

4.0 FUTURE GROWTH AND LAND DEVELOPMENT

4.1 SUBDIVISIONS APPROVED AFTER 1983

FIGURE 4-1 depicts the subdivisions approved in Amity Township between 1983 and 2002. The table on Figure 4-1 correlates the numbers on the map to the respective subdivision.¹

TABLE 4-1 shows existing residential developments in Amity Township that have reserved EDU's. Because the current sewage treatment plant has nearly reached its rated capacity, all remaining EDU's have been allocated through 2006. This will serve as a cap to population growth, at least until new EDU's become available (with approval of this plan, the Township anticipates that new EDU's could be available in 2005). This allocation was used to project population growth through 2005 (see Section 4.3).

4.2 LAND USE DESIGNATIONS ESTABLISHED UNDER THE PENNSYLVANIA MUNICIPALITIES PLANNING CODE

A description of relevant County and Township land use documents (Comprehensive Plans, Zoning Ordinances, and Subdivision and Land Development Ordinances) is found in Section 1.2.

Development intensity in the Township has been based to a large degree on the availability of public sewer. The most intensive residential development has occurred in a corridor surrounding the sewer line, in an area zoned as Medium Density Residential (MDR). This zone permits lot as small as 12,000 sq. ft. (about 0.27 acres) where public sewer and water is available. (See Section 4.2.1 for a more complete description of zoning districts.)

Recent development pressure has resulted in several large developments being approved in the Low Density Residential (LDR) district. This district is generally beyond the current sewer area. Because of the lack of public sewer (and water), minimum lot size is 80,000 sq. ft. (about 1.8 acres). Those developments include several in the Yellow House area (Yellow House, Lehman, Limekiln Acres, and Indian Run), and in the north central part of the Township (Esterly, Winding Creek Estates, Manatawny Mills, and Houston).

4.2.1 Zoning Summary

FIGURE 4-2 is a copy of the Amity Township Zoning Map. The Township provides for a variety of residential uses, as well as agricultural, commercial, and light industrial. The following is a summary of the major provisions of each zone:

¹ Note that some numbers are missing; this is because the map was based on a map in the 1990 Plan, and some phased developments had multiple numbers. The current map eliminated those multiple numbers, but to allow comparison with the 1990 plan, did not "in-fill" those numbers. Also, developments that were previously mapped, but resulted in no new lots being created (annexations, plan revisions, etc.) were also dropped.

TABLE 4-1

**SUBDIVISION AND LAND DEVELOPMENT ACTIVITY
APPROVED DEVELOPMENTS WHICH HAVE RESERVED CAPACITY
AS OF JANUARY 1, 2003
RESIDENTIAL ONLY (Not including Union, Douglass or Earl Townships)**

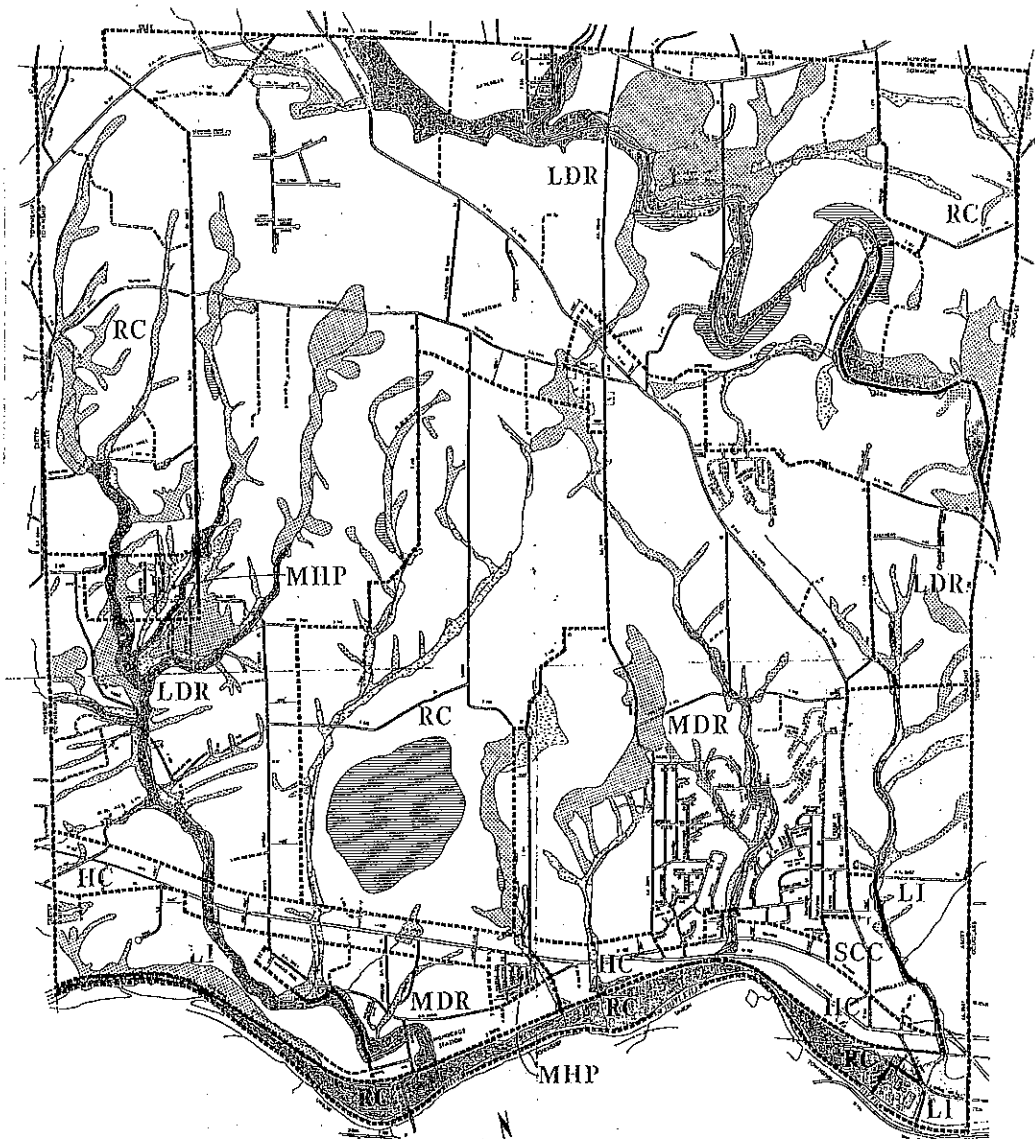
Development	Reserved EDU's	Connected EDU's	Reserved Remaining EDU's	Connected in 2002	Projection (By EDU's)				
					2003	2004	2005	2006	2007
Westridge	222	217	5	43	5	-	-	-	-
Greenbriar	321	291	30	61	30	-	-	-	-
Victoria Hill	32	30	2	9	2	-	-	-	-
Amity Gardens	12	10	2	2	2	-	-	-	-
Cider Mill	59	59	-	1	-	-	-	-	-
Wood's Edge	331	157	174	35	35	35	35	35	34
Far Hill Farms	58	29	29	29	29	-	-	-	-
Winding Creek Estates	6	5	1	-	1	-	-	-	-
Blacksmith Pointe	47	47	-	13	-	-	-	-	-
Rosecliff Pointe	165	21	144	21	35	35	35	39	-
Misc. Singles	10	10	-	6	-	-	-	-	-
Pleasant Meadows	44	22	22	7	22	-	-	-	-
Pine Land	22	-	22	-	-	22	-	-	-
Highmeadow Estates	73	-	73	-	33	40	-	-	-
Sunset Knoll	100	-	100	-	30	30	40	-	-
Villa at Morlatton	18	-	18	-	18	-	-	-	-
TOTALS	1,520	898	622	227	242	162	110	74	34

TABLE 4-1A

SUBDIVISION AND LAND DEVELOPMENT ACTIVITY
 APPROVED DEVELOPMENTS WHICH HAVE RESERVED CAPACITY
 AS OF JANUARY 1, 2003
 AMITY TOWNSHIP BERKS COUNTY

DEVELOPMENT	Reserved EDU's	Connected EDU's	Reserved Remaining EDU's	Connected in 2002	Projections (By EDU's)				
					2003	2004	2005	2006	2007
Westridge	222	217	5	43	5	-	-	-	-
Greenbriar	321	291	30	61	30	-	-	-	-
Victoria Hill	32	30	2	9	2	-	-	-	-
Amity Gardens	12	10	2	2	2	-	-	-	-
Cider Mill	59	59	0	1	-	-	-	-	-
#3 Riga Lane	2	0	2	0	2	-	-	-	-
Woods Edge	331	157	174	35	35	35	35	35	34
Daniel Boone Intermediate Schl	12	12	0	12	-	-	-	-	-
Far Hills Farm	58	29	29	29	29	-	-	-	-
Winding Creek Estates	6	5	1	0	1	-	-	-	-
Blacksmith Pointe	47	47	0	13	-	-	-	-	-
Rosecliff Pointe	165	21	144	21	35	35	35	39	-
Union Township	200	7	193						
Miscellaneous Singles	10	10	0	6	-	-	-	-	-
Douglass Township	602	126	476						
Douglassville Shopping Ctr Lt 4	3	0	3	0	0	3	-	-	-
Hope Methodist church	5	0	5	0	3	-	-	2	-
ITNAC Corporation	5	5	0	5	-	-	-	-	-
Pleasant Meadows	44	22	22	7	22	-	-	-	-
American Crane	3	0	3	0	3	-	-	-	-
Gerald Behney Riga Lane	2	0	2	0	2	-	-	-	-
Pine Lane Subdivision	22	0	22	0	0	22	-	-	-
Highmeadow Estates	73	0	73	0	33	40			
Sunset Knoll	100	0	100	0	30	30	40	-	-
Earl Township	175	0	175	0	87	88	-	-	-
McDonalds/Bank	6	0	6	0	5	1	-	-	-
Villa at Morlatton	18	0	18	0	18	-	-	-	-
TOTALS	2535	1048	1487	244	344	254	110	76	34

ZONING MAP



ZONING DISTRICTS

- RC RURAL CONSERVATION
- LDR LOW DENSITY RESIDENTIAL
- MDR MEDIUM DENSITY RESIDENTIAL
- MHP MOBILE HOME PARK
- HC HIGHWAY COMMERCIAL
- SCC SHOPPING CENTER COMMERCIAL
- LI LIGHT INDUSTRIAL

ENVIRONMENTAL OVERLAY DISTRICTS

- 100-YEAR FLOODPLAIN
- HYDRIC SOILS
- HIGH WATER TABLE
- STEEP SLOPES

PUBLIC ROAD
 PRIVATE ROAD



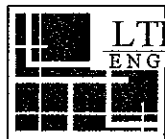
PREPARED BY: HOTEL ENGINEERS, INC.



NOT BE USED FOR ANY OTHER PURPOSE THAN THAT FOR WHICH IT WAS PREPARED. THE USER SHALL BE RESPONSIBLE FOR THE ACCURACY OF THE DATA AND THE RESULTS OF ANY ANALYSIS OR DESIGN BASED THEREON. THE USER SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE APPROPRIATE AGENCIES.

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 ENGINEER - PROFESSIONAL SEAL OF PENNSYLVANIA

John Miller
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 ENGINEERS & CODE OFFICIALS
 P.O. BOX 241
 ONE TOWN CENTRE DRIVE OLEY, PA 19547

SHEET TITLE: ZONING MAP		DATE: 12/02
PROJECT: ACT 537 PLAN REVISION AMITY TOWNSHIP		PROJECT NO.:
PROJECT LOCATION: BERKS COUNTY, PA		SHEET NO.:
DRAWN BY:	APPROVED BY:	SCALE: NONE

Fig. 4-2

RC Rural Conservation District - encourages woodland, agricultural and general open space conservation by preserving natural features and environmentally sensitive lands such as forests, water sheds and water courses while perpetuating the rural atmosphere, open space and scenic landscape of the Township. A significant portion of the District is classified as having severe limitations to on-lot sewage disposal due to flooding, a high water table and/or steep slopes. Residential and conservation uses are encouraged provided that sufficient space is available for on-lot sewage disposal which will not create any menace to public health, and natural features are not unduly disturbed. Permits single-family detached dwelling on minimum of 80,000 sq. ft. lot. District includes the Monocacy Hill open space, agricultural land in the north east and north west portions of the Township, and the land along the Schuylkill River.

LDR Low Density Residential District - encourages moderate residential development. It serves as a transition area between areas of variable density. A significant portion of the LDR District is classified as having slight to severe limitations to on-lot sewage disposal due to flooding and a high water table. Development is further regulated by the Environmental Protection Overlay Districts. In addition to single-family detached housing, cluster development and Planning Residential Development are allowed as "conditional uses."

MDR Medium Density Residential District - purpose is to maintain and promote residential growth in areas of the Township which have the potential for being served by public sewer and/or water facilities. It contains the least amount of physical limitations for development within the Township and is most suitable to accommodate the highest permissible residential densities. As in LDR, minimum lot size is 80,000 sq. ft. with on-lot sewer and water; 30,000 sq. ft. with sewer; but only 12,000 sq. ft. with public sewer and water.

MHP Mobile Home Park District - allows mobile home parks in areas that contain moderate limits for development and have the potential for being serviced by public or commercial water and sewer facilities.

HC Highway Commercial District - allows a generalized variety of commercial uses which serve the basic needs to the surrounding community. The District is concentrated along arterial highways. Lot area requirements are 80,000 sq. ft., 50,000 sq. ft. and 30,000 sq. ft.

SCC Shopping Center Commercial District - similar to HC, but provides for small, unified shopping center. Minimum lot size is 3 acres.

LI Light Industrial District - provides for light industrial uses such as warehouse and distribution centers, and light manufacturing. Minimum lot size is 3 acres.

4.2.2 Floodplain, Stormwater Management, and Special Protection Areas

The proposed alternative will not create a new discharge into a stream; waste will be conveyed to the Township's treatment plant. The plant currently meets the NPDES permit requirements for discharging into the Schuylkill River.

4.3 POPULATION PROJECTIONS

Local population, housing and employment trends illustrate how an area's residents, housing stock and economy are changing over time. These trends help determine planning and zoning policies such as how much land to set aside for commerce, industry and different types of residential uses. Amity Township has been growing at a rate substantially greater than Berks County overall. This trend has been true since the 1950's.

4.3.1 Total Population

Amity Township's population was 8,867 as of the 2000 U.S. Census, an increase of 2,433 from 1990, or 37.8%. Berks County overall grew by just over 11% during that same period.

**Table 4-2
TOTAL POPULATION
Amity Township and Berks County
1970 - 2000**

Year	Amity Township			Berks County		
	Persons	Number Change	Percent Change	Persons	Number Change	Percent Change
1970	4,718			296,382		
1980	5,883	1,165	24.7%	312,509	16,127	5.4%
1990	6,434	551	9.4%	336,523	24,014	7.7%
2000	8,867	2,433	37.8%	373,636	37,133	11.0%

Source: 2000 U.S. Census

Amity also experienced higher growth than its surrounding municipalities. In fact, Amity's population grew at the fourth fastest rate in Berks County, behind Maiden Creek Township (92.91%), the Borough of Shoemakersville (47.19%), and Rockland Township (40.75%).

Population density continues to increase in Amity Township, as in Berks County as a whole, nearly doubling in the past 30 years.

At the same time, the number of persons per household decreased during the 1980's, and has held steady during the 1990's. This reflects the housing type in the township, which is overwhelmingly single family detached (100% of approved subdivision plans for 2001, 80% for 2000).

Table 4-3
TOTAL POPULATION
Amity Township and Adjacent Municipalities
1990 - 2000

Municipality	1990	2000	Change
Amity Twp	6,434	8,867	37.8%
Douglass Twp	3,570	3,327	-6.8%
Earl Twp	3,016	3,050	1.1%
Exeter Twp	17,260	21,161	22.6%
Oley Twp	3,362	3,583	6.6%
Union Twp	3,340	3,453	0.4%
Birdsboro Borough	4,222	5,064	19.9%

Source: 2000 U.S. Census

TABLE 4-4
POPULATION DENSITY
Amity Township and Berks County
1970 - 2000

Year	Persons/Square Mile			
	1970	1980	1990	2000
Amity Twp	256.4	319.7	349.7	481.9
Berks County	296.0	361.7	387.8	432.3

Source: 2000 U.S. Census

4.3.2 Population Projections

The last available information on population is the 2000 U.S. Census. Periodic population estimates are done by the Pennsylvania State Data Center, usually for the previous year (2001 estimates are available in late 2002 or early 2003). Since there are no estimates available looking forward ten years, this plan has developed its own estimates.

As the existing treatment plant nears its capacity, the Township has established a reserve system for the remaining EDU's, allocating them over a six-year period (2001-2006). It is unlikely that any additional EDU's will be available before 2005. By extrapolating population growth based on the schedule of connections to be allowed throughout this period and the historical number of people per household (which was virtually unchanged between 1980 and 2000), and accounting for the small number of developments that have been approved with on-lot sewage disposal, the population projection reaches almost 15,800 by 2013. The projection assumes the same average rate of growth during the years 2008-2013. Releasing additional EDU's in 2005 could change the projections for 2005 and 2006, perhaps by several hundred people each year. Factors affecting that include the demand for housing, and land availability for residential development. Amity Township is currently granting approval for new subdivision plans, contingent on the availability of EDU's when the developer is ready to begin construction.

Table 4-5
Equivalent Dwelling Units
Amity Township and Berks County
1980 - 2009

	Population	Housing Units	Persons/ House
1980			
Amity	5,883	2,093	2.81
Berks	312,509	117,485	2.66
1990			
Amity	6,434	2,422	2.66
Berks	335,233	131,454	2.56
2000			
Amity	8,867	3,323	2.67
Berks	373,636	150,222	2.49

Source: 2000 U.S. Census

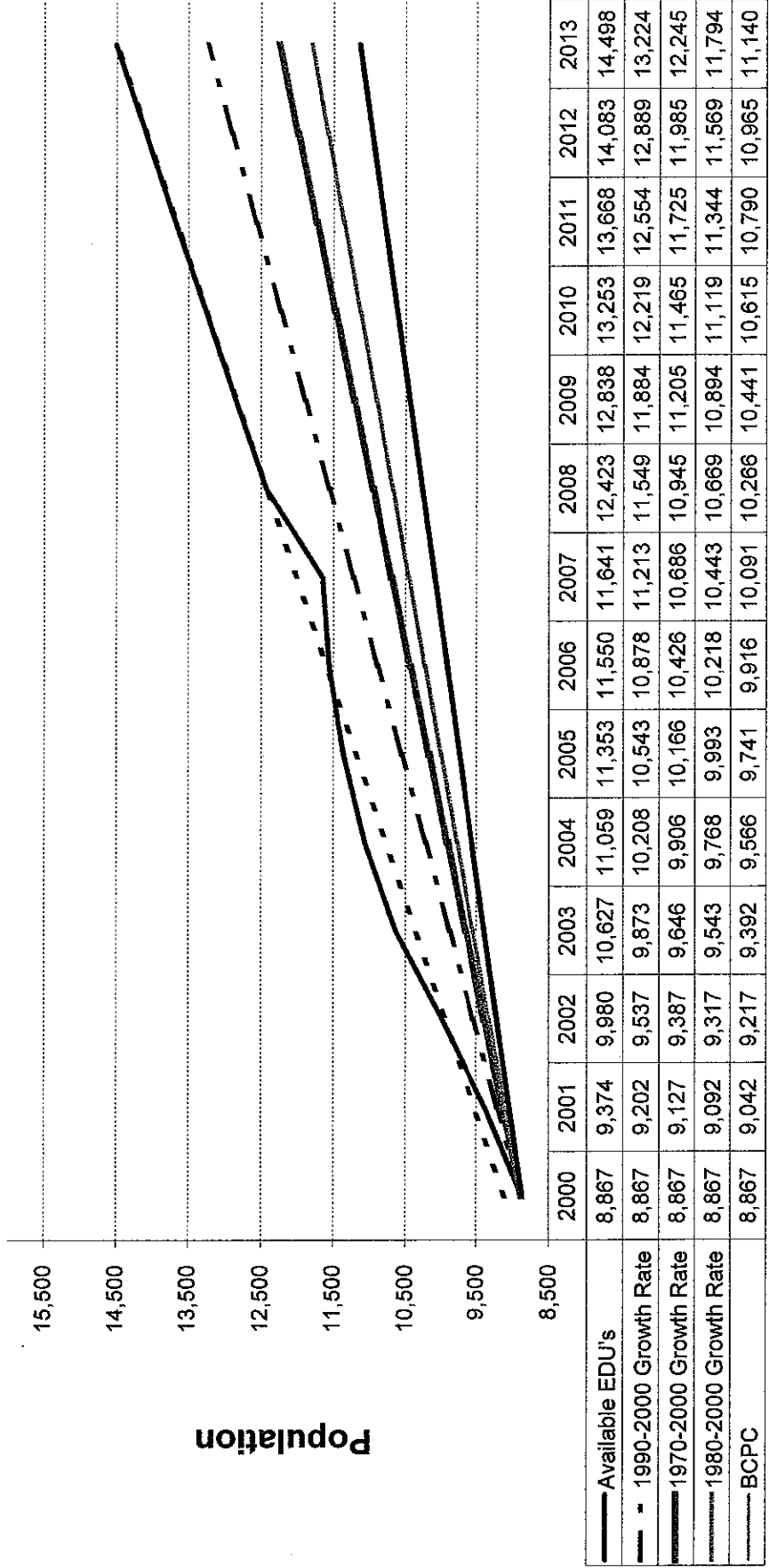
A more conservative estimate of population uses the historical growth rates over the past three decades. **TABLE 4-6** shows the population trend using the “available EDU’s” method discussed previously, the growth rate during the last decade, and the average growth over the previous two and three decades.

In “Chapter III - Future Land Use Plan” of the **Berks County Vision 2020 Plan**, the County Planning Commission looked at land remaining that can be expected to be developed (see Section 1.2.1). They include land in two categories: “designated growth areas”; and “future growth areas.”

Designated Growth Areas - immediately adjacent to Existing Development within which residential and mixed use development is permitted or planned for at densities greater than one unit per acre, commercial, industrial and institutional uses are permitted or planned for and public infrastructure services are provided or planned.

Future Growth Areas - outside of and adjacent to a Designated Growth area or, in rural areas, (where public sewer is not currently available, but envisioned) adjacent to Existing Development where residential, commercial, industrial and institutional uses and development are permitted or planned at varying densities and public infrastructure services may or may not be provided, but future development are greater densities is planned to accompany the orderly extension and provision of public infrastructure services.

Table 4-6 - Amity Township - Population Projection to 2013



According to the study, Amity Township has 555 acres in the "Designated Growth" area, and an additional 1,337 acres in the "Future Growth" area, for a total of 1,892 acres (see Figure 4-3.2). On average, the County estimates that 45% of available land will be developed for residential use (it allows for other uses, such as schools and municipal buildings, as well as expected acreage for roads). Based on Amity Township's average density of 2.67 people/dwelling unit, we can predict an ultimate population of an additional 2,273. Added to the 2000 Census figure of 8,867, that produces a total ultimate population of 11,140, slightly lower than the projections based on past growth trends. A graphic representation of future land use, based on the County study, is shown in **Figure 4-3**. A reasonable estimate, based on all five scenarios, is that the 2013 population will be between 12,000 and 13,000.

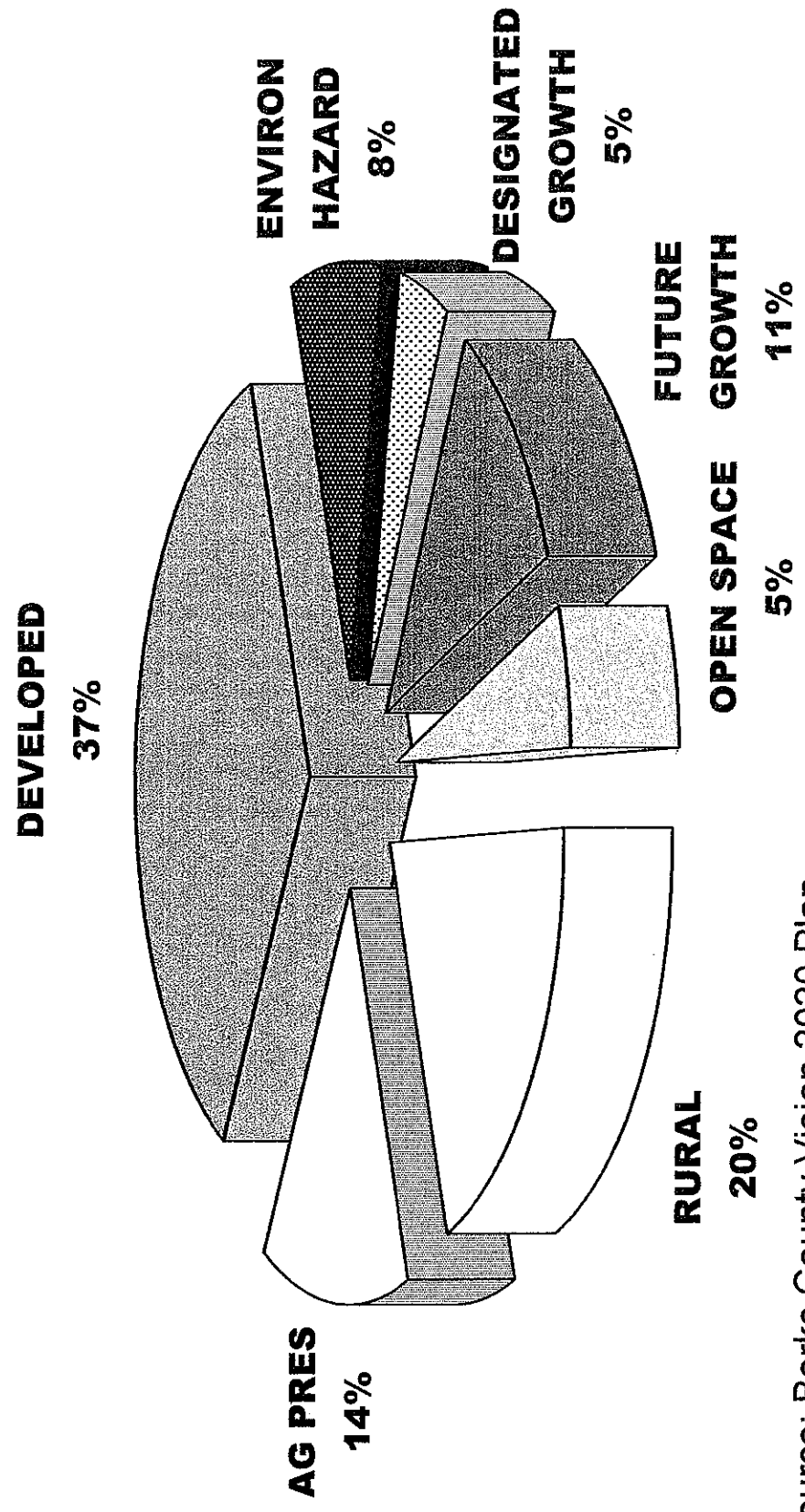
4.4 ZONING AND SUBDIVISION REGULATIONS RELATING TO DEVELOPMENT, USE, AND PROTECTION OF LAND AND WATER RESOURCES

Zoning and subdivision regulations are discussed in detail in Sections 1.2.2 and 4.2.1 (Amity Township) and 1.2.1 (Berks County).

The following specific items are addressed in those plans as follows:

- **Public ground/surface water supplies**
These are delineated by the Environmental Overlay District, and subject to strict development regulation.
- **Recreational water use**
The major waterway through Amity Township is the Schuylkill River. Almost the entire waterway is zoned RC (Rural Conservation). A small portion of the area along the river is zoned LI (Light Industrial); this is the site of the sewage treatment plant. The Monocacy and Manatawny Creeks are also used for recreation. They are delineated by the Environmental Overlay District, and subject to strict development regulation.
- **Groundwater recharge areas**
These are delineated by the Environmental Overlay District, and subject to strict development regulation.
- **Industrial water use**
This is not a significant issue in Amity Township. Only light industry is permitted (warehouse and distribution centers, light manufacturing) where industrial water usage is likely to be minimal.
- **Wetlands**
Much of the wetlands area in the Township is in the RC district. That district specifically cites protection of the wetlands (water sheds and water courses) as a goal within the district.

**Figure 4-3
Future Land Use - Amity Township**



Source: Berks County Vision 2020 Plan

4.5 FUTURE PLANNING

TABLE 4-7 projects EDU and gallons/day load, based on the previous population estimates, for 2008 (5 years) and 2013 (10 years). This is based on the historic density of 2.67 people/dwelling unit, and the average daily load of 302 gallons/EDU from the "2001 Municipal Wasteload Management Report, Chapter 94 Annual Report."

Based on this projection, Amity Township can expect additional loading on the treatment plant of up to 647,094 gallons/day by 2013.

The upgrade to the plant that is currently being designed will increase capacity by approximately 600,000 to 800,000 gallons/day. This should be sufficient to meet demand through 2013.

The Amity Township Sewage Treatment Plant is a subregional facility. Included in its service area are Douglass and Union Townships. During the 1990's, Union Township grew at a rate of 0.4%; Douglass Township actually lost 6.8% of its population (see TABLE 4-3.2).

Douglass Township. Douglass Township last updated its Act 537 Plan in 1997. At that time, they proposed connecting 182 EDU's from the Douglassville area as soon as possible, with another 31 EDU's to be connected at some later date. As of the end of 2001, 137 homes, representing 145 EDU's, had been connected to Amity. **TABLE 4-2** shows 476 EDU's reserved for Douglass Township through 2006, which should be more than adequate for any likely development in Douglass Township.

Union Township. Union Township is currently revising its Act 537 Plan. A draft, dated October 2000, had identified "Future Growth Areas for Municipal Districts" (see **FIGURE 4-4**). It shows anticipated growth that will use the remaining reserve EDU's. No additional demand is identified in the plan.

The Amity Township sewage treatment plant provides service to 165 EDU's in the northwestern portion of Union Township, primarily serving the unincorporated areas of Unionville and Gramacy Gardens. Union Township has also purchased 200 EDU's from Amity, of which 7 have been used, leaving a reserve of 193 EDU's.

The draft plan also recommends an "Inflow and Infiltration" control program to reduce hydraulic load on the collection and conveyance system.

Earl Township. Amity Township has an agreement with neighboring Earl Township to provide 175 EDU's (**TABLE 4-2**). Of those, 150 are to meet an immediate need along the Manatawny Creek; the remaining 25 EDU's are to accommodate future growth. Earl Township's Act 537 Plan states:

The majority of future sewage systems are likely to be on-lot disposal systems for individual, single-family residences over the next ten years. Within the next five years, public sewers for the Manatawny Creek area are likely to be constructed and available for subdivision proposals in the vicinity, for which capacity will be planned to a limited extent.

4.6 AMITY TOWNSHIP SEWAGE TREATMENT PLANT CAPACITY RE-RATE

The current Upgrade and Modification Project is scheduled to begin construction by Fall 2003 and will have a one-year completion period. The project is designed to provide maintenance improvements, increase operational efficiency, and enhance treatment capabilities.

Following completion of the Upgrade and Modification Project, Amity Township intends to submit a capacity re-rate study to the DEP. The study will examine the individual unit processes with respect to operational status and capacity, and propose an overall capacity re-rate of the facility. Based on population growth projections, an additional hydraulic loading of 636,915 gallons per day for the next 10 years would require a plant re-rating to at least 2.2 mgd.

The Upgrade and Modification Project will allow the facility to maximize treatment capacity of the existing plant footprint to the design limits with the limited money available. Accommodating future sewage flows much beyond the projected 10 year re-rate capacity would require a major plant expansion and significant capital improvements project. The limiting unit processes in going beyond an average daily flow of 2.4 mgd are the oxidation ditch, sludge digesters and chlorine contact tank. These processes would require that additional duplicate tanks be constructed, which presents challenges with respect to the limited land available at the diked plant site. Also, the age and condition of the anaerobic digesters may necessitate complete abandonment of the existing tanks and replacement with current technology, such as complete mixing "egg shaped" tanks.

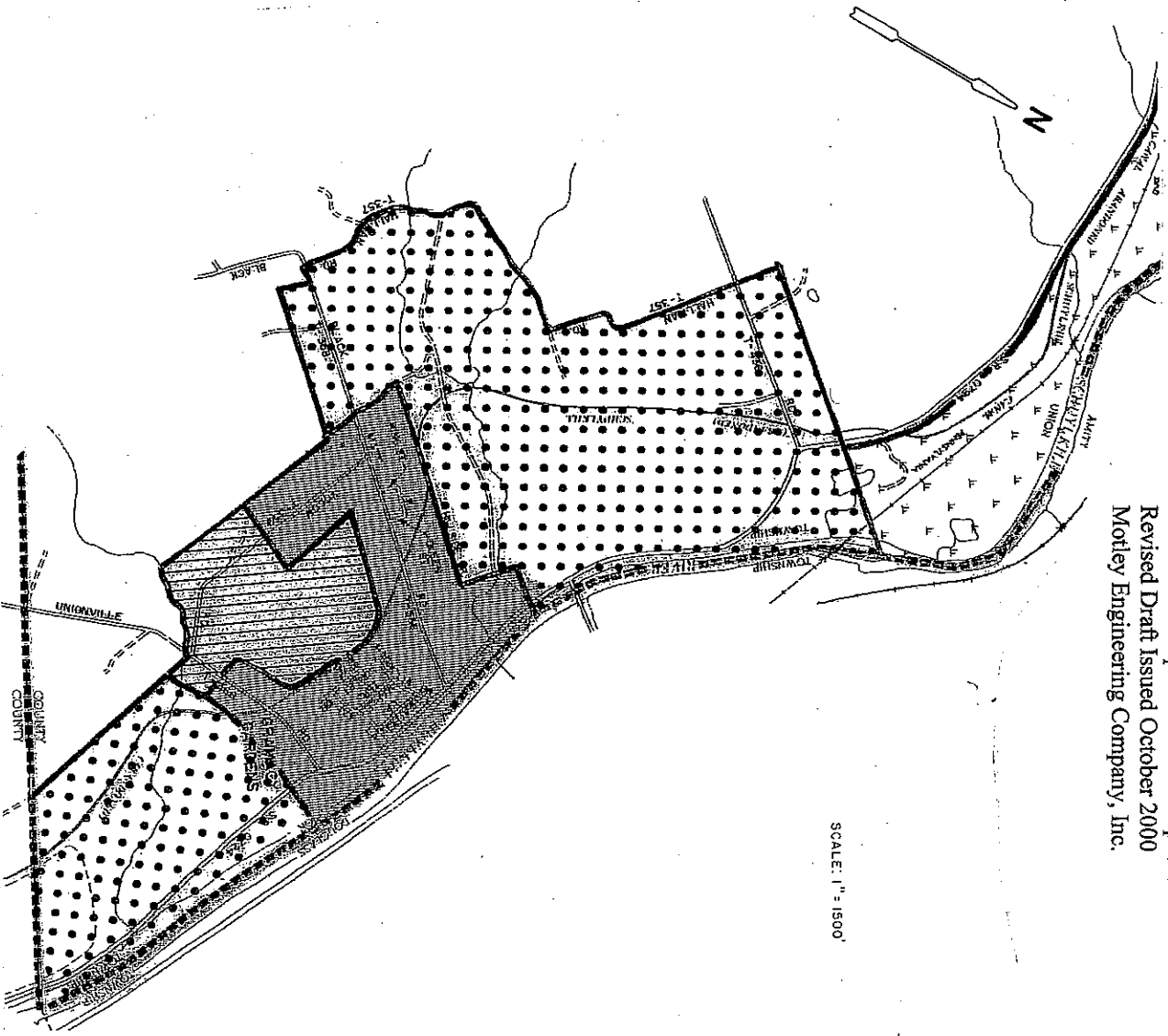
TABLE 4-7
Estimated Future Demand
5-Year and 10-Year Projections
Based on Population Growth Scenarios

Year	2008			2013		
Scenario	Addl. Popula- tion	EDU's	Gal/Day	Addl. Popula- tion	EDU's	Gal/ Day
EDU's	3,556	1,332	402,214	5,721	2,143	647,094
1990- 2000	2,682	1,004	303,357	4,357	1,632	492,814
1970-2000	2,078	778	235,040	3,378	1,265	382,081
1980 - 2000	1,802	675	203,822	2,927	1,096	331,069
BCPC	1,399	524	158,239	2,273	851	257,096

Average people/household 2.67
Average gal/day/EDU 302


FIGURE 4-4. Union Township Sewer Service Area Served by Amity Township


Source: Union Township Act 537 Plan Update
 Revised Draft Issued October 2000
 Motley Engineering Company, Inc.





SCALE: 1" = 1500'


FIGURE 18
 AMITY SERVICE AREA
 FUTURE GROWTH AREAS FOR
 MUNICIPAL SEWER DISTRICTS

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EXISTING SERVICE AREAS: These areas are currently being serviced by municipal sewerage facilities and services. All existing and proposed land uses within this area should be connected to the municipal sewerage facilities within the Amity Service Area.
- 

5-YEAR GROWTH AREAS: These areas are considered as proposed service areas within the Amity Service Area which should be connected and serviced by this system by the year 2005.
- 

10-YEAR GROWTH AREAS: These areas are considered as proposed service areas within the Amity Service Area which could be connected and serviced by this system by the year 2010.
- 

ULTIMATE GROWTH AREAS: These areas are considered as potential service areas which may eventually have the capabilities and capacities to be connected into the Amity Service Area.
- 

ON-LOT SEWAGE DISTRICT: These areas are not within the Amity Sewer District. Sewerage facilities are not planned within these areas of Union Township over this 20-year planning period.