the state and national levels; namely, the percentage of married-couple family households in Lower Paxton decreased.

The number of non-family households in Lower Paxton Township has increased by 23.8 percent. Within the non-family households, the number of

householders living alone increased by 27.1 percent, with similar increases in the number of persons age 65 years and older living independently. Finally, the Township's average household size has declined to 2.35 persons in 2000, reflective of state and national household-size trends.

Educational Attainment

Educational attainment is of primary importance to the general welfare and economic vitality of a community. Skills and abilities required to compete in the labor market are acquired through the educational process. These skills, in turn, provide a degree of economic security for individuals and improve the quality of the workforce. Table 2-4 compares Lower Paxton Township's 2000 educational attainment levels of persons 25 years and older, with the residents of Dauphin County and Pennsylvania.

The majority of Lower Paxton Township's residents age 25 years and older (90.6 percent) have completed high school. Furthermore, 58.1 percent of residents have some advanced education. This trend demonstrates that the Township's overall education levels are high, which may be attributed to the number of Township residents who are employed in professional (white collar) and state government jobs. This is further reinforced by the low percentage of non-high school graduates (9.4 percent) in the Township. However, these percentages reflect educational attainment increases that trail those of the County and state, with only one exception--the percentage of Township residents who have attained a graduate or professional degree increased faster in the Township than across the state.

Per Capita Income and Poverty Characteristics

Local per capita income level is closely related to local educational attainment levels. Per capita income reflects the relative affluence of a population and its ability to support local public facilities and services. Lower Paxton Township experienced a slight decline (-1.9 percent) in its per capita income levels over the 1989 to 1999 enumeration periods, while the County, the MSA and the state each witnessed real growth, ranging from 3.2 to 4.1 percent. This trend of the Township trailing behind County and state levels for per capita income correlates with changes

Table 2-2
Age Cohort Distribution, 1990-2000

Lower Paxton Township Age Cohorts	1990		2000		Change (1990-2000)	
	#	% of total	#	% of total	#	%
School Age Group	9,330	23.9	10,857	24.4	1,527	16.4
Young Adult Population	16,642	42.6	16,127	36.3	(515)	(3.1)
Mature Age Group	8,119	20.8	11,178	25.2	3,059	37.7
Senior Population	4,981	12.7	6,262	14.1	1,281	25.7
Total	39,072	100.0	44,424	100.0	5,352	13.7
Dauphin County Age Cohorts	1990		2000		Change (1990-2000)	
	#	% of total	#	% of total	#	%
School Age Group	34,012	16.8	66,542	26.4	1,527	16.4
Young Adult Population	101,187	50.1	89,379	35.5	(515)	(3.1)
Mature Age Group	46,989	23.3	60,033	23.8	3,059	37.7
Senior Population	19,802	9.8	35,844	14.2	1,281	25.7
Total	201,990	100.0	251,798	100.0	49,808	24.7

Source: U.S. Census Bureau

in educational attainment. Reported levels reflect adjusted 1989 values and unadjusted 1999 values.

Poverty is one of the key statistical tools used to characterize a population, describing the number of families whose income is proportionally lower than families of similar size and composition. Poverty levels do not vary geographically but are annually adjusted for inflation using the Consumer Price Index. As shown in Figure 2-2, Lower Paxton's poverty level (4.0 percent) is below the levels enumerated for Dauphin County and the state. While this percentage is low, it is important to recognize that poverty does exist in the Township.

Population Projections

Independent Projections

According to independent population projections performed by Bondata (Hummelstown, PA) for this planning effort, Dauphin County is expected to see a population increase of approximately 11.5 percent from 2000 to 2020. Much of this growth is expected to occur in the County's townships, including Lower Paxton Township. Lower Paxton Township ranks seventh among the Commonwealth's townships in projected population growth at an anticipated 25.0 percent (+11,117 people).

The annual growth rate for Lower Paxton Township was 1.3 percent from 1990 to 2000. Projection analysts used a projected annual rate of 1.15 percent for the next twenty years. However, the Township's Act 537 Sewage Facilities Plan uses a lower rate – just under 1 percent – for their 20-year build-out projections. This rate assumes that “the long-term historical trend of continued slowing in the population growth rate will resume and continue through the Act 537 planning period...” as opposed to a continued, steady growth rate. This assumption corresponds to County-derived projections (see below) that also suggest a slowing growth rate. All of these figures are speculative, and ultimately, the actual growth rates will depend on economic conditions throughout the area.

Table 2-3
Lower Paxton Township Household Characteristics Analysis, 1990 and 2000

Household Type	Decennial Census				Change	
	1990		2000			
	#	%	#	%	#	%
Total Households (Family + Non-family)	16,060	100.0	18,584	100.0	2,524	15.7
Family Households (families)	10,871	67.7	12,161	65.4	1,290	11.9
Married-couple family	9,113	56.7	9,880	53.2	767	8.4
Female householder, no husband	1,344	8.4	1,714	9.2	370	27.5
Non-family Households	5,189	32.3	6,423	34.6	1,234	23.8
Householder living alone	4,213	26.2	5,356	28.8	1,143	27.1
Householder 65 years and over	1,216	7.6	1,552	8.4	336	27.6
Median household size (persons per household)	2.40		2.35		(0.05)	

Source: U.S. Census Bureau, 1990 and 2000

Table 2-4
Educational Attainment by Persons 25 Years and Older, 2000

Education Level	Lower Paxton Twp.		Dauphin County		Pennsylvania	
	#	%	#	%	#	%
Non High School Graduate	2,945	9.4	28,547	16.6	1,496,105	18.1
High School Graduate (includes equivalency)	10,145	32.5	64,174	37.4	3,150,013	38.1
Some College, No Degree	5,243	16.8	27,902	16.2	1,284,731	15.5
Associates Degree	2,380	7.6	10,780	6.3	487,804	5.9
Bachelor's Degree	6,851	21.9	25,279	14.7	1,153,383	14.0
Graduate of Professional Degree	3,653	11.7	15,101	8.8	694,248	8.4
Total	31,217	100.0	171,783	100.0	8,266,284	100.0

Source: U.S. Census Bureau 2000

State and County Population Projections

In the process of preparing the Regional Growth Management Plan, Tri-County Regional Planning Commission prepared municipal population projections. These were based on county projections from the State Data Center. These projections were more conservative than the independent analysis presented above, yielding a growth rate of 15 percent for Lower Paxton Township for the 2000-2020 time period. These projections suggest an annual growth rate of 1 percent.

Public Comments

When participants in the Fall 2001 Township CPU meetings were asked to list the most- and least-liked features of the Township, they included several demographic characteristics. Participants valued the mix of generations, the honesty of tradespeople, the diversity in the population and their friendly disposition as assets to the community. Some participants listed family roots as a more personal, positive community attribute. Among the least-liked demographic features, participants listed too many people and a lack of ethnic diversity.

Trends and Issues

- Lower Paxton’s largest growth rate (169.1 percent) occurred between 1950 and 1960, when the Township’s population increased from 6,546 persons to 17,618 persons. The current annual growth rate, based on 1990 and 2000 data is 1.3 percent. Continued growth is projected.
- Lower Paxton Township’s demographic and socioeconomic characteristics are highly influenced by trends in the Harrisburg Region.

- Lower Paxton Township is increasingly becoming one of Pennsylvania’s most populated municipalities. The 2000 Census ranked the Township as the 19th most populated municipality, up from 24th in 1990. Locally, the Township is the second largest municipality by population in the Tri-County Region, after the City of Harrisburg.

- Lower Paxton’s population density levels quickly rose after 1970 to match the densities currently experienced by Susquehanna and Swatara Townships. Since 1970 Lower Paxton has developed more multi-family dwelling units.

- Lower Paxton Township’s population is aging. The median age of the Township’s population increased by 3.5 years between 1990 and 2000. The senior population (65 years and over) grew by 24.5 percent over the past decade. Therefore, careful consideration is needed to ensure the needs of this aging population are met.

- Lower Paxton Township’s young adult population (20 to 44 years) declined from 1990 to 2000. This may be a result of the “brain drain syndrome” that causes educated and skilled workers to relocate to areas of competitive employment.

- Lower Paxton Township’s school age group increased by 1,563 persons, or by 16.8 percent over the 1990 to 2000 period, which produced a direct impact on the Central Dauphin School District and other local services and facilities serving this age group.

- Lower Paxton Township is becoming more racially diverse, which is also a trend experienced by many central Pennsylvania communities. The increase in Hispanics, for example, may be attributed, in part, to their immigrating from larger “East Coast cities for the relatively slower pace of Harrisburg, Lancaster, Lebanon, and York. Greater numbers of minorities can mean greater political clout and more money from federal, state and local governments for programs that will help people find a job, start a business, or get a good education.”¹

- While the total number of households in Lower Paxton Township has increased, the median household size has decreased over the past decade. These smaller household sizes may place demands on alternative housing types.

- The Township’s overall education levels are high, which may be attributed to the number of residents who are employed in professional (white collar) and state government jobs.

¹ Lewis, Jim. “Minorities Move to Region.” *Patriot News* 10 March 2001, Final Ed., A1.

Figure 2-2
Percent of Persons Below Poverty Level, 2000

Source: US Census Bureau

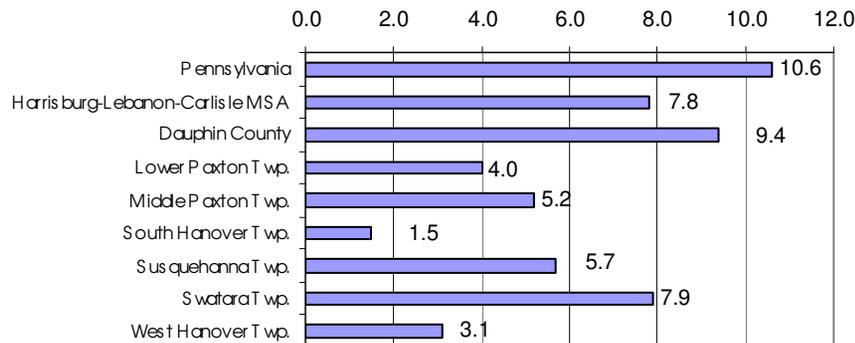


Table 2-5

Population Projections

Municipality	1990	2000	Projected 2010	Projected 2020	Projected # Change 2000-2020	Projected % Change 2000-2020
Lower Paxton Township	39,264	44,424	48,282	51,075	6,651	15.0
Dauphin County	238,434	251,798	264,378	273,483	21,685	8.6
Lower Paxton Township	39,264	44,424	49,842	55,541	11,117	25.0
Dauphin County	238,434	251,798	273,129	280,636	28,838	11.5

Source: PA State Data Center; Dauphin County Planning Commission

Source: Bondata



Housing Profile

Attractive housing and well maintained residential neighborhoods are one of the most important assets of any community. Quality housing appreciates in value and assures that residents are living in a safe, healthy environment. A variety of styles and prices is needed to provide housing opportunities for current and prospective residents.

Housing Unit Supply and Density Trends

Lower Paxton Township, along with its neighboring townships, Dauphin County, the MSA and Pennsylvania, has experienced significant housing unit growth rates over the 1980 to 2000 period. These trends are attributable to increased employment opportunities in the greater Harrisburg area and a high quality of life, as well as other factors. Of the municipalities surveyed (Figure 2-3), Lower Paxton Township experienced the largest housing unit growth rate (37.9 percent) of surveyed municipalities during this period. These growth rates—except for Middle Paxton Township—surpassed the rates experienced by the MSA (23.1 percent), and Pennsylvania (14.2 percent).

According to the 2000 Census and as shown in Table 2-6, Susquehanna Township recorded the highest housing density value (714.2 units per square mile) of the surveyed jurisdictions, closely followed by Lower Paxton (697.7 units per square mile) and Swatara (688.0 units per square mile) Townships. Due to their proximity to the City of Harrisburg

and their immediate interstate access, these municipalities host the majority of the suburban Harrisburg population.

Housing Occupancy and Vacancy Status

The 2000 Census reported that the majority (94.8 percent) of the Township’s housing units are occupied. Occupied housing units, during the 1990-2000 decade, increased by 2,530 units, or 15.8 percent, more than twice the rate of Dauphin County and Pennsylvania. Moreover, the number of occupied housing units in the City of Harrisburg *decreased* by 4.5 percent, which may indicate an out-migration of city residents into the neighboring suburban communities, such as Lower Paxton Township.

The greatest share (62.5 percent) of Lower Paxton Township’s occupied housing units is comprised of owner-occupied units--up from 58.7 percent in 1990. This would indicate that more housing units built during

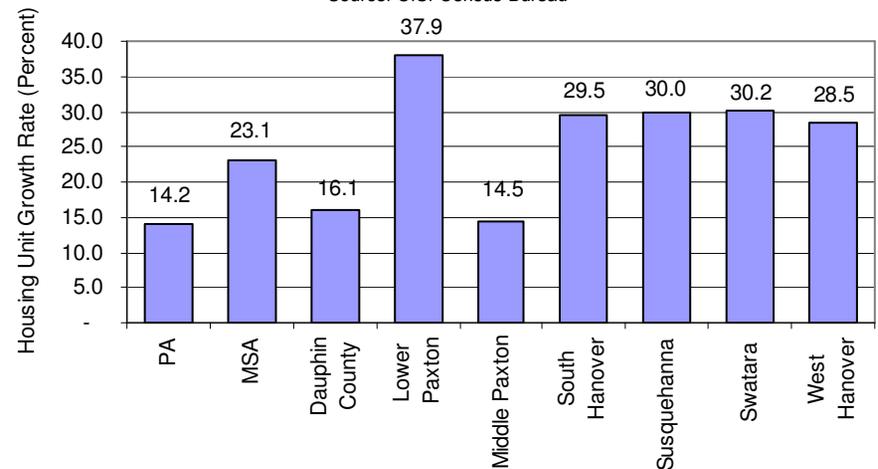
the 1990s were built as owner-occupied units than as renter-occupied units. The benefits of an increased level in home ownership is then, in part, returned to the Township in the form of increased residents disposable income and a greater sense of commitment to the community.

Although the 2000 Census reported that a small percentage of Lower Paxton Township’s total housing units are classified as vacant, this represents a 20.5 percent increase over the 1990 Census. Of the 1,022 vacant units, only 83 units were classified as being used for seasonal, recreational or occasional use purposes.



Figure 2-3 Housing Unit Growth, 1980-2000

Source: U.S. Census Bureau





The vacancy rate serves as a measure of the housing market. A high vacancy rate indicates excess supply and low demand, offering bargaining power to the buyer. A low vacancy rate indicates high demand, creating higher prices based on a limited supply. Lower Paxton Township's homeowner vacancy rate increased to 1.4 percent in 2000, while the rental vacancy rate increased from 6.7 percent in 1990, to 8.6 percent in 2000. Using the standards in Frank So's publication², Lower Paxton Township's homeowner vacancy rates are too low and may contribute to a competitive (i.e. high-priced) housing market. In addition, the rental vacancy rates are too high, which may force a decrease in the rental rates to fill vacancies.

Housing Unit Characteristics (Size of Dwelling Unit)

The majority (72.9 percent) of housing units in Lower Paxton Township contain five or more rooms, which includes the traditional two-story, single-family residential dwelling. While this further supports the affluence of the community, the remaining figures demonstrate that smaller housing units are less common in the Township.

Age of Housing Units and Infrastructure

Analyzing the age of Lower Paxton Township's residential structures is useful in evaluating their overall condition, specifically, in terms of identifying possible electrical, heating or plumbing system deficiencies (e.g., needed upgrades), and potential lead-based paint hazards. As illustrated in Figure 2-4, the highest percentage of housing units built per decade were built between 1970 and 1979. The Township's housing boom that began during the 1950s resulted from outward growth pressures from

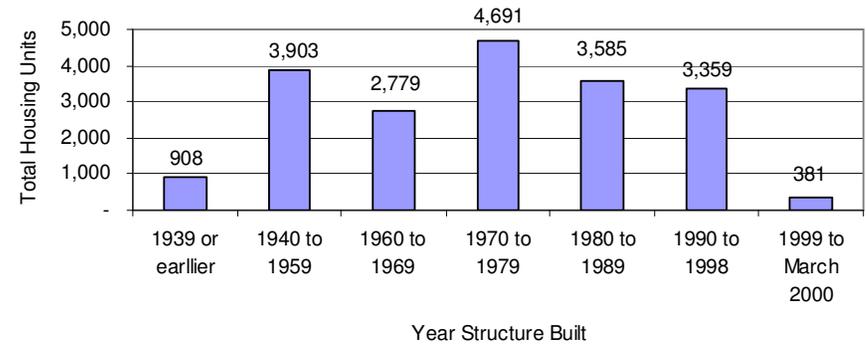
the City of Harrisburg. Continued improvements to transportation systems (i.e., Interstates 81 and 83) permitted urban dwellers to further populate the outlying rural communities during the 1960s and 1970s.

Considering that 70.7 percent of Lower Paxton Township's housing units were built between 1950 and 1979, some of these structures may require electrical, heating and plumbing system upgrades. More importantly, these homes may contain lead-based paint, which represents both a substantial health risk for children and a liability concern for property owners.

In 2000, the majority (99.7 percent) of the Township's housing stock was serviced by complete plumbing facilities. In addition, the majority of the Township's housing units utilize natural gas, electricity or fuel oil/kerosene as heating sources. Very few of the occupied housing units use coal or wood for heating purposes, thereby, benefiting local air quality.

Figure 2-4
Age of Housing Units, Lower Paxton Township, 2000

Source: U.S. Census Bureau



Housing Unit Type

The predominant residential unit design in Lower Paxton Township is the single-family dwelling, which, according to the 2000 Census, as shown in Figure 2-5, comprised 68.1 percent of the Township's entire housing stock. Of this total, the single-family detached unit comprised 58.6 percent. Lower Paxton's smaller share of single-family housing units (in comparison to surrounding municipalities) is attributed to the fact that the Township has a larger share (34.4 percent) of its housing stock devoted to multi-family units. These statistics, however,

demonstrate that Lower Paxton Township provides a variety of housing types and designs from which its citizens may choose.

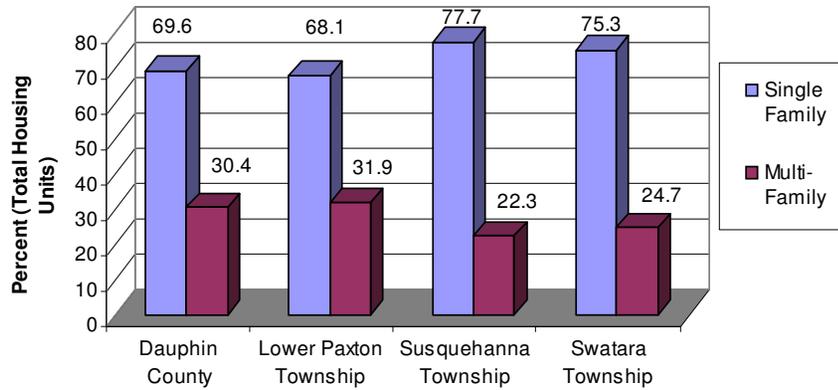
Table 2-6
Housing Unit Density, 1980-2000

Municipality	Land Area (Sq. Mi.)	Housing Units Per Square Mile			Numeric Change	
		1980	1990	2000	1980-1990	1990-2000
Pennsylvania	44,819.6	102.6	110.2	117.1	7.6	7.0
Harrisburg-Lebanon-Carlisle MSA	1,991.0	108.6	121.3	133.8	12.7	12.5
Dauphin County	528.0	181.3	194.5	210.5	13.2	16.0
Lower Paxton Township	28.1	506.1	601.5	697.7	95.4	96.2
Middle Paxton Township	54.6	31.8	35.5	36.4	3.7	1.0
South Hanover Township	11.4	120.0	143.0	155.4	23.0	12.5
Susquehanna Township	13.4	549.5	603.2	714.2	53.7	111.0
Swatara Township	13.2	528.4	598.5	688.0	70.1	89.5
West Hanover Township	23.2	86.7	97.0	111.4	10.3	14.4

Source: U.S. Census Bureau

Figure 2-5 Comparison of Housing Unit Types

Source: US Census Bureau



urban-based housing market. Moreover, the Township’s higher housing values may be attributed, in part, to low vacancy rates.

The 2000 Census reported that Lower Paxton Township’s median contract rent value (\$570) exceeded the values enumerated for Dauphin County (\$473) and Pennsylvania (\$438). Again, the Township’s higher rent values may be attributed to its urban-based housing market.

Housing Affordability

“Affordable Housing” is commonly defined both publicly and by the banking industry as housing that costs no more than 30 percent of a household’s gross annual income. An analysis of housing incomes and costs in Lower Paxton Township indicates that an adequate supply of affordable housing units are available to Township residents. Table 2-7 presents figures for a more detailed understanding of housing affordability.

Residential Development Trends

Lower Paxton Township remains as one of the area’s fastest growing residential communities. Since the 1970s, the Township’s residential development has been predominantly geared towards meeting the demands of the single-family housing market. The *total* number of new residential building permits (2,072) issued over the 1990 to 2000 period for single-family residential construction far exceeded the number of permits (167) issued for multi-family units. Combined, these multi-family building permits generated 928 dwelling units, 28 percent (260 units) of which were constructed in 1997 alone. The pace of permits issued has declined since 1992 as a result of sewer moratoriums placed on the Township by the Pennsylvania Department of Environmental Protection (PADEP). See Figure 2-6.

Table 2-7 Housing Affordability, 2000

	Lower Paxton Township Households	Dauphin County Households
	%	%
Owner-occupied		
Cost burdened	18	19
Extremely cost burdened	6	7
Renter-occupied		
Cost burdened	27	32
Extremely cost burdened	9	13

Source: Tri-County Regional Planning Commission

Future Housing Need

Referring to both independent and state/county population projections, household projections and future housing needs can be determined. The independent projections suggest that an additional 5,050 households will result from population growth by 2020. The state/county projections suggest that an additional 3,150 households will be created in the Township by 2020. These projected households indicate a portion of the potential need for future housing units.

If the Township’s vacancy rate remains stable at 5.2 percent, additional units would develop during this growth period. Applying this rate to the two projections suggests a range of 164 to 263 units additional housing units. In total, the Township’s future housing need ranges from 3,313 to 5,313 units by 2020.



Average Household Size

The distribution of persons among all occupied housing units is an important index of general household sizes. Nationally, the average household size is declining, which is also true at the state and local levels. Lower Paxton Township’s average household size has decreased steadily from 2.55 in 1980 to 2.35 in 2000.

Housing Values

Housing serves as an investment for both owners and landlords. The price of housing in an area at a particular time, relative to the regional and state values, is a relatively good measure of the local economic health and income. Residential development in Lower Paxton Township has been important in terms of generating revenues for the Central Dauphin School District. The Township contributed over half of the school district’s 1999 and 2000 total residential market values.

The majority of the Township’s owner-occupied housing units, according to the 2000 Census, fall within the \$90,000 to \$174,999 value range. The 2000 Census also reported that the Township’s lower and upper value quartiles to \$96,000 and \$161,000, respectively, while its median value was \$120,300. These values, which are higher than corresponding values reported for Dauphin County and Pennsylvania, may be attributed to the Township’s

Public Comments

CPU meeting participants expressed both positive and negative perceptions of housing conditions and opportunities in Lower Paxton Township. Residents of the Colonial Park South CPU valued the variety of housing types, while residents of the Union Deposit CPU specifically listed affordable housing among the most liked features of the CPU. Responses indicating too many multi-family housing developments and too many single-family housing developments were given under the listing of least liked features of the Township.

² So, Frank S., and Judith Getzels, eds. *The Practice of Local Government Planning*. Washington, D.C.; International City/County Management Association, 1988.

Trends and Issues

- From 1980 to 2000, Lower Paxton Township’s housing unit growth rate of 37.9 percent exceeded the growth rates experienced by Susquehanna (30.3 percent) and Swatara (30.2 percent) Townships.
- Lower Paxton Township has the second highest housing density of suburban municipalities in Dauphin County.
- Lower Paxton Township has the highest percentage of multi-family housing in Dauphin County.
- Lower Paxton Township’s home ownership rates have increased, which, signifies that a large percentage of the Township’s residents are reaching higher socio-economic levels.
- Lower Paxton Township’s homeowner vacancy rates (5.2 percent in 2000) are healthy; rental vacancy rates are high, which may force landlords to reduce their rental rates in order to fill vacancies.
- Lower Paxton Township continues to provide a wide variety of housing types and designs from which its citizens may choose.
- Housing affordability for both owner- and renter-households is slightly better in the Township than in Dauphin County. However, more than 25 percent of renter-households in the Township are cost burdened.
- Sewer moratoriums in Lower Paxton Township have depressed housing starts over the past seven to eight years, but once lifted, a housing boom could occur.
- The Township’s future housing need ranges from 3,313 to 5,313 units by 2020.

Figure 2-6 Residential Building Permit Trends

Source: Lower Paxton Township

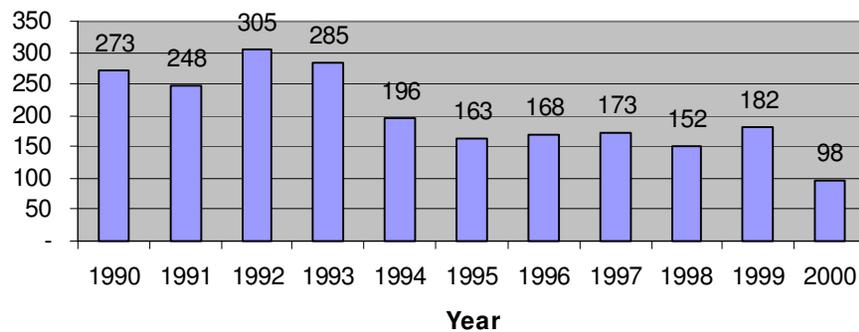


Table 2-8 Household Projections

	Census 2000	Persons per household	Projected 2010	Projected 2020	Projected # Change 2000-2020
Lower Paxton Township					
Population	44,424	2.35	48,282	51,075	6,651
Households	18,584		20,546	21,734	3,150

Source: PA State Data Center; Dauphin County Planning Commission

Population	44,424	2.35	49,842	55,541	11,117
Households	18,584		21,209	23,634	5,050

Source: Bondata



Land Use Profile

This profile examines Lower Paxton Township by assessing its existing land uses, development patterns, and current zoning. These assessments encompass all of Lower Paxton Township and include quantifications at the CPU level. Table 2-9 summarizes Lower Paxton Township's land uses by acreage and proportion of total land area. Map 2, Existing Land Use 2002, illustrates the current distribution of land uses and provides a basis for guiding future development by type and location.

As shown in Table 2-9, 11,478.3 acres or 64.1 percent of the Township's total land area is developed.

Developed Lands

Residential

Residential uses comprise the single largest land use percentage of the Township's total land area (7,093.0 acres or 39.6 percent). Single-family homes are found throughout the Township, comprising 34.1 percent of the Township's total land area. Multi-family housing comprises the remaining residential area, 5.5 percent, in the Township. Large multi-family complexes are commonly found adjacent to single-family and commercial areas. Smaller multi-family developments can be found within single-family neighborhoods in several Township locations.

Commercial

Commercial uses in the Township comprise 1,175.3 acres or 6.6 percent of the Township's total land area. These include suburban shopping malls, commercial strip developments, and professional offices. Commercial areas are typically located along transportation routes that provide easy access for customers and for deliveries. Much of this type of development is clustered along U.S. Route 22 and Union Deposit Road.

Mixed Use

Land that are classified as mixed use contain some combination of various land uses that are so closely located that they function as an integrated unit. Lower Paxton Township has only a 57.3 acres or 0.3 percent classified as mixed use, namely the Village of Linglestown.

Industrial

Industrial lands in Lower Paxton Township are lands dedicated to light manufacturing. Light manufacturing typically involves the design, assembly, finishing and packaging of products. Industrial lands comprise only a small portion (1.8 percent) of the Township's land area. Like commercial lands, industrial areas are often located adjacent to transportation facilities.

**Table 2-9
Existing Land Use Distribution
in Lower Paxton Township, 2002**

Land Use Classification	Land Area (Acres)	Percent of Total
Developed	11,487.3	64.1
Residential		
- Low /Medium Density	6114.01	34.1
Residential		
- High Density	978.95	5.5
Commercial		
- Retail and Services	859.55	4.8
Commercial		
- Office	315.78	1.8
Mixed Use	57.32	0.3
Industrial	319.70	1.8
Institutional	814.72	4.5
Transportation, Communication, & Utilities	1212.44	6.8
Public Recreation	270.29	1.5
Recreation - private	544.53	3.0
Undeveloped	6,426.7	35.9
Agricultural	2605.21	14.5
Grassland/Open Space	442.61	2.5
Woodland	3378.92	18.9
Total (Developed+Undeveloped)	17,914.0	100.0

Source: Lower Paxton Township, 2002

Institutional

The institutional land use category defines the developed parcels within Lower Paxton Township that host various educational, religious, governmental, and health related facilities. Institutional lands total 814.7 acres or 4.5 percent of the Township's total land area.

Transportation, Communication, and Utilities

Transportation, communication, and utility uses include lands areas within the Township that provide a right-of-way for infrastructure. An inventory of these lands is generally limited to large-scale features. Transportation lands make up a significant portion of this land use as the

Township contains two interstate highways, one principal arterial roadway, and six minor arterial roadways. Transportation, communication, and utilities rights-of-way total 1212.4 acres or 6.8 percent of the Township's total land area.

Parks and Private Recreation

Park lands include those that host a wide range of public and private recreational facilities, such as resource conservation areas, nature trails, ballfields, ball courts, picnic pavilions, play equipment and associated parking spaces. A total of 270.3 acres, or 1.5 percent of the Township's land area is represented by publicly owned park and recreational land. An additional 544.5 acres, or 3.0 percent of the Township, is owned and managed for private recreation. Therefore, a total of 814.8 acres is in use for parks and recreation activities in Lower Paxton Township. Note: *This land use analysis used a 5-acre minimum polygon for classification, therefore parks less than 5 acres in size were not independently classified from adjacent uses, therefore the land acreage for parks does not include all parkland owned by the Township. This land use category does include land area under agreement for future acquisition by the Township for parks and recreation.*

Undeveloped Lands

Agricultural

Agricultural lands are those that are dedicated to the production of crops and livestock and to the support of these operations. While Lower Paxton Township was once supported by agriculture, today this land use occupies a significantly smaller portion (14.5 percent) of the Township's total land area.

Woodlands

Woodlands are those land areas that have a significant tree-crown coverage and are stocked with trees capable of producing timber or other woods products. While the wooded slopes of Blue Mountain comprise the largest contiguous woodlands, this area, along with numerous smaller pocket woodlands, collectively comprise 18.9 percent of the Township's total land area.

Grassland/Open Space

Grassland/open space lands are characterized by uncultivated fields and emerging woodlands. Many of these areas were previously under cultivation, but now provide temporary or permanent open space uses for the Township. The grassland/open space designation was assigned to 2.5 percent of the Township's total land area.

The Built Environment – Opportunities and Constraints

Lower Paxton Township

Like many of its neighboring south-central Pennsylvania communities, Lower Paxton Township has evolved from an agrarian-based society to a highly developed, residential and commercial suburb to the City of Harrisburg. Construction of the Interstate Highway System fueled much of this development.

The Township still boasts some of the region's most scenic and natural landscapes, from the forested hillsides of Blue Mountain to the stream corridors of Paxton, Beaver, and Spring Creeks.

The Township's built environment consists of the buildings, transportation system, community facilities and connecting service lines, and other structures or manmade alterations to the natural landscape and the type, placement, and appearance of these structures can profoundly influence urban form and present opportunities for, or significant constraints to, growth.

Similarly, the relationship between land use and transportation is found within the Township along U.S. Route 22. Expansion of commercial zoning districts has drawn businesses and their customers further east along the U.S. Route 22 corridor, increasing traffic volumes and requiring improvements while passing by existing commercial areas and infrastructure. Future planning for this corridor would benefit from a long-term vision of what it could and should become.

The Township is also connected to adjacent municipalities through its sewage system. It currently delivers sewage to both the Harrisburg and the Swatara Wastewater Treatment Plants, however inflow and infiltration during rain events cause unacceptable

overflows. Once the moratorium is lifted, the system may experience a growth surge.

The most significant type of construction in Lower Paxton Township over the past 10 years has been residential, with the greater portion of this development coming as single-family detached housing. However, the sewage permit moratoria for the various drainage basins instituted in 1990s, has increasingly slowed the pace of this development. In addition to residential development, the Township has also experienced a number of commercial and industrial developments over the last 10 years; most of which have been sited along the U.S. Route 22 and Interstate 83 corridors. Developments like the Paxton Towne Centre and the Union Square Industrial Park represent these non-residential developments.

Regional Influences: Municipal Planning and Development Trends

An evaluation of the built environment should not consider Lower Paxton Township in isolation, but should look beyond its municipal boundaries to the built environment of adjacent communities, since what is happening in these areas also influences development within Lower Paxton. See Figure 2-7 for the Township's adjacent municipalities in Dauphin County.

Section 301(5) of the Pennsylvania Municipalities Planning Code (MPC) mandates that comprehensive plans discuss the relationship of the existing and proposed land uses to those in contiguous municipalities and the county. Fulfilling this requirement is critical to identifying potential planning policy conflicts, as well as potential opportunities to cooperate with neighboring jurisdictions.

Planning policies and initiatives, such as the municipal comprehensive plans and zoning ordinances, and the Dauphin County Comprehensive Plan, were reviewed in the development of this section. In addition, telephone interviews were conducted with municipal officials and staff to provide additional insights on existing and future development trends throughout the East Shore Region of Harrisburg.

The Township is participating in the PA Routes 39/743 Transportation Study, which aims to evaluate

transportation facilities and recommend improvements for these corridors. While this is primarily a transportation study, land use and growth are integral parts of the future of these corridors. Development, particularly commercial or industrial, in any one municipality will have impacts to other municipalities along these routes.

Middle Paxton Township, Dauphin County

Middle Paxton Township adopted its most recent comprehensive plan update in 1998. The plan characterizes the Township as a bedroom community for those who work in the Greater Harrisburg Area and outlines goals to maintain its rural atmosphere through limited development. The Township provides no public sewer or water, which in addition to natural limitations (soils, slopes, geology, etc.) precludes high-density development. State Game Lands 211 provide a forested backdrop to this dispersed community.

The greatest impact that limited growth in Middle Paxton Township may have on Lower Paxton Township will likely be in the use of retail services and transportation routes to those services. Should the eastern portion of Fishing Creek valley become developed, traffic volumes on Parkway East, Parkway West, and the Blue Mountain Parkway may increase, requiring future improvements. In addition, the Middle Paxton Township Comprehensive Plan proposes the development of bike and walking trails in the vicinity of Fishing Creek Valley Road and the Blue Mountain Ridge, which may support a recreational network should similar trails develop in Lower Paxton Township.

South Hanover Township, Dauphin County

South Hanover Township lies adjacent to Lower Paxton to the southeast. The Township adopted its current comprehensive plan in 1991 and is presently updating the plan. South Hanover Township enacted a Park and Open Space Plan in 1995 to network its individual park sites and the Swatara Creek Greenway. Lower Paxton Township may utilize this plan as a model for networking its own park system and in aligning open spaces for maximum benefit for all residents.

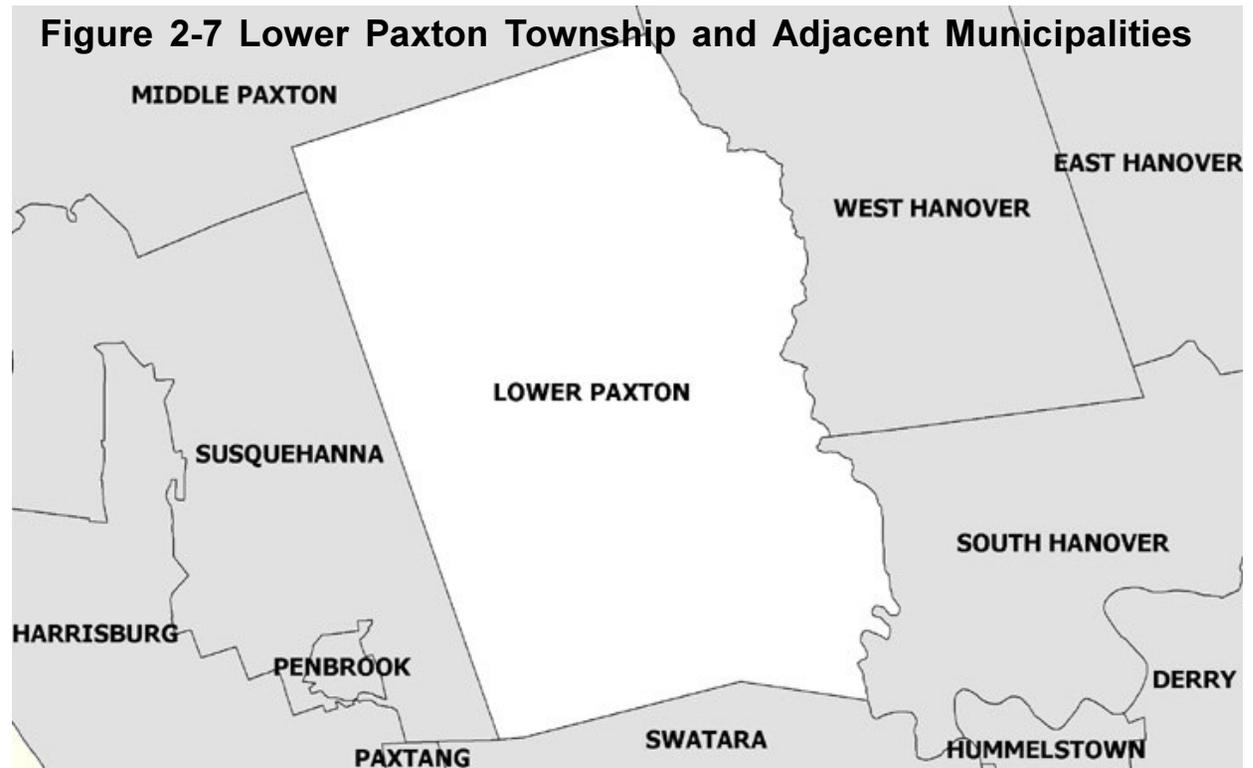
Various proposed residential developments will have an impact on transportation routes as they increase the population. Residents will utilize the transportation network to travel to and from work, as well as to shopping and entertainment venues in the Harrisburg and Hershey areas. As an alternate to U.S. Route 322, residents may use Union Deposit Road to reach the Harrisburg Area. Likewise, Lower Paxton residents may travel Union Deposit Road to reach the Hershey area, particularly if the roadway is improved in the future. South Hanover and Lower Paxton will need to cooperatively address these impacts to the transportation system.

Regarding intermunicipal relations, Lower Paxton Township plans to construct a new wet weather sewage treatment plant in South Hanover Township.

Susquehanna Township, Dauphin County

Susquehanna Township adopted its most recent comprehensive plan in 2000. While the southern portion of the Township has reached a build-out condition, development continues between Interstate 81 and the Blue Mountain ridge.

The plan outlines ideas for creating gateways to the community at its major access points, including those shared with Lower Paxton Township on Linglestown Road, Paxton Church Road, Elmerton Avenue, Walnut Street (U.S. Route 22) and Union Deposit Road. Open space corridors are identified and suggest conservation areas for greenways, historic preservation, bicycle and pedestrian networks. Interconnecting streets are recommended to reduce traffic congestion, specifically in regional commercial areas in the vicinity of Union Deposit Road.



These ideas for development and re-development, along the shared border of Lower Paxton and Susquehanna Townships, are relevant to cooperative planning and implementation between the municipalities.

Several residential and commercial developments in the vicinity of the Townships' shared boundary are in review or construction stages. These developments will likely contribute increased traffic volumes to Linglestown Road (PA Route 39), though primarily west of the Lower Paxton Township. In addition, the Susquehanna Town Center, a current proposal, would offer 22 store sites just west of the Interstates 81 and 83 interchange south of Valley Road and would deliver eastbound traffic to Valley Road and Lower Paxton Township.

The Boyd Big Tree Conservation Area is found in both Susquehanna and Lower Paxton Townships. Under management by PA DCNR, residents from across the state will have access to this 914-acre tract of forest and field habitats. The area is open to the public for limited hunting and recreation. Over ten miles of trails are used by hikers, hunters, and cross-county skiers. An additional 79.6 acres, acquired by the Central Pennsylvania Conservancy and located within Lower Paxton Township, will be added to the Conservation Area.

Swatara Township, Dauphin County

Swatara Township adopted its most recent comprehensive plan in 1976. An updated plan was begun in 1996 and revised draft plan is in preparation. The Township hopes to adopt the updated plan by the end of 2003. While much of the Township has been developed, the final revised plan is expected to identify remaining areas of potential development based upon existing infrastructure and services. Low-density residential development is anticipated in most available areas. Where commercial land use is designated, "urban village" is implied, such that these areas provide pedestrian friendly, human scale environments.

An increase in the number of residences will, in all probability, increase traffic volumes between the Union Deposit Road corridor and the Derry Street corridor. In light of current traffic volumes, traffic signal design for the

intersection of 61st Street (Page Road in Lower Paxton Township) and Derry Street is under way.

There are potential opportunities for the two townships to work cooperatively, particularly in regards to circulation. As development continues in the area surrounding Rutherford Heights, additional transportation improvements may be needed to facilitate traffic flows. The Townships would benefit from a cooperative effort to address these problems.

Swatara Township also recognizes pedestrian and bike traffic as relevant concerns for resident recreation and circulation. Pedestrian and bike activity areas and corridors are proposed as part of Swatara's revised comprehensive plan. Coordinated planning between Lower Paxton and Swatara Townships could result in a pedestrian/bicycle network for the residents of this area.

West Hanover Township, Dauphin County

The Township adopted its most recent comprehensive plan in 1992. Due to several land use/zoning changes made in the late 1990s, the plan's is currently being updated.

Additional residential development proposals have been submitted, totaling approximately 1200 new homes. The addition of these residences are expected to have a targeted impact on existing roadways that bridge or circumvent Beaver Creek (U.S. Route 22 and PA Route 39), since PA DEP has declined recent bridge proposals in light of sensitive wetlands along the stream.

The Central Dauphin School District serves both Lower Paxton and West Hanover Townships, as well as other surrounding municipalities. Due to projected enrollments and current programming, the school district is renovating existing facilities and constructing a new high school. The new high school will be located in West Hanover Township at the intersection of Linglestown and Piketown Roads.

West Hanover Township is pursuing open space conservation and a recreational network to connect open spaces with pedestrian and bike paths. Though Beaver Creek stream crossings may be limited, there may be

opportunities to connect conservation and recreation networks for greater regional gain. Lower Paxton Township has made initial contacts with neighboring municipalities to consider a greenway along Beaver Creek, linking to the Swatara Creek in the south, and the future Central Dauphin High School and Blue Mountain trails in the north.

Dauphin County

The County Comprehensive Plan is currently being updated from its 1992 predecessor with adoption anticipated in 2004.

Lower Paxton Township's previous Comprehensive Plans have generally been consistent with County plans. Historically, County plans have been developed from existing municipal plans, thereby generating consistency with little municipal initiative. The Pennsylvania legislature took steps to make planning more proactive in 2000, when it amended the Municipalities Planning Code to require greater consistency between county and municipal comprehensive plans. The current re-writing of the comprehensive plan attempts to take a regional perspective and its recommendations will entail greater municipal involvement, if planning goals are to be achieved. The Regional Growth Management Strategy developed by the Tri-County Planning Commission (Cumberland, Dauphin, and Perry Counties) will guide key components of the new County Comprehensive Plan in regards to focusing development and redevelopment around current infrastructure.

The County recognizes that for many years Lower Paxton Township welcomed residential and commercial development, but also acknowledges that the Township is home to some distinguishing cultural and natural features. While many of its farms have been developed, others remain and contribute a rural, historic flavor to the area as fields and pastures express the rolling topography. Winding country roads persist in the eastern portion of the Township and follow the dynamic landscape of the stream corridors. Unfortunately, acknowledgment, conservation, and/or preservation of these and other distinguishing features have not been a priority to date.

The County has attempted to outline alternative transportation routes and offer county-wide recreation through its pedestrian and bike path plan. Each township within the County is encouraged to implement local segments of the network and funding is available for such projects. Growing awareness of pedestrian access may support implementation, even expansion, of the plan in Lower Paxton Township.

Broader Regional Influences

Transportation improvements, initiatives for a regional light rail system (i.e., Corridor One), the proximity to major employment centers, educational centers, and Harrisburg International Airport (HIA) each have, or will have, profound effects on the Township's development.

Lower Paxton Township is very fortunate to be located at the heart of the Greater Harrisburg Region, with an economy highly interconnected with the Harrisburg-Lebanon-Carlisle Metropolitan Statistical Area (MSA). The Township is located within 5 miles of the City of Harrisburg—the state capital and a major employment generator for state government and supporting private service businesses. The Township's proximity to the City also places its residents in a favorable position to obtain a unique offering of quality services, including higher educational institutions, such as Penn State Harrisburg, Harrisburg Area Community College (HACC), and the Widener School of Law; performing art centers, including the Forum and Whitaker Center; museums, such as the Pennsylvania State Museum and The National Civil War Museum; transportation services, including Amtrak and the Harrisburg International Airport (HIA); entertainment and recreational attractions, such as Hershey Park and City Island; and a variety of passive and active recreational opportunities.

Other Influences

The Land Use Regulatory Environment

The Pennsylvania Municipalities Planning Code (MPC) provides the legal framework for local governments to enact, administer, and enforce both zoning and subdivision and land development regulations. Zoning is one method a community may use to regulate the use of land and structures. It is designed to protect public health, safety, and welfare, and to guide growth. In contrast, subdivision and land development regulations control how a use or activity relates to the land upon which it is located.

Lower Paxton Township has adopted a zoning ordinance and subdivision and land development regulations. These regulations, in part, implement the 1992 Comprehensive Plan. To this extent, the Comprehensive Plan establishes the framework by which these and other ordinances are developed and maintained. A review of ordinances is presented in Chapter 4 of this Plan.

Agricultural Land Preservation

Agricultural preservation tools have been used in Lower Paxton Township. The Board of Supervisors created the Township's Agricultural Security Area (ASA) by adopting Resolution No. 00-19. This ASA consists of six parcels collectively comprising 306 acres. Map 2 illustrates the location of these parcels.

Trends and Issues

- The majority Lower Paxton Township has been developed, predominantly as residential uses. However, a significant portion (35.9 percent) remains undeveloped.
- The largest type of construction in Lower Paxton Township over the past 10 years has been residential, with the greater portion of this development coming as single-family detached housing. However, sewage permit moratoriums have increasingly slowed the pace of this development. In addition to residential development, the Township has also experienced a number of commercial and industrial developments over the last 10 years; most of which have been sited along the U.S. Route 22, Interstate 81, and Interstate 83 corridors.
- Lower Paxton Township has strong ties to the surrounding region through various types of infrastructure.
- Lower Paxton Township will likely experience transportation impacts as adjacent municipalities approve residential subdivisions.
- Lower Paxton Township has existing intermunicipal agreements with adjacent townships regarding various municipal services. Further expansion of such agreements could provide the Township savings and greater regional connectivity.
- Agricultural preservation tools have been applied in Lower Paxton Township.



Transportation Network Profile

The transportation network of a community is the backbone for its development and its prosperity. It can help to attract a thriving society of merchants, or if poorly planned or maintained, can deter progress and overshadow the community’s positive attributes.

Existing Roadway Network

The existing roadway network of Lower Paxton Township consists of two interstate highways, a U.S. Route, and various arterial roadways, collectors and local roads. There are approximately 235 miles of roadway in the Township, consisting of 53 state miles and 188 local miles. The Township also owns and maintains seven bridges and 34 traffic signals. Map 3 illustrates the Township’s roadway network and functional classification.

Functional Roadway Classification

The efficient movement of vehicles within a community is dependent on a balance between all types of street facilities: limited access highways, arterials, collectors, and local streets. Streets, or roadways, are classified according to the mobility and land access that they provide. As a result, there is a significant relationship between transportation and land use.

The roadway classification system and its implementation may influence how adjacent land will be used. This does not necessarily imply that the land adjacent to major arterials, which provide high mobility and permit high traffic volumes, must be used for non-residential uses.

The dominance of this rationale has created strip development along many arterials and collectors. Rather, the classification system permits a general focus on the needs for mobility and access.

In planning for highway improvements it is important for planners to be cognizant of a functional classification scheme in guiding transportation planning efforts. Functional classifications are important in determining and applying design standards (cartway widths, rights-of-way acquisition, curbing, etc.) to roadway design or improvement and should be as consistent as possible at local and regional levels.

The functional roadway classifications illustrated on Map 3, Functional Road Classification, 2000, reflect the system currently used by the Harrisburg Area Transportation Study (HATS) and PENNDOT, which is approved by the Federal Highway Administration (FHWA). Functional classifications are also listed in Table 2-10.

Traffic Volumes

The most fundamental and visible description of a roadway’s functional classification is the volume of traffic using that roadway over a given time period. To standardize this analysis, traffic volume is usually expressed over a 24-hour period, factored by both day of the week and month of the year, to produce an Annual Average Daily Traffic (AADT) value. These values are shown on Map 4.

Roadway Management and Improvements

Roadway management in the Township is divided between PENNDOT and the Township Public Works Department (PWD). The PWD maintains the local transportation network within Lower Paxton Township, while the state maintains state and federal facilities. Township roadway maintenance services include resurfacing of Township roads, winter maintenance of both local and state roads, and maintenance of the seven municipal bridges.

Interstate	Principal Arterial	Minor Arterial	Collector
Interstate 81	U.S. Route 22	Colonial Road (SR 3017)	Blue Ridge Avenue (SR 2029)
Interstate 83		Linglestown Road (SR 39)	Nyes Road (SR 2019)
		Locust Lane (SR 3024)	
		North Mountain Road (SR 3019)	
		Rutherford Road (SR 3017)	
		Union Deposit Road (SR 3020)	

Source: PENNDOT



PENNDOT Improvement Projects

At the time of the Township’s 1998 Transportation Plan, the Township had already submitted 15 projects for inclusion in the following update of PENNDOT’s Transportation Improvement Plan. Improvement projects ranged from intersection improvements and roadway redesign to bridge replacement, pavement restoration and interstate widening.

In addition to scheduled improvements, PENNDOT has initiated a master planning study for Interstate 83. Consideration is also being given to the widening of Interstate 81 between the Maryland state line and Interstate 78, which would impact the Township. Studies are underway to address transportation on PA Routes 39 and 743, which connect the Harrisburg Region with Hershey.

The Transportation Enhancements Program (TEA-21) is also available to help make improvements for “non-traditional” forms of transportation (i.e., bicycle/pedestrian) within the Township. The program establishes a cooperative arrangement between the Federal Highway Administration, PENNDOT and the sponsor to implement projects that have a direct relationship with transportation use, needs and benefits. While Lower Paxton Township has not completed any such projects to date, the Transportation Enhancements Program offers future funding opportunities.

Intersection Operation/Signal Timing

An analysis of 27 key Township intersections was included in the 1998 Transportation Plan. The analysis evaluated level of service (LOS) for traffic flow through the intersections. Level of service is a quantitative measure of how much time delay is experienced at specific intersections and how much traffic is using a given road’s lane or lanes over a given distance. The LOS for particular locations is given a letter designation from A to F, with A representing free movement of a vehicle and F representing heavy congestion and excessive delay. The analysis showed that several intersections, both signalized and unsignalized intersections, provided less than a C LOS service, nearing unacceptable levels of service. The 1998 Transportation Plan outlined six improvements to address these locations. One of these six improvements has been completed (Nyes Road/Jonestown Road) and two others are in progress; Linglestown Road/Mountain Road - Linglestown Square and Nyes Road/Union Deposit Road. The remaining three have not yet been programmed for any particular timeframe.

- Nyes Road – Locust Lane — planned
- Nyes Road – Devonshire Heights Road
- Colonial Road – Crums Mill Road



Roadway Conditions and Geometric Deficiencies

Roadway conditions refer to the physical properties and structural integrity of the roadway. Several of the Township roads are in need of improvements to facilitate increased safety, promote growth and accommodate the growing needs of the community. Improvements to existing, established roadways generally consist of pavement overlays, pavement widening, shoulder construction and/or widening, and drainage improvements. Geometric deficiencies refer to the horizontal and vertical alignment or design of the roadway.

The 1998 Transportation Plan included a detailed analysis of roadway deficiencies in the Township. Existing deficiencies (1998) were typically intersection or geometric inadequacies, while projected future deficiencies had primarily intersection or LOS problems. Deficiencies of both state and Township roads that met the requirements for improvements were outlined in the Transportation Plan with their respective funding sources. Proposed improvements included eleven state, ten Township, and nine Township/private projects. Recently completed projects from the plan are listed in Table 2-11.

The following is a list of deficiencies that fell short of the requirements for capacity and safety improvements, but were nonetheless included in the 1998 Transportation Plan. This list is included here as it supports various concerns expressed by Township residents in the CPU meetings held in the fall of 2001.

- The Township lacks a centrally located, north-south connector road.
- Four-way stop conditions, such as the intersection of North Houcks and Devonshire Roads, are operationally difficult for the public.
- Several locations have inadequate sight distances and poor geometry.
- Crums Mill Road, because of its proximity to new areas of development, could become a critical corridor in the future.



- Many shoulders on secondary roads are not conducive to pedestrians or bicycles.
- Defined pedestrian/bicycle access routes throughout the Township are needed.

Traffic Calming Initiatives

As a result of traffic speeds and volumes in residential neighborhoods, residents of Lower Paxton Township have pursued traffic calming initiatives. The Township has installed speed tables at four locations. Speed studies were completed for two sites before and after installation and revealed an average speed reduction of 3 to 4 mph. Other traffic calming devices have been installed as part of the Estates of Forest Hills development. With the potential connection of Continental Drive between Forest Hills and Centennial Acres, developers have agreed to provide funding toward the installation of calming along Continental Drive during its construction. Additionally, curb extensions have been installed along Dartmouth Street just south of Locust Lane.

The Township has initiated a traffic calming policy for existing township roadways. A draft policy has been prepared. The draft policy exceeds existing PENNDOT guidelines for traffic calming by warranting the installation of devices where the PENNDOT guidelines only prioritize installations.

Walking and Biking Trails

Lower Paxton Township has limited pedestrian and bicycle facilities. Residents who attended the CPU meetings consistently expressed that the lack of pedestrian/bicycle paths was a least-liked feature of the Township. They noted this within neighborhoods, as well as along common routes of travel within the community. The HATS' 1997 Bicycle/Pedestrian Transportation Plan highlighted problem areas, specifically U.S. Route 22, that are particularly unaccommodating to bicyclists and pedestrians.



The Bicycle-Pedestrian Transportation Plan recognized that a majority of travel by bicyclists occurs on existing roadways. The following roadways were identified for inclusion as part of an overall, regional bicycle/pedestrian network:

- PA Route 39/Linglestown Road
- Mountain Road
- Blue Ridge Avenue
- Nyes Road
- Union Deposit Road
- Newside Road
- Page Road
- Spring Creek Road
- Rutherford Road
- Houcks Road

The inclusion of these roadways was intended to offer guidance to the Dauphin County Maintenance Manager and PENNDOT District 8-0 as it proceeds with highway betterment and maintenance programs.

Public Transportation

Public transportation reduces congestion, provides a mode of transportation for those without automobiles, relieves stress on roadways, bridges, and intersections, reduces the demand for expensive infrastructure upgrades,

**Table 2-11
Recently Completed Transportation Planning Projects**

Completed Project	Funding	Year	Comments
Widen Union Deposit Road btw Interstate 83 and Rutherford Road, including signal improvements at the Rutherford Road intersection	State/Federal	2000-2001	
Construct a connector road from Devonshire Road to North Highlands Drive	Private	2001	in conjunction with Amber Fields (previously Christian Fields) development
Install a traffic signal at Nyes Road and Jonestown Road	Local	2001	
Realign portions of Fairmont Drive, Devonshire Road, and Patton Road	Local	2001	Portion of Devonshire Road realigned during construction of the Paxton Towne Centre
Signalized the intersections of Linglestown Road with Forest Hills Road and Dover Road	Local	2001	

Source: Lower Paxton Township



increases air quality, and reduces health risks. Capital Area Transit (CAT) provides mass transit services for residents of the Harrisburg Area. CAT operates six bus routes and manages four park and ride sites in Lower Paxton Township. CAT services also provide connections to Harrisburg International Airport, Amtrak, and Trailways/Greyhound terminals at the Harrisburg Transportation Center.

CAT has adjusted its service to the Township, to include service to Community General Osteopathic Hospital and The Point Mall. In addition, CAT bolstered its service to these areas by extending Route 15 service into the evening hours. With evening transit service to commercial areas and links to downtown Harrisburg, the Township comparatively has the best evening service in CAT's system.

Rail Transportation

Neither freight nor passenger rail service is physically located in Lower Paxton Township, however services are available within the Greater Harrisburg Area.

Amtrak provides rail passenger service to Harrisburg area residents through its Pennsylvanian, Three Rivers, and Keystone services. Residents have access to the Amtrak station (Harrisburg Transportation Center) located at 4th and Chestnut Streets in downtown Harrisburg via personal automobiles and CAT buses.

Aviation Facilities

While there are no aviation facilities in Lower Paxton Township, residents and employees of businesses within the Township have ready access to two regional airports: the Harrisburg International Airport (HIA) located south of the Township in Lower Swatara Township, and the Capital City Airport located in Fairview Township, York County. These airports are crucial to business and industry.

Public Comments

While traffic volumes are strictly quantitative, residents of Lower Paxton Township perceive traffic volumes as a serious problem. Those who attended the fall 2001 CPU meetings valued traffic, as a general condition and in specific locations, as the least liked feature of the Township. Traffic along major roadways, such as the interstates, U.S. 22, and Union Deposit Road, was mentioned by participants from all but one CPU (the Northwest Quadrant); several intersections were also identified as difficult to negotiate. Future changes in traffic volumes, as well as improvements designed to improve traffic flow, will continue to influence these perceptions. The public also noted that the Township lacks a centrally located north-south connector road.

Trends and Issues

- Increased residential and commercial development have increased traffic volumes and amplified traffic problems.
- A reliably efficient transportation network would typically be comprised of an increasing number of roadways or improvements in each of the roadway classifications, from interstate to local roads respectively.
- Improvements to the transportation network are implemented by state/federal, local and private sources. State sources are available through such funding programs as the Transportation Improvement Program (TIP) and the proposed SAFETEA (Safe, Accountable, Flexible, and Efficient Transportation Efficiency Act - reauthorization anticipated in 2004).
- Lower Paxton Township has developed a list of improvements to address problem areas. While this list is neither prioritized nor programmed for the long-term, projects from the list, such as intersection improvements, have been completed since 1998.
- Increased development will likely increase traffic volumes in the Township, particularly along major roadways.
- The intersection analysis completed for the 1998 Transportation Plan resulted in six planned improvements and one completed improvement project. One additional project is underway.

- A number of improvement projects, as well as deficiencies that fall short of the qualifications for improvements, were outlined in the 1998 Transportation Plan. It is anticipated that transportation funding sources from all levels of government will continue to fall short of project maintenance/improvement needs.

- Safe pedestrian and bicycle paths are lacking throughout the Township. While sidewalk requirement for new developments facilitate pedestrian traffic within a neighborhood, a more comprehensive local plan for non-motorized traffic is needed.

- While CAT offers multiple east-west bus routes through Lower Paxton Township, no north-south bus service within the Township is provided.

- Park and ride locations are found in the northern and western portions of the Township, however no such facilities are operated in the rapidly developing central and southeast regions.

- CAT ridership in general has declined for years, yet the Colonial Park Route (Route 12), which has its destination in Lower Paxton Township, has the highest average number of riders per day.

- As a primary retail center for the Harrisburg region, the Township hosts a number of major traffic generators. The Colonial Park Mall, Colonial Commons and the recent opening of Paxton Towne Centre provide over 1.75 million square feet combined of retail space and are significant traffic generators.

- A greater reliance on single occupant vehicle travel will result in corresponding increases in congestion. (CAT's Transit Alternatives analysis reveals that traffic volumes should increase by 19 percent between 1990 and the year 2020 on the U.S. Route 22 Corridor.)

- There has been major growth in the development of warehousing and logistical-type operations in the greater Harrisburg region. This is being driven by just in time delivery practices, containerization, smaller shipments of goods and a greater reliance on motor carriers in general.



Cultural Resources Profile

Cultural resources consist of prehistoric and historic districts, sites, structures, artifacts, and other physical evidence of human activities considered to be important to a society. Knowledge of these resources increases our understanding and appreciation of the local heritage and improves the Township's overall quality of life.

Federal and State Regulations

Federal and state historic preservation laws require federal and state agencies to consider the effects of their actions on historic and prehistoric sites, districts, buildings, and structures eligible for inclusion in the National Register of Historic Places.

According to the National Park Service, "The National Register is part of a national program to coordinate and support public and private efforts to identify, evaluate, and protect our historic and archeological resources." Federal legal mandates include Section 106 of the National Historic Preservation Act of 1966, Executive Order 11593, and regulations of the Advisory Council on Historic Preservation. Pennsylvania's legal mandates include the Environmental Right Amendment, Article 1, Section 27 of the Pennsylvania Constitution, and the Pennsylvania Historic Preservation Act of 1978.

The Pennsylvania Historical and Museum Commission's (PHMC) Bureau for Historic Preservation develops, coordinates and administers the program to identify, protect and enhance buildings, structures, districts and neighborhoods of historic and architectural significance in public and private ownership throughout the Commonwealth. According to the PHMC, there are no properties within Lower Paxton Township that are listed on the National Register of Historic Places. However, three sites are eligible for nomination to the National Register.

- The Saint Thomas Historic District
- A schoolhouse along Union Deposit Road
- Unnamed property on Conway Road

Local Historic Preservation Efforts

The Historical Society of Dauphin County (HSDC) located at 219 South Front Street in Harrisburg, Pennsylvania, acts as a records depository for both public and private records related to those who live and work in Dauphin County. The Historical Society has numerous resources for the history of the region as a whole, however only a single volume, *Lower Paxton Township Pennsylvania: 1767-1967*, published by the Township, specifically addresses the Township.

The Village of Linglestown has recently taken steps to preserve its resources within a larger community improvement effort. Out of concern for the health, safety,

and character of this small community, residents developed *The Village of Linglestown Action Plan (2000)* to prioritize desired capital improvements and development characteristics. The Plan recommends exploration of the village as a historic district, which has specific requirements for designation, and of agricultural preservation of the surrounding landscape. In addition, it refers to "village character," which though not defined in the report, reveals a concern for the social network and aesthetics in future development of the community and specifically recognizes local architecture as a contributor.

A group of individuals, known as the Lower Paxton Township Historical Society, has been meeting for several months. These citizens have expressed interest in preserving the Township's historic resources.

Historical Markers

The PHMC's historical marker program, which was established in 1946, represents one of the Commonwealth's oldest and most popular historic preservation programs. The easily identifiable blue and gold markers highlight significant people, places, and events in the state and nation's history. There are over 73 historical markers located within Dauphin County, several of which are located within Lower Paxton Township (Table 2-12) and identify the Township's historical past.



Additional Historical Sites

While three sites in Lower Paxton Township are eligible for the National Register and three others have been marked with PA Historical Markers, additional sites throughout the Township have significant historical and cultural value. The Village of Linglestown hosts a number of structures that represent its development over the past two hundred years. Several churches built prior to the 20th century still stand within the rural landscape, and the various cemeteries also contain historical information and significance. Residential districts, such as old Colonial Park and Paxtonia, mark architectural styles prevalent at the time of their construction. Even where structures no longer stand, or have been considerably modified from their period of significance, local residents are still familiar with the meaning of these sites to their local community.

This information about the historical significance of local sites and structures is relatively undocumented. No architectural survey or database exists that records the known details of these resources. Tax records and property owners, particularly those who maintain homes of family heritage, are other important resources.

Cultural Landscape Resources

While we can look at resources from an ecological perspective, we can also see them as part of our culture. In Lower Paxton Township, the backdrop of the forested mountain, the winding two lane roads through agricultural fields and along stream corridors, the rolling topography all contribute to the atmosphere of a suburbanizing community on the rural fringe. If this atmosphere is to continue, these assets will need to be protected. Development can place pressure and produce swift change to rural communities without policy to protect desirable features and characteristics.

In addition to the natural resources mentioned above, constructed resources, such as local architecture and early development patterns contribute to the character of the local landscape. Porch designs, window placement, and rooflines, particularly those prior to WWII, can be unique to a region or locale. With some analysis, the historic patterns that have created and influenced the development of the community can be revealed, and if so desired, written into guidelines for future development for continuation of these unique local aesthetic features.



Finally, there are resources, or at least reasons, that Lower Paxton residents value the place they live. A number of these were expressed throughout the planning process as it involved numerous public meetings and opportunities for expression.

- Residents described Lower Paxton, or at least parts of it, as a rural community and cited its proximity to Harrisburg and cultural events as reasons to like the Township.
- Diversity of retail services was also noted among the likable characteristics of the Township.
- In the more suburban areas of the Township, there are established neighborhoods that residents value; these provide social networks and a sense of belonging.
- While parks and recreation constitute an individual planning component of the comprehensive plan, neighborhood parks and open spaces were among the characteristics listed under “things I like most about Lower Paxton Township.”

Marker Name	Date Dedicated	Location	Category	Marker Text
Barnett's Fort	12/22/1947	PA 39, 1.3 miles E of Linglestown	Military, Native American	North at the head of Beaver Creek, Joseph Barnett's log house was a frontier refuge in 1756-63 against Indians raiding the frontier. His son William was stolen by Indians in 1756 and not recovered until 1763 by Col. Henry Bouquet.
Patton's Fort	12/22/1947	PA 39, 1.4 miles W of Linglestown	Military, Native American	Nearby stood Patton's Fort, a station of the Paxton Rangers, who defended the gaps and farmsteads along the Blue Mountains from the Susquehanna River to Swatara Creek near Indiantown against Indian raids in 1756 to 1763.
Paxton Riflemen	12/24/1947	US 22, 5.7 miles NE of Harrisburg	Military	Under Capt. Matthew Smith and Lt. Michael Simpson, a company of riflemen from Paxton Township marched to Quebec, Canada, to serve with Montgomery in the attack on that city on December 31, 1775.

Public Comments

Few responses given during the Fall 2001 CPU meetings related directly to cultural resources. Respondents did list the quaintness of Linglestown and the rural agricultural landscape as community assets, indirectly expressing value for local heritage. More significantly, participants listed the Township's proximity to culture and cultural activities (outside the Township) among its most-liked features and an absence of cultural activities and places among its least-liked features. Additionally, respondents listed the lack of a Township center.

Trends and Issues

- In addition to the Township's development history that has transformed many agricultural lands into residential, commercial, and industrial sites, its cultural history has transformed the Township from a community of farmers to a diverse network of residents, community and social organizations, businesses, and service providers. This transformation has not been analyzed, nor has a recent detailed community development analysis been completed.
- None of Lower Paxton Township's historic properties are listed on the National Register of Historic Places. Three sites, however, are currently eligible for nomination.
- The Lower Paxton Historical Society was formed in 2003 by citizens interested in preserving the Township's historic resources.
- There are three state historic markers located in Lower Paxton Township. Additional sites of local significance have not been identified.
- While there are strict criteria for National Register eligibility, additional sites and structures of local significance exist within Lower Paxton Township. These are currently uncataloged.
- Many characteristics of Lower Paxton Township contribute to its quality of life. If this quality of life is to continue, these features must be identified and conserved as the Township continues to develop its services and resources.



Community Facilities and Services Profile

As reported by CPU meeting participants, Lower Paxton Township's community facilities and services lead the most liked features of the Township. As the single most liked feature of the Township, parks and recreational facilities will be highlighted at the end of this section. Community facilities are shown on Map 5.

Public Safety

Police

The Lower Paxton Township Police Department provides 24-hour services to its residents and businesses through three primary functions: (1) law enforcement, (2) order maintenance, and (3) community service.

The Township employs a police chief as the commanding officer of the department and the Township's Public Safety Director. The department currently includes 49 sworn officers (40 uniformed and 9 plain-clothed) and five civilians employees for administrative assistance. Officer assignments range from patrol, traffic safety, and criminal investigation, juvenile investigation to crime prevention. The Community Policing Unit provides a number of preventative safety programs to the community. In addition to these local service units, the police force participates in two specialized county police efforts, the Dauphin County Drug Task Force and the Dauphin County Crisis Response Team.



According to the Lower Paxton Township Police Department, crime and incident activity trends show that the Township's criminal incidents have been decreasing in recent years and appear to be stabilizing. An increase in the number of retail and commercial areas has coincided with increased calls for service and traffic related incidents.

The department's highest crime incident rates are for property crimes (e.g., automobile break-ins) and retail thefts. Both types of crime, while typically not considered serious or violent, are time-consuming for the department to investigate. Traffic related service calls are also increasing and a key concern of the department. As stated previously, changing demographics, particularly youth, may impact crime rates.

Fire

Fire protection services in Lower Paxton Township are provided by three primary response agencies that include the Colonial Park Fire Company (Station 33), Paxtonia Fire Company (Station 34), and Linglestown Fire Company (Station 35). The Colonial Park Fire Company is planning a new station facility on South Houcks Road. While each company has a primary response area, all three companies supply mutual aid throughout the Township and to surrounding communities. Emergency dispatching is handled through the Dauphin County Enhanced 911 (E-911) Communications Center.

The delivery of fire protection services is highly dependent upon manpower. Each fire company is staffed entirely by volunteer personnel. Fortunately, volunteerism is steady or increasing in all three companies, a marked contrast to statewide trends of decreased volunteer participation.



Fire Company response trends, as indicated by the Lower Paxton Fire Marshal's Report, show that the Township's fire incidents have been steadily increasing, particularly for the Linglestown and Colonial Park Companies. This may be attributable to the growth in development that has occurred in these areas over the past fifteen years.

Fire Equipment

The service condition of fire fighting apparatus is relevant to the assessment of services in that the service life of fire-fighting equipment is advised by the National Fire Protection Association (NFPA). The Township's fire companies own and operate a variety of fire fighting apparatus. With foresight to the replacement and addition of fire fighting apparatus, the Township has implemented a Fire Equipment Capital Plan. This plan allocates \$250,000 annually toward the replacement costs of fire apparatus. Additional funds are raised through the sale of older equipment and a real estate tax levy.

Emergency Medical Services

South Central Emergency Medical Services (EMS) provides ambulatory services to the residents of Lower Paxton, East Hanover, and West Hanover Townships and to some residents of South Hanover Township. South Central EMS headquarters are located at 8065 Allentown Boulevard in West Hanover Township; one EMS Unit is stationed on Jonestown Road in Lower Paxton Township.



Educational Facilities

Public Facilities

The Central Dauphin School District provides public education services for residents of Lower Paxton, Middle Paxton, Swatara and West Hanover Townships and the Boroughs of Dauphin, Paxtang and Penbrook. The district serves a student population of 11,015, and owns and operates nineteen school buildings. Six elementary and four secondary facilities are located within Lower Paxton Township. The Dauphin County Technical School, located on Locust Lane, supplements the Central Dauphin School District.

The trend of enrollment increases is expected to continue, as shown in Table 2-13. Secondary enrollment in particular has been projected to increase until the 2005-06 school year, as determined by the Pennsylvania Economic League's analysis of the district's enrollment pattern (2001).

In light of current and projected enrollment, the district's building efforts entail construction of a new high school and additions and renovations of existing facilities. The new high school will be located at the intersection of Piketown and Linglestown Roads in West Hanover Township. Construction began in 2002 with completion anticipated for the 2004/2005 school year. Major additions and renovations to other district facilities are tentatively scheduled for completion for the 2005-06 school year.

Dauphin County Technical School (DCTech) is a full-time, comprehensive public vocational-technical high school serving Central Dauphin, Derry Township, Halifax Area, Lower Dauphin, Middletown Area, and Susquehanna Township School Districts. DCTech offers programs in communications, construction, transportation and human services.



**Table 2-13
Central Dauphin School School District Projected Enrollment**

Year	PA Economy League		PA Dept of Ed
		Births Fixed at 895	
2000-2001 (actual)	11,004	11,004	11,004
2001-02	10,963	-	11,003
2002-03	10,857	-	10,989
2003-04	10,806	-	10,963
2004-05	10,726	-	10,953
2005-06	10,589	10,621	10,971
2006-07	-	10,537	11,012
2007-08	-	10,454	11,037
2008-09	-	10,304	11,020
2009-10	-	10,139	10,992
2010-11		10,106	11,108
Pupil change			
2000-01 to 2005-06	-415.0	-383.0	-33.0
Percent change			
2000-01 to 2005-06	-3.8	-3.5	-0.3
Pupil change			
2000-01 to 2010-2011		-898.0	104.0
Percent change			
2000-01 to 2010-2011		-8.2	0.9

Source: Pennsylvania Economy League, 2001; PA Department of Education, 2002.



Private Facilities

Four private schools are located within Lower Paxton Township: (1) the Harrisburg Christian School, (2) the Holy Name of Jesus School, (3) the Londonderry School, and (4) the Covenant Christian Academy. The Harrisburg Christian and Holy Name of Jesus Schools have been part of the Township for over 30 years. Harrisburg Christian offers educational curricula for grades K-12. The Holy Name of Jesus School and the Londonderry School provide K-8 grade programs. Covenant Christian Academy was established in 1997 and provides a classical education program for grades K-12. Home-schooling is a private educational alternative that is also utilized by Lower Paxton Township families.

Other Educational Facilities

In a society where there are more two-income and single parent families, daycare and preschool services have become a necessary part of the educational services. While these facilities originally provided simple childcare, increasing focus on school preparation has led to the integration of formalized educational objectives and programs with childcare services. There are several commercial daycare and preschool facilities in the Township. Several of these facilities also provide after school care for elementary-aged children. In addition there are numerous private in-home services.

Library Facilities

Public library facilities and services are provided to the residents of Lower Paxton Township through the Dauphin County Library System (DCLS). The East Shore Area Library, a DCLS branch library, opened a store front facility in 1967 in the Colonial Park Mall. In 1976, the Library System acquired its current site at 4501 Ethel Street behind the Colonial Park Mall. An expansion project in 1985 added additional space for collections and library programs. An adjacent property was acquired in 1998 for future additional parking needs. This facility is now considered the “flagship” of the County Library System.

As citizens of the Commonwealth, residents of Lower Paxton Township also have access to the following State Regional Resources Centers: Free Library of Philadelphia, Penn State University Libraries in State College, Carnegie Library of Pittsburgh, and State Library of Pennsylvania.

Postal Service Facilities

The United State Post Office in Lower Paxton Township can be found at 5901 Jonestown Road. Residents listed the post office as one of the most liked features of the Township.



Health Care Facilities

The citizens of Lower Paxton Township are serviced by a wealth of medical facilities and expertise. The Community General Osteopathic Hospital, located at 4300 Londonderry Road, is a private, non-profit PinnacleHealth System hospital that serves as the primary medical facility for East Shore residents. Residents of Lower Paxton Township and the East Shore are also serviced by two Pennsylvania Department of Health licensed and regulated nursing home facilities: Manor Care Health Services and the Jewish Home of Greater Harrisburg. Villa Teresa and Colonial Pines Golden Age Home provide additional residential and health care services to senior residents of the Township and the region.

Municipal Services and Facilities

Lower Paxton Township owns and operates various facilities located throughout the Township: the Lower Paxton Township Municipal Building, municipal public works building, the Friendship Community Center, and the Lower Paxton Township Compost Facility. Solid waste collection and disposal is contracted to Waste Management of Central Pennsylvania.

The Francis R. Mummert Municipal Building, which is located at 75 South Houcks Road, houses office space for Township staff and officials, public meeting rooms, and serves as the headquarters for the Lower Paxton Township Police Department. As a result of growth in population and services, the Township has purchased the former AMP, Inc. research facility on Prince Street. The Township has begun to renovate the facility for use as the



new Township municipal building and, once moved to the new location, will sell the existing Township building.

The Township's Public Works Department (PWD) is located in the Jack F. Hurley Transportation and Maintenance Building at 5975 Locust Lane. This 25,000 square foot facility opened in 1988. Photographs taken by members of the Planning Advisory Committee and discussion items listed by Township residents of valued features within the Lower Paxton community included the PWD and its services.

The PWD provides for the maintenance of public facilities and the development of municipal properties and related services. The following list summarizes the services provided by the PWD:

- Roadway resurfacing, lining, signing, patching and repair
- Winter maintenance
- Maintenance of traffic signals and bridges
- Right-of-way grading and maintenance
- Installation and maintenance of storm sewer systems
- Park maintenance, including athletic fields and courts
- Municipal vehicle and equipment maintenance.

The Lower Paxton Township Authority and the Township's Sanitary Sewer Department provide sewer services to residents. A summary analysis is reported in the following Community Utilities Profile section.

Public Comments

The various aspects of public safety, i.e. emergency services, received numerous responses for most liked features of Lower Paxton Township during the Fall 2001 CPU meetings. The terms "responsive," "professional," "quality," and "highly visible" were used by participants to describe the quality of the Township's police, fire, and emergency medical services. Police responsiveness was noted specifically in the Northwest and Southeast Quadrants of the Township.

Educational facilities was another one of the community services recognized as an asset of the Township. Participants in the CPU meetings identified both public and private institutions as contributing positively to the Township's quality of life.

CPU meeting participants from the Colonial Park North and Southeast Quadrants identified the East Shore Library as an asset to the Township and specifically to their CPUs. Participants from Colonial Park North also recognized the library as a community meeting place in their CPU neighborhood.

In further recognition of community services, participants of the Fall 2001 CPU meetings listed the Township's health care facilities as community assets. Residents of the Colonial Park South CPU specifically noted Community General Osteopathic Hospital. In a broader perspective, residents of the Union Deposit CPU noted the availability and variety of medical services and facilities in their local area. Members of the Planning Advisory Committee added local nursing and residential care for seniors to the list of most liked features of Lower Paxton Township.

CPU meeting participants mentioned the Township's municipal services repeatedly among the most liked features of the Township. Road conditions, snow removal, and contracted services (trash removal) were specifically noted in several different CPUs. Photographs of "most liked features" taken by the Planning Advisory Committee also included the PWD and the Township's compost facility.

Trends and Issues

- Analysis of the Fall 2001 CPU meeting results indicated that more than one-third of the responses given for most liked features of Lower Paxton Township related to community services.

Police Services

- Crime and incident activity trends as reported by the Lower Paxton Township Police Department show that the Township's criminal incidents have been decreasing. Overall, the total number of incident calls has been increasing over the years due to the Township's increase in population and commercial services.

- Continued growth of the East Shore Region, coupled with the existing traffic deficiencies, may reduce the level of service (e.g. response times) currently provided by the Lower Paxton Township Police Department.

- The department's top concerns are increasing numbers of unsolvable crimes, retail thefts, and traffic related service calls.

- The police department is actively involved in the community through outreach and prevention programs, as well as direct solicitation of public opinion.

Fire and EMS Services

- The fire stations of Lower Paxton Township are currently located in the most densely populated areas of the Township. Additional development in the southeastern portion of the Township may require additional service sites or a joint service agreement with adjacent municipalities to maintain the current level of fire protection.

- Currently, the Township’s fire apparatus meet NFPA safety standards.

Educational Facilities

- The Central Dauphin School District is currently pursuing design, construction and renovation of secondary facilities in anticipation of an enrollment peak and to alleviate spatial constraints in the elementary school facilities.

Library Facilities

- The East Shore Branch of the Dauphin County Library System is centrally located and easily accessible to Township residents.
- Continued growth in the Township may require additional support and expansion of the East Shore Branch in order to serve Lower Paxton Township and outlying municipalities of Dauphin County.

Postal Service Facilities

- The branch office of the United States Postal Service is centrally located and easily accessible to Township residents.

Health Care Facilities

- A variety of health care facilities are available to residents of Lower Paxton Township.

Municipal Facilities and Services

- Lower Paxton Township’s municipal facilities have, to date, met the Township’s service level needs. Growth in the Township will likely require the expansion of staff, equipment and programs to maintain the current quality of municipal services. The Township has made plans to acquire an existing vacant facility.

Recreation and Open Space

Lower Paxton Township residents live in proximity to a variety of recreational amenities from publicly owned lands to private facilities. Combined, these facilities constitute more than 800 acres of recreational and open space land and provide the citizens of Lower Paxton Township with an abundance of recreational opportunities in the form of neighborhood parks, community parks, and natural resource areas. An inventory of recreational amenities is shown in Table 2-14 and on Map 6.



The Township park facilities support a high level of activity. The Parks and Recreation Department has estimated its visitor use at over 500,000 park visitors per year. Funds and facilities are acquired through purchase, land donations and fee-in-lieu payments that are required by the Subdivision and Land Development Ordinance.

The Township opened the Friendship Community Center (FCC) in January 2000. This 59,000 square foot facility offers a variety of fitness, recreation, and social resources for members of all ages. Membership is open to residents and non-residents for a membership fee.



The Parks and Recreation Department sponsors a number of summer programs throughout the Township. The Department also sponsors sports leagues, seasonal special events, bus trips and offers discount tickets to area amusement and resorts throughout the year.

Lower Paxton Township currently has no park, recreation, and open space plan to address park planning and development activities. Policies for acquisition of park land have been established. The Township’s Subdivision and Land Development Ordinance stipulates a land donation or fee-in-lieu (of land donation) for residential subdivision developments.

Two properties have been programmed into the Township’s recreational future. The Township recently acquired a tract of land formerly owned by AMP, Inc., and now named the Thomas B. George, Jr. Park. The George Park has not been improved since its acquisition, though improvements to this future community park are anticipated.



Through a purchase agreement, the Township will acquire the Wolfersberger Tract located on Wenrich Street east of Linglestown. This 93-acre parcel consists of approximately 50 acres of relatively flat, formerly agricultural fields and approximately 40 acres of woodlands and shallow ravines. Due to the large size of the tract and its natural condition (topography and vegetation), the Township will likely develop the site for both active and passive recreational uses. Final purchase of the tract is scheduled for 2010.



Parks and recreation services are consistently listed by Township residents as the features that they liked most about Lower Paxton Township. The FCC was listed separately, which indicates the community’s appreciation for this particular facility. Among the features that residents like least about Lower Paxton Township was the lack of pedestrian and bike trails in the Township. The Township’s Subdivision and Land Development Ordinance requires the provision of sidewalks in development communities of greater than 1.0 dwelling unit per acre, however it does not specifically require the provision of other pedestrian and bike pathways. Through community planning meetings, residents have expressed that these are desirable features for their community.

In addition to Township parks and recreational facilities, the Boyd Big Tree Conservation Area, and the Capital Area Greenbelt provide regional recreation opportunities for local residents.

**Table 2-14
Park and Recreational Facilities in Lower Paxton Township**

Name	Location	Size (acres)	Orientation-Active/Passive	Ball Fields/Courts	Play Equipment	Picnic Tables	Pavilions	Restrooms	Water and Electric	Walking/Biking Trails
Community Parks										
Brightbill Park	Colonial Commons/Rt 22	41	A	Y	Y	Y	Y	Y	Y	Y
Kohl Memorial Park	Dow how er Road	17	A	Y	Y	Y	Y	Y	Y	Y
Koons Park	Lingestow n	33	A	Y	Y	Y	Y	Y	Y	
Lingle Park	Pleasant Road	20	A	Y	Y	Y	Y	Y	Y	
Neighborhood Parks										
Centennial Acres Park	Continental Drive	4	A	Y	Y	Y	Y	Y		
Forest Hills Park	Forest Hills Drive	5	A	Y	Y	Y				
Hocker Park	Blue Mountain Parkw ay	2	P			Y				
Hodges Heights Park	Conw ay Road	2	A	Y	Y	Y	Y		Y	
Hurley Fields	5975 Locust Lane	5	A	Y				Y		
Kings Crossing Park	Kings Crossing	5	A	Y	Y	Y	Y	Y	Y	
Lamplight Park	Mayfair Drive	5	A	Y	Y	Y	Y	Y	Y	
Meadow Brook Park	Oak Avenue	2	A	Y	Y	Y				
Ranger Fields		9			Y			Y		
Natural Resource Areas										
Buchanan Tract	Blue Mountain Parkw ay East	40	P							
Club Estates		2	P	Y		Y				
Forest Hills Park	Forest Hills Drive	25	P							
George Memorial Park	Blue Mountain Parkw ay	12	P							Y
Hocker Park	Blue Mountain Parkw ay	10	P							
Leisure Tract		5	P							
Rockford Heights		2	P							
Total park acreage		246								
Future Park Development										
Wolfsberger Tract (under agreeer	Wenrich Street	93	TBD							
Thomas B. George, Jr. Park (George Park)		37	TBD							
Total park acreage available		376								

Source: Low er Paxton Tow nship

Neighborhood Park (N): a centrally located park of one to ten acres within a 1/4-1/2 mile service area.

Community Park (C): a park designed to serve two or more neighborhoods with an optimal size between 20 and 50 acres.

Natural Resource Areas (NR): an area intended to protect significant natural resources, unique landscapes, open space, and scenic views. Size and location criterion standards are dependent on resource availability and opportunity.

Recreation Guidelines

In the past, the common measure of a park, recreation, and open space system's spatial and service requirements was the application of 10 acres per 1,000 population standard, as researched and developed by the National Recreation and Parks Association (NRPA). Applying the old standard results in a recommended 442 acres of recreational land for the Township. With 246 acres of developed park and natural resources lands for this use and the intent to develop the George Park and the Wolfersberger Tract, the total rises to 376 acres. This leaves a 66 acre shortfall in park lands.

The NRPA has revised their park, recreation, and open space standards and guidelines (1996) to include various planning factors unique to each community. Considering the new guidelines, a complete assessment of the Township's recreational resources would need to take into account the FCC, the private recreational sites and businesses located throughout the Township, as well as the affordability of these resources for Township residents.

Recreation and Open Space Trends and Issues

- Parks and recreation facilities and programs were listed by CPU meeting participants as the single most-liked features of Lower Paxton Township. The FCC was specifically noted, indicating the community's appreciation for this particular facility. While there were negative responses regarding park maintenance and equipment, the parks and recreation services in the Township are perceived as a community asset.
- Lower Paxton Township does not have a Parks, Recreation, and Open Space Plan.
- Lower Paxton Township lacks pedestrian trails and bike pathways.
- Lower Paxton Township's Zoning and Subdivision and Land Development Ordinances provides guidance for the provision of parks and recreation areas, however the Ordinance offers minimal guidance to the preservation of open space areas.
- Currently the Township owns 283 acres of developed park and recreational lands, including George Park; an additional 93 acres will be added with the acquisition of the Wolfersberger Tract.
- The Friendship Community Center offers recreational and leisure programs for seniors in the Township. With an aging population, additional recreation facilities and programs directed toward seniors may be needed.
- Transit services are not readily available to the park and recreation facilities located within the Township.



Community Utilities Profile

The purpose of this chapter is to provide an inventory of existing public and quasi-public utilities and services in Lower Paxton Township. Information on service areas, capacities, current inadequacies, and future needs are discussed. The availability of public utilities and services is critical in identifying the location, type, and intensity of potential future development in the Township.

Public Water and Sewer Facilities

Water Supply and Distribution System

United Water of Pennsylvania, based in Harrisburg, provides public water supply services to Lower Paxton Township residents and businesses. Water supply sources are the Susquehanna River and the Swatara Creek, with treatment plants near 6th Street in Susquehanna Township and North Duke Street in Hummelstown, respectively. Water is conveyed to the Township via transmission and distribution mains. System pressures provide service up to approximately elevation 520, with the higher limits of the service area located in Blue Meadows and sections of Continental Drive in Forest Hills. Private wells serve development above that elevation and in scattered areas of the rest of the Township, but essentially all new major development of Lower Paxton Township is served by United's public water system.

In 2002, United Water served approximately 10,955 customers in Lower Paxton Townships, of which approximately 9,200 are single-family residential, 351 are multi-family residential, 734 are commercial and 3 are industrial (Tyco offices) accounts. The service area is illustrated on Map 7, Public Utilities.

The main treatment facility, drawing water from the Susquehanna River, is located near 6th Street and Linglestown Road in Susquehanna Township and has a permitted capacity of 12 mgd. A second treatment plant, located on North Duke Street in Hummelstown draws water from the Swatara Creek and is permitted for 2.8 mgd. With a total treatment capacity of 14.8 mgd, the United Water system serves not only most of Lower Paxton Township, but also portions of Rye Township and Marysville in Perry County, and the Boroughs of Hummelstown, Penbrook and Paxtang and most of Swatara and Susquehanna Townships in Dauphin County.

Current average daily water demand is approximately 10.5 mgd, with a maximum day demand of 12.9 mgd in 2001. Assuming 180 gpd average day water consumption for a single-family residence, or equivalent dwelling unit (EDU), and the current maximum day to average day peaking factor of approximately 1.23, the current system has treatment capacity for approximately 8,600 additional EDUs. At the rate of development and increase in demand over the past ten (10) years, this is enough capacity for 20

years, or more. United Water is continuing to prepare for future demand. The company has already purchased property and is planning to bring an additional treatment facility on line by 2004. For this reason, public water supply is considered adequate to accommodate projected future growth in Lower Paxton Township.

While much of the Township is served by public water systems, a significant portion of the Township is served by private wells. Since most of the Township is underlain by the Martinsburg geologic formation, wells are typically low yielding, many only a few gallons per minute. Recharge of the groundwater aquifer is by local precipitation. For this reason, control of potential pollution sources from surface activities is very important to maintaining quality of groundwater supplies in the Township.

Wastewater Treatment System

The Lower Paxton Township Authority is the owner of the Township Sewer System. The Township, however, provides administrative, operations and maintenance services related to the sewer system through a Management Agreement with the Authority. The Authority grew out of the Lower Paxton Township School Authority in the mid 1950s. The Authority recently extended its term of existence to May 1, 2023 in order to meet current obligations.

Nearly the entire Township, as well as a small section of West Hanover Township, is served by public sewerage provided by the Authority. As of the end of 2001, the customer base includes approximately 12,820 single-family residences, 6,180 multi-family living units, 3,780 commercial EDUs, 100 residential-commercial EDUs, and 550 EDUs from schools and other public/institutional facilities.

The Authority owns essentially all the collection lines, pumping stations and metering stations that comprise the sewer system of Lower Paxton Township. There are, however, small sections of privately owned collection sewer and two small private pumping stations that connect to the Authority's system.

The Authority system, which dates from 1957 to the present, includes:

- Approximately 1,300,000 feet, or over 250 miles of pipe, ranging in size from 8" to 30" and made from various materials (vitrified clay, ductile/cast iron, asbestos-cement, RCP, Truss and PVC),
- 6 pumping stations, (listed in Table 7-1 along with their respective rated capacities and latest flows)
- 3 permanent wastewater flow meter chambers.

Routine operations including flushing and televising of sewers, root cutting, inspection of new sewers and laterals, and raising of existing manhole frames and covers during street improvements. In addition, because the sewers are subject to hydraulic overloading because of excessive infiltration and inflow (I/I) during wet weather, the Township is engaged in an on-going program to reduce and/or eliminate excessive I/I. This involves an extensive metering program conducted by the Township to develop data for prioritization of needs areas and to assess the impact of sewer system rehabilitation projects. In addition, Township personnel inspect on-going contracted rehabilitation projects. From 1999 through 2001, the Township completed rehabilitation in mini-basins in the Colonial Crest, Clermont, Smithfield

and Old Pond areas of the Township. This included repairs of all mainline sewers and manholes, as well as private service lateral and building sewers. Currently, the Township's plan for addressing wastewater needs includes continuing sewer system rehabilitation by mini-basin to reduce I/I well into the next 10 to 20 years.

The Authority does not own or operate a wastewater treatment plant. Instead, wastewater is conveyed to either the Harrisburg or Swatara Township Authority facilities for treatment and disposal. The Authority has negotiated intermunicipal agreements with downstream communities for the transmission and treatment of its wastewater.

Wastewater is collected in Lower Paxton Township in four discrete basins that approximate the watershed boundaries of Beaver Creek, Paxton Creek, Spring Creek, and Asylum Run. The Beaver Creek Basin collects wastewater from the eastern half of the Township and discharges to the Joint Use Interceptor for conveyance and treatment at the Swatara Wastewater Treatment Plant (WWTP). The Paxton Creek Basin collects wastewater from the northwestern portion of the Township and discharges to Susquehanna Township's Paxton Creek Interceptor, ultimately reaching the Harrisburg Advanced Wastewater Treatment Facility (AWTF). The Spring Creek Basin located in the southwestern portion of the Township, is subdivided into two sub-basins. SC-1 and is tributary to the West Branch of the Spring Creek Interceptor in Susquehanna Township, while SC-2 is tributary to the East Branch of the Spring Creek Interceptor in Lower Paxton Township. All wastewater from both branches is conveyed via the Spring Creek Interceptor through Swatara Township and Paxtang Borough to the Harrisburg AWTF. Wastewater collected from the Asylum Run drainage basin, a relatively small area in Colonial Park section of the Township, is conveyed through Susquehanna Township and the City of Harrisburg to the Harrisburg AWTF.

At present, Lower Paxton is limited to contribute 3.695 mgd maximum monthly average flow to the 6.3 mgd capacity of the Swatara WWTP. While normally average

daily flow is substantially less, this limit has been exceeded during wet weather resulting in a limitation to connections until the wet weather flows are sufficiently reduced and/or treatment facilities are constructed to accommodate them. There is currently no limit for monthly average wastewater contributions to the Harrisburg facility. There are, however, peak flow limitations for the Paxton Creek, Asylum Run and Spring Creek West and Spring Creek East Interceptors, of 8.3 mgd, 1.5 mgd, 4.5 mgd and 3.3 mgd, respectively. These peak flows have been exceeded and overflows experienced during wet weather, resulting in a restriction on connections in the Paxton Creek and Spring Creek Basins until wet weather peak flows are sufficiently reduced or conveyance and/or treatment facilities are constructed to accommodate them.

Both Harrisburg and Swatara Wastewater Treatment Plants provide advanced wastewater treatment, including preliminary treatment, primary treatment and advanced biological treatment using the activated sludge process. Treated effluent from each of the plants is disinfected with chlorine prior to discharge to their respective receiving waters, the Swatara Creek and the Susquehanna River. Both facilities are well operated and maintained, consistently meeting effluent requirements and protecting water quality.

While nearly the entire Township is served by public sewerage, there are areas, particularly the northeastern section, that are served by on-lot disposal systems. Although, soils in most of the Township are unsuitable for conventional on-lot systems, they are generally suitable for alternative type systems, such as sand mounds. On-lot systems will continue to be used in less densely developed areas of the Township. Only the northeastern section is designated as an on-lot area in the future. Other than an occasional individual system malfunction, there are no areas of the Township known to have malfunctioning on-lot systems. The Mt Lou San Bible Camp, located in the northeast section of the Township, has experienced malfunctions. Plans are being made to either connect to the public systems or provide a wastewater treatment system with stream discharge to serve the camp.

The Pennsylvania Sewage Facilities Act of 1966 (as amended), more commonly known as “Act 537,” is the primary regulation that controls individual and community sewage disposal systems. Act 537 requires local municipalities to submit official sewage facility plans to the Pennsylvania Department of Environmental Protection (PADEP) for approval. These plans show the current and future needs of the municipality and assess wastewater facility choices to solve these needs.

Essentially, the purpose of the Act 537 sewage facilities planning is to:

- Assess wastewater needs of the existing and proposed development.
- Assess the capacity of the various elements of the sewer systems for serving near-term, twenty-year and ultimate wastewater needs of the Township.
- Develop and evaluate alternatives for meeting the wastewater needs of the sewered areas of the Township.

Lower Paxton Township submitted an Act 537 Plan Update to DEP in November 1999. This Update included a plan to eliminate the overflows and reduce the hydraulic overloads in the Beaver Creek, Paxton Creek, and Spring Creek Basin, West Branch. In July 2000, DEP disapproved the proposed 1999 Update and the Township appealed this decision to the Environmental Hearing Board. In November 2000, the Township submitted a revised Act 537 Plan Update, which was denied in June 2001 and appealed by the Township in July 2001. In September 2001, the Township began negotiations with DEP, the Swatara Township Authority and certain developers in order to pursue a global settlement of matters pending before the Environmental Hearing Board and the Commonwealth Court. A Second Consent Decree and agreement (SCD&A) was entered into by the parties in May 2002 and approved by the Court in June 2002. This agreement incorporates a revised Act 537 Plan Update and corrective action plans to eliminate the overflows

and reduce the hydraulic overloads in the Beaver Creek, Paxton Creek, and Spring Creek Basin, West Branch. The final Act 537 Plan Update incorporated in the Second Consent Decree was approved by DEP in March 2003.

The approved Act 537 Plan and the Second Consent Decree and Agreement (SCD&A) provide for elimination of these overflows and exceeded capacity at Swatara with the construction of a wet weather treatment facility in Beaver Creek and a mini-basin I/I rehabilitation program in the Paxton and Spring Creek basins. In Beaver Creek, the plan provides for the engineering and permitting of the wet weather treatment facility and conveyance facilities to occur in 2003 and 2004 with construction to begin in 2004 and conclude in 2005. The expansion of the conveyance facilities includes the Beaver Creek interceptor, pump station, force main, and the Nye’s Road interceptor.

In the Paxton and Spring Creek basins, the plan includes the continuation of the mini-basin I/I rehabilitation program for a five-year period in an effort to eliminate overflows and basement back-ups. At the end of the five-year period (June 2007), it was agreed that the Township will propose whether to continue the mini-basin I/I rehabilitation program or propose another method, subject to DEP’s approval in the Paxton Creek basin. If the mini-basin I/I rehabilitation program continues, the overflows must be eliminated by 2012 and the reduction of the hydraulic overload by 2017. The overload in the Spring Creek Basin is scheduled to be eliminated at the end of 2006 with the completion of two (2) mini-basin replacement projects.

Stormwater Management Systems

Stormwater management involves the control of water runoff from the pervious or impervious surfaces from rain or melting ice or snow. Runoff volumes have a tendency to increase substantially as land development occurs.

Federal regulations issued in 1999 establish a new permit requirement for discharges to surface waters from “municipal separate storm sewer systems” (MS4s). The permit requirement applies to “small MS4s” which are

designated by either EPA or DEP. The permit term will be for five years, followed by subsequent permits for similar timeframes. The MS4 permittee must, within the permit term, implement and enforce a stormwater management program approved by DEP which is designed to reduce the discharge of pollutants from its MS4 to the maximum extent practicable, with the goal of protecting water quality and satisfying the appropriate water quality requirements of the federal Clean Water Act and the Pennsylvania Clean Streams Law. The program must contain a schedule, best management practices (BMPs) and measurable goals for the six Minimum Control Measures described below, and be approved by DEP. MS4s must apply for permit coverage by March 10, 2003.

The federal regulations establish six categories of BMPs that must be met by permittees (these are “narrative” permit effluent limitations). The six BMP categories, also called “minimum control measures” in the federal regulations, are:

- Public Education and Outreach,
- Public Participation and Involvement,
- Illicit Discharge Detection and Elimination,
- Construction Site Runoff Control,
- Post-Construction Stormwater Management in New Development and Redevelopment, and
- Pollution Prevention and Good Housekeeping for Municipal Operations and Maintenance

Lower Paxton Township is one of over 1,000 municipalities in Pennsylvania affected by this new requirement and must implement a stormwater management program in their jurisdictions, that contains each one of these elements. The Township must do this by the end of their 5-year permit term—March, 2008.

To put these new requirements in context, EPA has promulgated two phases of stormwater permit regulations in the past 10 years—“Phase 1” covers *large* and *medium* municipalities (as well as industrial activities, including

construction over five acres). This was implemented in Pennsylvania beginning in 1992. “Phase II” of the federal storm water regulations expanded the universe of municipalities to smaller ones in “urbanized areas.”

Each municipal stormwater program must be approved by DEP. The federal regulations allow DEP and permittees to use existing qualifying state (and local) programs to satisfy any of the NPDES permit requirements of MS4s (*see* 40 CFR § 122.34(c)). Pennsylvania has several existing programs that can be used by municipalities to meet many of their permit requirements.

- The Pennsylvania Stormwater Management Act (Act 167), 32 P.S. §§ 680.1 *et seq.*, already requires counties and municipalities to develop and implement stormwater management programs, on a watershed-by-watershed basis.

Portions of three watersheds lie within Lower Paxton Township’s boundaries. The Beaver Creek Branch of Swatara Creek drains the eastern half of the Township; Paxton Creek drains the northwestern portion; and Spring Creek and its tributary, Asylum Run, drain the south western corner. Watercourses within the township and their respective watersheds are shown on the Water Resources map. The Dauphin County Conservation District in collaborating with private firms had prepared stormwater management plans for each of these watersheds. All three plans have been approved by PA DEP.

- DEP implements an erosion and sediment pollution control program for any earth disturbance activities statewide. Frequently this is done in concert with the County Conservation Districts (CCDs). Under that statewide regulatory program, persons proposing or conducting earth disturbance activities are required to develop an Erosion and Sediment Control Plan

(“E&S Plan”) containing BMPs which minimize the potential for accelerated erosion and sedimentation during construction.

- DEP implements an NPDES Construction Permit program that addresses post-construction stormwater impacts statewide. Persons proposing or conducting earth disturbance activities are required to develop a Post-Construction Stormwater Management Plan (PCSM Plan) containing BMPs which protect, maintain, reclaim and restore water quality and the existing and designated uses of surface waters of the Commonwealth.

To effectively use these existing regulatory programs to meet MS4 requirements, municipalities should have a municipal ordinance and a mechanism that requires review and approval of construction and post construction BMPs for earth disturbance activities equal to or greater than one acre. An agreement with the CCD is one good approach to meeting this requirement for the construction requirements.

Solid Waste Management System

As required by Pennsylvania Act 101 of 1988, The Municipal Waste Planning, Recycling and Waste Reduction Act, Lower Paxton Township plans for the disposal of trash and the recycling of certain materials. The Township manages solid waste through recycling, yard waste compost, and controlled landfilling programs. Act 101 set a 25% recycling goal for household and office waste by 1997 and a 35% goal by 2003. Lower Paxton met the 1997 goal and expects to achieve the 2003 goal as well.

The Recycling Committee was established by the Board of Supervisors as an advisory body on matters relating to solid waste collection, recycling and composting within the Township. This five-member committee prepares ordinances and regulations governing solid waste collection, recycling and composting.

The Township collects residential waste generated within the Township. Residential waste is collected under the township’s curbside program, which began in September 1991. Under this program, waste is collected on a weekly basis and includes both recyclable and non-recyclable products. Recyclables include glass (i.e., brown, green, and clear), aluminum, steel, and bi-metallic cans, plastics (7 types). For non-recyclable waste, the residents may choose from two options: a standard fixed rate system or a “pay-per-container” system. The standard rate system allows customers to place up to four 33-gallon containers per week at the curbside for collection. The pay-per-container program is a bag or container tagging option offered to residents. Residents purchase tags prior to pick-up.

The Township supplements weekly solid waste collection with a weekly large, bulky item pick-up (one per household). The service provides residents with the opportunity to dispose of large, non-hazardous materials in a safe manner. Acceptable items include appliances, furniture, television sets, mattresses, water heaters and carpets, provided two men can lift them into a truck.

The Township also offers bi-weekly curbside leaf waste collection and disposal from April 1 to December 15, as well as two weeks in January. This program provides residents of the township the opportunity to dispose of their leaf waste, including leaves, tree prunings, garden waste, and holiday trees and loose greens. An alternative allows residents to deliver yard waste to the Township Compost Facility in pre-purchased kraft bags, available at local stores. The Compost Facility is located on Conway Road, south of Union Deposit Road next to Hodges Heights Park. This service is offered to residents at no cost. Bundled brush may also be disposed of at the compost facility. Residents may choose not to participate in the yard waste program.

Natural Gas

Gas service is provided to Lower Paxton Township by UGI Corporation.

Electricity

Electric service is provided to Lower Paxton Township residents and businesses by PPL Electric Utilities Corporation.

The four PPL substations in the Township are located as follows:

- Linglestown on Linglestown Road - 250' east of Greenwood Road
- Colonial Park on Colonial Road - 1 mile north of U.S. 22
- Paxton on Copperstone Road - one-half mile north of Union Deposit Road
- Rutherford on Spring Creek Road - 700' west of Page Road

Trends and Issues

- Future land development pressures within Lower Paxton Township and from adjacent municipalities may necessitate increased water and wastewater service needs.
- There is currently no limit for wastewater contributions to the Harrisburg facility. There are, however, peak flow limitations for the Paxton Creek, Asylum Run and Spring Creek West and Spring Creek East Interceptors.
- On-lot systems will continue to be used in less densely developed areas of the Township, particularly in the northeastern section, which is designated as an on-lot disposal area.
- The Township completed, and submitted to DEP for review, an Act 537 Sewage Facilities Plan Update, which was approved by PA DEP in March 2003.
- Recharge of the groundwater aquifer occurs by local precipitation, therefore, control of potential pollution sources from surface activities is very important to maintaining the quality of groundwater supplies in the Township. Additional measures may need to be taken to protect groundwater supply.
- All three watershed plans for the watersheds in the Township have been approved by PADEP.



Natural Resources Profile

The natural environment is an important part of the community. Its characteristics have influenced local development patterns. Its systems are dynamic, providing a stimulating and interactive environment in which to live. These natural features are specific to this landscape, connected to the surrounding region, and rooted in the greater scheme of nature.

Floodplains

Floodplains are areas of land adjacent to waterways that perform a number of critical ecologic functions. They absorb, store, and release large amounts of water to the surrounding soils and groundwater systems. Natural vegetation supported by floodplains helps to trap sediment and absorb excess nutrients from upland surface runoff, stabilize stream banks, and reduce soil erosion. Floodplains also provide habitat for terrestrial wildlife and influence stream conditions for aquatic life. In addition to their ecologic value, many people value the scenic qualities of floodplain areas, particularly for their wildlife and waters.

As a primarily upland landscape, the Township has approximately 1,326 acres of land located within the 100-year floodplain boundary, as illustrated on Maps 8 and 9. While this is only a small percentage of the Township's land area, development in these areas increases threats to human life and property caused by periodic flooding; therefore regulation has been used to limit development options in these areas.

Wetlands

Wetlands are unique, transitional environments between terrestrial (land) and hydrologic (water) systems. As a component of both systems, they perform a variety of important functions and are in a state of constant change. Wetlands help to maintain surface stream flow and groundwater recharge. Often found in floodplains, they are natural water storage areas and moderate stormwater runoff and downstream flood crests. Wetlands provide important habitat for many species of plant and animal life.

Wetland areas are scattered throughout the Township but are most commonly found along streams, as shown on Maps 8 and 9. Development on wetland soils can cause multiple problems, though engineering technology has enabled development to proceed despite environmental consequences. Therefore, regulations, such as the Federal Clean Water Act and similar state and local laws, have led to the enforcement of wetland protection.



Steep Slopes

William M. Marsh states in his 1991 publication entitled Landscape Planning: Environmental Applications, "The need to consider topography in planning is an outgrowth of the widespread realization not only that land uses have slope limitations but also that slopes have been misused in modern land development. The misuse of slopes arises from two types of practices: (1) the placement of structures and facilities on slopes that are already unstable or potentially unstable; and (2) the disturbance of stable slopes resulting in failure, accelerated erosion, and/or ecological deterioration of the slope environment."

Slopes with grades of 15 percent or greater are considered steep and prone to higher erosion rates than lesser grades. If disturbed, these areas can yield greater sediment loads on streams. Very steep slopes, with grades over 25 percent, produce heavy soil erosion and sediment loading. As shown on Map 9, the majority of Lower Paxton Township's steep slopes are located along Blue Mountain, a geologic formation of the Ridge and Valley Province, and the stream channels. Approximately 5.0 percent of the Township has slopes of greater than 25 percent. The Township has taken measures to protect its steep slopes from inappropriate development by amending its Zoning Ordinance to include a Steep Slope Overlay District.

Soils

The Soil Survey of Dauphin County, Pennsylvania (1986) describes the soils found across the county and utilizes soil associations to describe how soil depth, slope, and drainage affect potential land use. Soil associations are multiple soil types that are found repeatedly across a given land area. The associations are helpful in attaining a general idea of soil quality, comparing different sections of the Township, and delineating large areas suited to particular uses, e.g., agriculture. The three soil associations found in Lower Paxton Township are characterized in Table 2-15.

Agricultural Soils

Prime farmland, as defined by the U.S. Department of Agriculture (USDA), is the land that is best suited to producing food, feed, forage, fiber and oilseed crops. It has the soil quality, growing season, and water supply needed to economically produce a sustained high yield of crops when it is treated and managed using acceptable



farming methods. While the Township does have pockets of prime farmland soils scattered throughout the Township (Maps 8 and 9), these represent a small fraction of the total area (7.9 percent) and deem the Township an unlikely candidate for agricultural preservation priority.

Water Resources

Surface waters include rivers, streams and ponds, which provide aquatic habitat, carry or hold runoff from storms, and provide recreation and scenic opportunities.

Surface water resources are a dynamic and important component of the natural environment, but ever-present threats such as construction, clear-cutting, mining, overuse, and pollution have required the regulated protection of these valuable resources.

Lower Paxton Township is located in the Lower Susquehanna Subbasin (Subbasin Number 7) and is drained by Paxton, Spring and Beaver Creeks. Paxton Creek drains the northwestern portion, approximately 40 percent of the Township. It originates near Linglestown, flows 12.8 miles southwest and south, and is characterized by rolling hills, a broad valley and gentle slopes.

Spring Creek lies in the southwestern portion of the Township. Its source lies south of Union Deposit Road near the Central Dauphin East school properties and flows southwest

Swatara Creek originates in Schuylkill County and flows 71 miles southwest entering the Susquehanna River at Middletown. Approximately 48 percent of Lower Paxton

Table 2-15
Soils in Lower Paxton Township

Association	Description	Topographic location	Bedrock material and depth	Suitability	Limitations to community development	Limitations to recreational development
Dekalb-Lehew	moderately deep, well-drained, gently sloping to very steep soils that have a channery sandy loam to channery loam subsoil	found along ridge of Blue Mountain	sandstone and sandstone-imbedded shale, 24-40 inches	Natural Resource Area: fairly well suited to moderately well suited as woodland	<i>Dekalb-Lehew</i> : moderate to severe due to depth to bedrock and slope	moderate due to channery conditions
Berks-Bedington*-Weikert	deep to shallow, well-drained, nearly level to steep soils that have a shaly silt loam to shaly silt clay loam subsoil	found throughout valley and valley uplands	gray shale and sandstone, 18-50 inches	Agriculture: suitable for cultivated crops and livestock; Natural Resource Area: well suited for grassland, meadow, and woodland	<i>Berks</i> : moderate to severe due to depth to bedrock and slope; <i>Bedington</i> : slight to severe due to slope; <i>Weikert</i> : severe due to depth to bedrock and slope	<i>Berks</i> : moderate due to channery and shaly conditions; <i>Bedington</i> : moderate due to slope and shaly conditions; <i>Weikert</i> : moderate to severe due to slope, shaly conditions and depth to bedrock
Laidig-Buchanan*-Andover	deep, well-drained to poorly drained, gently sloping and sloping soils that have a fragipan at a depth of 14 to 30 inches	found on the forested slopes of Blue Mountain	acid shale and sandstone, 46-60 inches	Natural Resource Area: <i>Laidig</i> and <i>Buchanan</i> well-suited as meadow or woodland; <i>Andover</i> suited as woodland	<i>Laidig</i> : moderate to severe due to slope, moderately slow permeability and stoniness; <i>Buchanan</i> : moderate to severe due to seasonal high water table, slope, permeability and stoniness; <i>Andover</i> : severe due to high water table	<i>Laidig</i> : moderate due to slope and gravelly conditions

Source: Soil Survey of Dauphin County, PA

* denotes prime farmland soils

Township lies in this watershed, specifically the Beaver Creek watershed. This creek originates northeast of Linglestown and flows south, draining the eastern portion of the Township.

Water Quality

The Pennsylvania Chapter 93 Water Quality Standards classify surface waters according to their water quality criteria and protected water uses. Selected bodies of water that exhibit exceptional water quality and other environmental features are referred to as "Special Protection Waters." The streams that flow through Lower Paxton Township are not of exceptional quality, however they are classified as Warm Water Fisheries.

Various public agencies, organizations, and concerned citizens have expressed concern for the protection and restoration of watersheds. Three local watershed associations are active alongside one regional commission.

- Paxton Creek Watershed and Education Association
- Spring Creek Watershed Association
- Swatara Creek Watershed Association, Inc.
- Susquehanna River Basin Commission

While the associations face several common issues, namely land use compatibility, sediment control, streambank erosion, and floodplain and stormwater management, each watershed has its own challenges, programs, and processes for community-based stewardship. More details on these and other water resource interest groups can be found in Appendix C of this Plan.



Stormwater Management Planning

The Pennsylvania Stormwater Management Act, Act 167 of 1978, requires counties to prepare stormwater management plans on a watershed basis in consultation with the affected municipalities. Dauphin County has prepared a Stormwater Management Plan for each of the drainage basins found within Lower Paxton Township. The plan for the Paxton Creek Watershed was completed in 1991; a plan for Spring Creek followed in 1993; and a plan for the Beaver Basin of Swatara Creek was completed in 1997, as part of a Multi-Basin Plan for portions of the Swatara Creek Watershed.

The three Stormwater Management Plans are comparable in content, analysis, and language. Each described development to date and forecast anticipated build out according to municipal regulations. Each plan compared the existing stormwater and floodplain regulations of each municipality in its drainage area for current policy. Based on future development potential, each plan proposed release rates (standard, specified or provisional) for subdivided units of the drainage area. Finally, each applied the Penn State Runoff Model (PSRM) for the estimation of stormwater quantities. The Multi-Basin Plan included an economic analysis that showed that the proposed change in release rate from 70 percent to 60 percent imposed a minimal expense of 3 to 6 percent in construction and acquisition costs. The Paxton Creek plan offered a model ordinance for its four municipalities to amend and adopt.

Groundwater Quality and Supply

Groundwater quality and supply are influenced by geology and the hydrologic cycle. Physical geologic factors affect groundwater movement and availability. The chemical composition of bedrock affects water quality; the more soluble bedrock, such as limestone, allows more compounds to be dissolved in the groundwater, thus resulting in increased hardness values. Hydrologic factors include the quantity and quality of water moving into the groundwater aquifer-typically stormwater that infiltrates the surface to recharge the groundwater supply.

Lower Paxton Township is underlain by a wide variety of sedimentary rocks. These rocks were formed 400 to 500 million years ago. Since most of the Township is underlain by the Martinsburg geologic formation, wells are typically low yielding, many only a few gallons per minute. Recharge of the groundwater aquifer occurs by local precipitation and infiltration. For this reason, control of potential pollution sources from surface activities is very important to maintaining quality groundwater supplies. Additionally and as previously stated, recent 2001-2002 drought conditions and increasing withdrawals have severely impacted groundwater supplies in the region. Conservation activities will be needed to manage water supplies and to continue the prosperity of development in the Township and region.

Vegetation

As Pennsylvania was once a forested landscape, its vegetative resources are a vital part of its history and its character. Approximately 17.7 percent of Lower Paxton Township is forested. The greatest contiguous area of woodland lies on the slopes and ridge of Blue Mountain. Forested areas can also be found scattered along the stream corridors of Paxton, Spring and Beaver Creeks.

Vegetation, particularly forests, perform several vital functions for the local ecology. It provides habitat for local wildlife. They circulate nutrients between the soil and the atmosphere. They stabilize soils prone to erosion and filter nutrients, pollutants, and sediment from runoff, particularly along streambanks. Finally, forests are productive sources of timber.





Public Comments

Natural resources, i.e. the environment, are indeed valued by Township residents. Nearly 10 percent of the responses given by CPU meeting participants related to the environment. Residents of the Colonial Park South and Southeast Quadrant CPUs specifically valued local wildlife. Those from Colonial Park North and Linglestown listed view and access to Blue Mountain as an asset to their CPUs. Residents from the Union Deposit CPU listed the green rolling landscape and open space among its most liked features, also relating some comments to Blue Mountain. Additionally, participants valued the variety of the landscape terrain as contributing to community assets.

Responses of least liked features regarding natural resources related to impacts from development. Participants listed the loss of environmentally sensitive areas to construction among least liked features. The loss of habitat was also noted.

Trends and Issues

- As an upland area, Lower Paxton Township is minimally susceptible to flood hazards.
- Approximately 1,326 acres (7.4 percent) of the Township's land area lie in the 100-year floodplain.
- Lower Paxton Township participates in the National Flood Insurance Program (NFIP), however it does not participate in NFIP's Community Rating System, which promotes floodplain conservation and flood protection.
- Approximately 50 acres (less than one percent) of the Township are classified as wetland by the National Wetland Inventory (NWI). Due to the limited accuracy of the NWI, additional wetlands may be located in other areas of the Township.
- The majority of the Township's steep slopes are found on Blue Mountain and along the stream channels.
- Overall, the soils of Lower Paxton Township are well-drained and moderately limited in development potential by depth to bedrock, seasonal high water table, slope, slow permeability, and stoniness.
- The land area of Lower Paxton Township is divided among three watersheds and their respective streams: Beaver Creek, Paxton Creek, and Spring Creek.
- As the source of streams in three separate watersheds, future environmental impacts will result within the Township but also in downstream communities.

- Each watershed has an active watershed association. Each association has identified issues and concerns regarding water resources in their watershed. While a Rivers/Watershed Conservation Plan has been developed for the Swatara Creek Watershed (including Beaver Creek), no general or specific conservation plans or recommendations have been developed for the watersheds in the Township.
- In addition to concerned local citizens, a number of public and private agencies and organizations are working in Pennsylvania to protect water resources. These agencies and organizations can be a significant source of technical and financial assistance to those involved in water and other resource protection activities.
- Water Management Plans are currently in development for the Lower Susquehanna River Basin and the Swatara Creek watershed. These long-range water usage planning studies may recommend general or specific water management policies or programs to the municipalities, including Lower Paxton Township, within their watersheds.
- Act 167 Stormwater Management Plans have been completed and approved by DEP for each of the three watersheds in the Township. These plans are currently being updated with regard to MS4 compliance as regulated by the EPA
- Approximately 17.7 percent of Lower Paxton Township, predominantly along Blue Mountain in the northern portion of the Township, is forested, which contributes to the Township's scenic, recreational, and open space amenities.