

# **COMPREHENSIVE PLAN**

as amended, 2008

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DOYLESTOWN TOWNSHIP  
BUCKS COUNTY, PA

# **COMPREHENSIVE PLAN as amended, 2008**

## **DOYLESTOWN TOWNSHIP OFFICIALS**

### **Board of Supervisors**

Barbara N. Lyons	Chairman
E. Thomas Scarborough, Jr.	Vice Chairman
Barbara Eisenhardt	
Cynthia M. Philo	
Jeffrey A. Bennett	

### **Planning Commission**

Rick Colello	Chairman
Edward W. Redfield, II	Vice Chairman
George Lowenstein	
Thomas Kelso	
Donald S. Page	

### **Township Manager**

Stephanie J. Mason

### **Professional Planning Consultant**

Judith Stern Goldstein  
Boucher & James  
1456 Ferry Road, Bldg. 500  
Doylestown, PA 18901

RESOLUTION NO. 1425

**A RESOLUTION OF THE BOARD OF SUPERVISORS  
OF DOYLESTOWN TOWNSHIP AMENDING THE  
COMPREHENSIVE PLAN OF DOYLESTOWN TOWNSHIP**

**WHEREAS**, on or about September 19, 1989, the Board of Supervisors approved the Doylestown Township Comprehensive Plan;

**WHEREAS**, subsequent thereto, the Township has undertaken numerous studies, which said studies have generated reports and documents which should appropriately be included within the Comprehensive Plan of Doylestown Township;

**WHEREAS**, notice of the intention of the Board of Supervisors to consider amending the Township's Comprehensive Plan was provided to the Bucks County Planning Commission, the County of Bucks, the Doylestown Township Planning Commission, the Central Bucks School District, Warrington Township, New Britain Township, New Britain Borough, Doylestown Borough, Plumstead Township, Buckingham Township, and Warwick Township; and

**WHEREAS**, after public hearing, the Board of Supervisors has concluded that it is in the best interest of the Township that the Comprehensive Plan of Doylestown Township be amended as hereinafter provided.

**NOW, THEREFORE**, be it resolved by the Board of Supervisors as follows:

1. The preface to the Comprehensive Plan adopted in September of 1989 shall be amended so as to include the following language:

The Comprehensive Plan of Doylestown Township is a living document that establishes the goals and objectives of the Township with respect to natural features, land use and housing, non-residential development, open space and recreation area, circulation and community facilities and services. The Comprehensive Plan is intended to be reviewed, updated, amended and/or appended from time to time as conditions warrant. It is also merely one of the

many planning documents that Doylestown Township has adopted and uses on a regular basis to set planning policy and procedures for the Township.

In the time since the current Comprehensive Plan was adopted in 1989, Doylestown Township has performed studies and has prepared many planning reports and documents. These planning studies, reports and documents span a wide variety of topics, each of which has been intended to become a part of the Township's overall planning tools, and by reference, a part of this Comprehensive Plan.

In 1994, the Doylestown Community Hike & Bike Path System design requirements and construction standards were incorporated into the 1989 Comprehensive Plan.

The following additional studies, reports and documents shall be incorporated and become a part of the Comprehensive Plan.

- (a) Doylestown Township Open Space Plan, June, 1998;
- (b) Neshaminy Creek Watershed Rivers Conservation Plan, 1997;
- (c) The Gateway Study, November, 2000 (study of North Main Street)
- (d) The Gateway/Corridor Study of October, 2005 (Study of S. Easton Road);
- (e) Design Requirements and Construction Standards for Doylestown Township Pedestrian and Bike Facilities, April, 1996;
- (f) Edison Village Study;
- (g) Route 611 Corridor Study, 1992;
- (h) The Doylestown Township Park, Recreation and Open Space Plan, 1992;
- (i) The Doylestown Township Act 537 Sewage Facilities Plan, 1999, as amended;
- (j) Doylestown Community Park, Recreation and Open Space Plan 2007; and
- (k) Act 167 Neshaminy Creek Watershed Stormwater Management Plan.

Since the current Comprehensive Plan was adopted in 1989, population changes and development have occurred within the Township. An analysis was done to determine if sufficient area is available in the Township to accommodate housing for the projected population increase. Based on current zoning regulations, the amount of vacant land available within the

residential districts of the Township and population estimates, it has been determined that land available within the Township is sufficient to provide housing for the anticipated population growth.

2. In all other respects the 1989 Doylestown Township Comprehensive Plan is reapproved subject to the amendments to same as set forth herein.

3. The Doylestown Township Comprehensive Plan will hereafter be referred to as the Doylestown Comprehensive Plan, as amended, 2008.

4. Comprehensive planning in Doylestown Township will continue to respect municipal land use and land use policies of neighboring municipalities.

5. Any planning instruments adopted by Doylestown Township following this amendment may be included in an Amended Comprehensive Plan by Resolution.

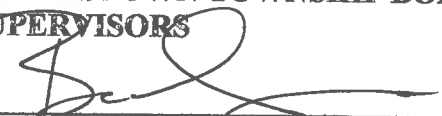
6. If there are any planning documents adopted subsequent to the adoption of this Resolution that are in conflict with a prior planning document, it is understood that the later planning document shall apply.

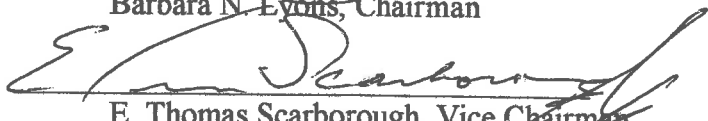
7. Comprehensive planning shall continue and shall include periodic community meetings with the residents, the Township Planning Commission, the Township Planner and the Board of Supervisors, as appropriate.

**THIS RESOLUTION** was duly adopted at a meeting of the Board of Supervisors held on the 16th day of September, 2008.

**DOYLESTOWN TOWNSHIP BOARD OF SUPERVISORS**

By:

  
\_\_\_\_\_  
Barbara N. Lyons, Chairman

  
\_\_\_\_\_  
E. Thomas Scarborough, Vice Chairman

  
\_\_\_\_\_  
Jeffrey A. Bennett

\_\_\_\_\_  
Barbara Eisenhardt

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Cynthia M. Philo

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BUCKS COUNTY, PA

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### **Township Manager**

Stephanie J. Mason

### **Professional Planning Consultant**

Judith Stern Goldstein  
Boucher & James  
1456 Ferry Road, Bldg. 500  
Doylestown, PA 18901

# Memo

**To:** Doylestown Township Planning Commission  
**From:** Valerie Spooner and Judy Stern Goldstein  
**Subject:** Comprehensive Plan Update  
**Date:** March 25, 2008

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As requested I calculated the amount of vacant residential land within Doylestown Township and the number of dwelling units and people that could be supported by that area in order to determine if vacant residential land within the Township is sufficient to meet the housing needs of the anticipated future population of the Township. Following are my calculations:

In the time since the current Comprehensive Plan was adopted in 1989, population changes and development have occurred within the Township. Following is an assessment of expected population change and the amount of land available to fulfill housing needs:

#### Doylestown Population Projections 2005-2020

Year	Population / Projection
2000	17,619
2005	18,570
2010	19,520
2020	21,430

% Change projected 2005-2020 = 21.6%, or an increase of 2,860 people.

The average household size in Doylestown Township is 2.63 persons according to the year 2000 Census Data from the U.S. Census Bureau. Therefore, approximately 1,088 homes are required to accommodate the population increase between 2005-2020 ( $2,860/2.63 = 1,087.45$ )

Vacant land within residential districts in Doylestown Township totals approximately 1,402.11 acres. An estimate of the number of lots this area can support is calculated as follows:

Zoning District	Vacant Land AC (SF)	Minimum Open Space Ratio	Minimum Residential Lot Size	Number of Dwelling Units
R1	577.33(25,148,735.71)	0.32	22,000 SF (single-family with lot averaging B-9)	777





R1a	0.02(33,977,784.58)	0.45	43,500 SF (single-family detached cluster B-7)	429
R2	16.35(712,126.35)	0.50	1,600 SF (multifamily B-6)	222
R2b	13.78(600,120.62)	0.20	2,500 SF (single-family attached B-4)	192
R4	14.63(637,221.97)	0.20	1,800 SF (multifamily B-6)	283
TOTAL:	1,402.11 Acres (61075989.23 SF)			1,903 DUs

Additionally, four subdivisions containing approximately 46 Dwelling Units are anticipated to be constructed in the future and can be added to this total:

- Doylestown Woods – 7 DUs
- Mains Tract – 2 DUs
- Gross Tract – 24 DUs
- Eastburn Tract – 12 DUs
- Total – 45 DUs

1,903 DUs + 45 DUs = 1,948 potential DUs

This total does not account for roadways and stormwater management areas and may likely be a lower number than indicated above, the number of dwelling units that could be constructed within the available land is more than adequate to accommodate the expected population increase.

# Memo

**To:** Stephanie Mason, Township Manager  
Doylestown Township

**From:** Judy Stern Goldstein, Stacy J. Ogur

**Subject:** U.S. Census Bureau: Population Estimates for 2007

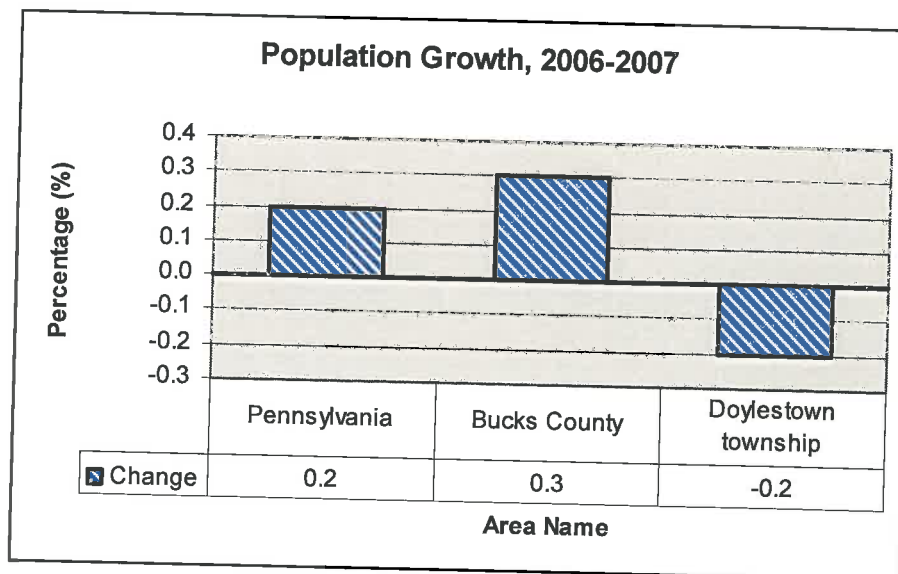
**Date:** July 10, 2008

The U.S. Census Bureau today released 2007 population estimates for sub-county geographies, including Pennsylvania cities, boroughs and townships.

Pennsylvania, as a whole, increased in population by 29,975 or 0.2% between July 1, 2006 and July 1, 2007. The state population in 2006 was 12,402,817 and increased to 12,432,792 by 2007.

Bucks County experienced a growth rate similar to Pennsylvania increasing by 0.3%, from 619,407 to 621,144 between July 1, 2006 and July 1, 2007.

Despite growth in the County, Doylestown Township experienced a decrease in its population. As of July 1, 2006 the Township population was 18,736. On July 1, 2007 the population was down to 18,706, a decrease of 0.2%.



# **COMPREHENSIVE PLAN**

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**DOYLESTOWN TOWNSHIP  
BUCKS COUNTY • PA**

**1989**

# **Comprehensive Plan**

## **Doylestown Township Officials Board of Supervisors**

Walter J. Conti, Jr. - Chairman  
John T. Carson, Jr. - Vice-Chairman  
Gregory Dubas  
Richard Gaver  
Jeffrey M. Williams

### **Planning Commission**

George Lowenstein - Chairman  
Andrew Cervelli - Vice-Chairman  
Susan Heckler  
Thomas Kelso  
Carolyn Waltz

### **Township Manager**

David R. Jones

### **Township Assistant Manager**

Stephanie J. Mason

### **Professional Planning Consultant**

Lynn Froehlich, AICP  
23 Chestnut Drive  
Doylestown, Pennsylvania

RESOLUTION # 327

A RESOLUTION OF THE DOYLESTOWN TOWNSHIP BOARD OF SUPERVISORS DOYLESTOWN, BUCKS COUNTY, PENNSYLVANIA, ADOPTING A REVISED COMPREHENSIVE PLAN FOR THE TOWNSHIP OF DOYLESTOWN.

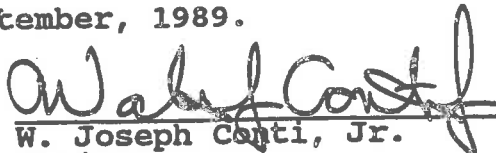
WHEREAS, the Board of Supervisors of Doylestown Township adopted the first Comprehensive Plan back in 1963 and last revised it in 1972 and;

WHEREAS, the present Board of Supervisors and Planning Commission believe that the Township has experienced significant growth and changes in development over the years since the last Comprehensive Plan was revised and;

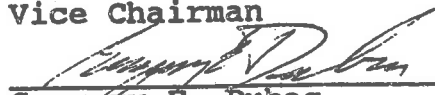
WHEREAS, the Board of Supervisors and Planning Commission thought that it was the appropriate time to update the Township's Comprehensive Plan inconjunction with the revisions that were made to the Township Zoning Ordinance in October of 1988.

NOW THEREFORE BE IT RESOLVED, By the Board of Supervisors of Doylestown Township that the Comprehensive Plan be revised in accordance with the draft prepared by the Township Planning Commission and dated April, 1989.

Resolved this 19th day of September, 1989.

  
\_\_\_\_\_  
W. Joseph Conti, Jr.  
Chairman

\_\_\_\_\_  
John T. Carson, Jr.  
Vice Chairman

  
\_\_\_\_\_  
Gregory E. Dubas

  
\_\_\_\_\_  
Richard K. Gaver

  
\_\_\_\_\_  
Jeffrey M. Williams

Attest:

  
\_\_\_\_\_  
Secretary

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## INTRODUCTION

The comprehensive plan is a tool which local governments use to direct growth and change in the community. Doylestown Township, like other Pennsylvania municipalities, has the power to influence community development through the comprehensive planning process so that both the individual rights of citizens and the overall good of the community can be safeguarded.

**Guidelines for Planning Established by the Commonwealth of Pennsylvania** • The Commonwealth of Pennsylvania grants the power to municipalities to prepare comprehensive plans through its Municipalities Planning Code (Act 247). With this power comes the responsibility of complying with the Code's provisions for plan content and with other guidelines for community development which have been established by other laws and court decisions. Each municipality must protect the health, safety and welfare of its residents.

**How the Plan is Organized** • The plan is organized around the goals for community development. Goal statements are accompanied by a discussion of background information and data. Suggestions for policies and approaches to implement the plan are summarized for each goal.

**Planning based on Existing Conditions, Goals for the Future, and Projected Changes** • The plan presented here is a revision of the 1972 Comprehensive Plan for the Township and takes into account the changes which have occurred since that time.

By combining an understanding of past trends, the limitations imposed by natural restrictions, the probable future growth pressures on the community, and the community's goals for future development, a plan can be prepared which will provide a framework within which change can occur in a positive way. Elements which help establish community character can be preserved. It provides a basis for not only reacting to problems but avoiding them by looking ahead.

**How the Plan Can be Used** • The role of the Plan is to provide a foundation upon which more specific projects and programs to preserve and improve Doylestown Township can be built. It provides a statement to individual landowners of what the Township sees as the desirable future direction for the Township. It provides a guide to the Township as it evaluates proposed developments, prepares its regulatory ordinances, and plans for future capital improvements.

**Plan Must be Flexible** • The plan should be viewed as a flexible tool. Circumstances will arise which could not have been anticipated during plan preparation. The plan should be able to reflect these without losing its effectiveness.



## Goal

Preserve the natural features of the township, including the drainage areas of creeks and their tributaries, wooded areas, steep slopes, farmland, and sensitive environmental areas.

## Background

Communities have become increasingly aware of the importance of natural features in the land use planning process. Flooding, water pollution, soil erosion and destruction of wildlife are a few of the consequences of allowing development without regard to the natural environment. Natural resources cannot be the sole determinants of future land use. They can be used to help determine the proper location and intensity for development of different types. They provide the framework within which more informed decisions can be made regarding the accommodation of community needs.

The concern for preservation of the natural features of the township is as old as the township's formal planning program. When the first township plan was prepared in 1963, the township set as a primary goal the "conservation of lands along the Neshaminy Creek, the Pine Run, and other tributary streams through special building provisions and the preservation of hillsides, steep slopes and wooded areas. "

The laws of Pennsylvania support planning based upon natural resource protection through its Constitution. The Constitution, amended in 1968 by public referendum, affirms the right to protect natural resources:

*The people have a right to clean air, pure water, and to preservation of the natural, scenic, historic and aesthetic values of the environment. Pennsylvania's public natural resources are the common property of all people including generations yet to come.*

## Topography

Topography is significant to land development because of its influence on development patterns and road alignments and because of the scenic beauty and variety it creates in the landscape.

The township's most gently sloping land is located in the area north of Route 202 and the Doylestown Borough boundary, extending north to Pine Run. South of Route 202 the topography is more rugged and uneven, with land elevations of less than 200 feet along the Neshaminy Creek near Edison to high point of more than 350 feet.

The most steeply sloping land is found in the southern section of the township in the form of bluffs along the Neshaminy Creek. Steep slopes of between fifteen and twenty percent are also found near the Warwick and Buckingham Township lines.

The disruption of steep slopes can cause excessive amounts of soil to be lost through erosion when the vegetative cover is disturbed. Silting of streams and diminished water quality results from this erosion. Removal of vegetation and the construction of impervious surfaces

diminish groundwater recharge and cause greater erosion and sedimentation in streams. This ultimately affects the quality of the water in the community by affecting the quality of surface waters and may diminish the capacity of streams to carry water, leading to flooding.

Development on steep slopes can require greater township expenditures for road maintenance and repair.

## Woodlands

Woodlands are concentrated in areas which have not been farmed in recent years: along streams, in wet areas, and on steep slopes. Woodland areas play an important role in maintaining the balance and health of the environment by:

- reducing water runoff and soil erosion on slopes
- helping to prevent water pollution by minimizing the sedimentation of lakes and streams.
- stabilizing stream banks.
- contributing to a more pleasant climate by adjusting the amount of dust and humidity in the air, providing shade, and reducing strong winds.
- serving as wildlife habitats, recreational areas, and land use buffers.
- adding interest, variety, and beauty to the landscape.
- providing shade to keep the water temperature low in streams, thus helping to maintain the aquatic life in streams.

The environmental, aesthetic, and recreational benefits of woodland areas justify their protection in the development process. Certainly not all wooded areas can be preserved as the township develops, but efforts should be made to protect a portion of the trees and use them in developing creative and appealing site plans.

## Soils

Soils have historically played an important role in the development patterns of Bucks County. Areas with good soils for agriculture have been used for farming. Areas with limited agricultural potential have been used for pastures or have remained wooded.

The capability of soils to renovate wastewater has been one of the most significant determinants of development patterns in recent years, with areas capable of handling on-site septic systems being developed before those which cannot accommodate septic systems.

The soils of Doylestown Township fall into two soil groups. The area north of Route 202 belongs to the Lansdale-Lawrenceville soil association. The ridges and upper portions of slopes are primarily Lansdale soils with the more silty Lawrenceville soils occupying the valleys. Lansdale soils are deep and well drained with a moderately permeable subsoil. Most problems with development on these soils are related to slope and stoniness.

Lawrenceville soils are deep and moderately well drained with a firm, dense silt loam lower soil that is moderately permeable. Development

problems are usually related to the seasonally high water table, permeability, and erosion hazard. Other soils found in this area include the well-drained Penn, Steinsburg, and Klimesville on the ridges and steep slopes, and the Chalfont, Doylestown, Abbottstown, Readington, Quakertown, and Duncannon soils in the valleys. Except for the well-drained Quakertown and Duncannon soils, this group of soils has moderate to severe drainage problems.

The southern section of the township falls within the Abbottstown-Readington-Reaville soils association. The generally slow permeability and seasonally high water table create problems of wetness which limit the use of septic systems and impose limitations on construction.

The waterways of the township, including large streams such as Neshaminy Creek as well as small unnamed tributaries, are bordered by Bowmansville silt loam and Rowland silt loam. Rowland soils are floodplain soils with low permeability. They are frequently flooded and have a water table that rises within 18 to 24 inches of the surface during wet periods, presenting severe problems for development. Bowmansville soils are poorly drained and water is frequently ponded for long periods during times of wetness.

Areas of hydric or wet soils are located throughout the township. These soil types have become important indicators of wetlands areas which are areas regulated by the U.S. Army Corps of Engineers under the federal Clean Water Act. The hydric soils within the township are Doylestown and Bowmansville. Soil type is one of three indicators of wetlands, the other two being the presence of wetland vegetation and hydrology – the saturated soil conditions and the drainage characteristics. The definition of wetlands used by the Corps of Engineers is:

*Those areas that are inundated and saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions, including swamps, marshes, bogs and similar areas.*

The Corps of Engineers has adopted regulations designed to protect wetlands because of their value to protection of water quality, provision of animal habitats, and their ability to absorb floodwaters. These regulations require a permit from the Corps to disturb wetlands areas. Wetland areas are also subject to state regulation by the Pennsylvania Department of Environmental Resources.

## **Agricultural Land**

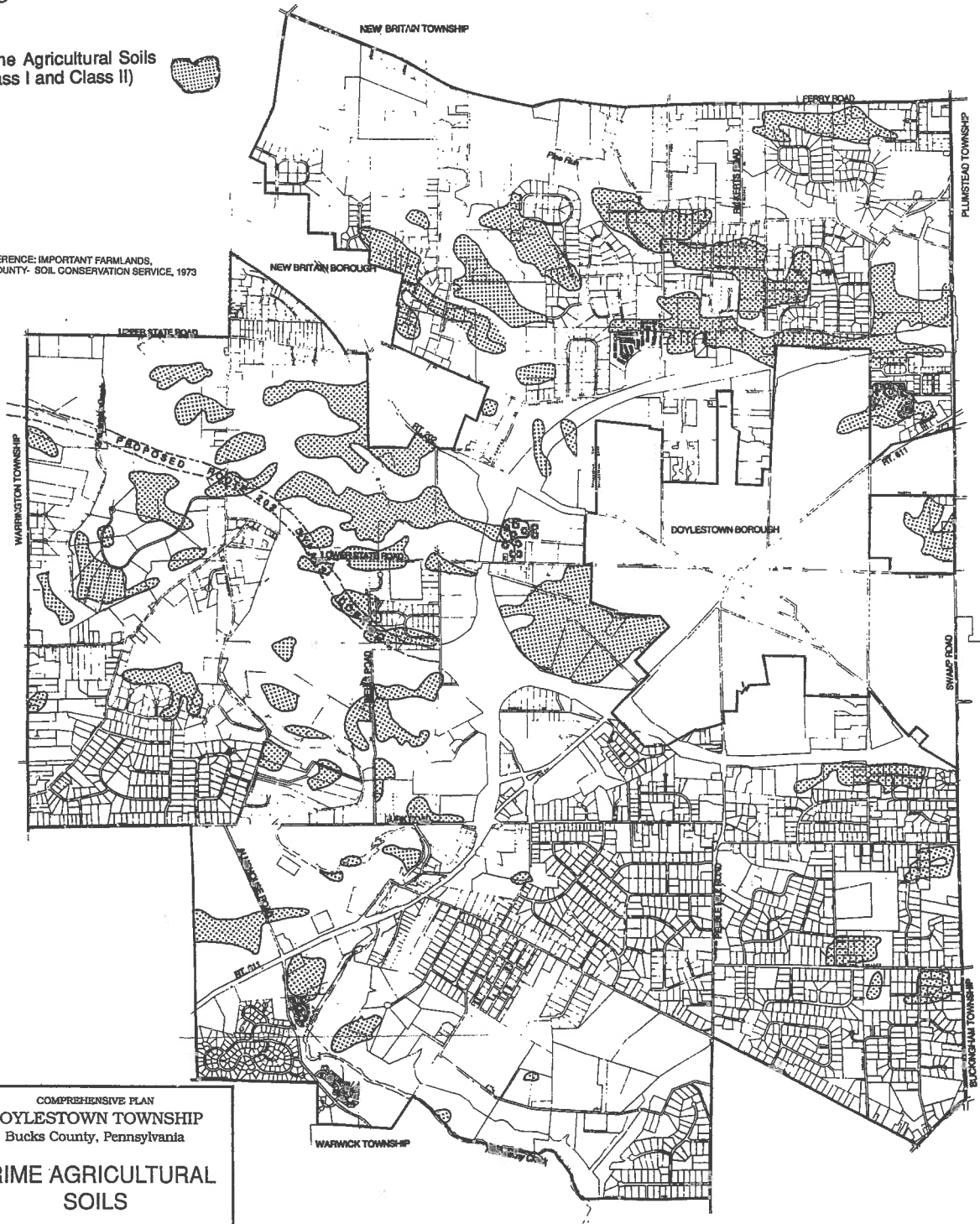
Agriculture used to be the main activity in all Central Bucks County communities, but it has been largely replaced by suburban residential growth. Today the major farmland in the township is owned and farmed by Delaware Valley College.

# Legend

Prime Agricultural Soils  
(Class I and Class II)



MAP REFERENCE: IMPORTANT FARMLANDS,  
BUCKS COUNTY- SOIL CONSERVATION SERVICE, 1973



COMPREHENSIVE PLAN  
DOYLESTOWN TOWNSHIP  
Bucks County, Pennsylvania

### PRIME AGRICULTURAL SOILS

0 800' 1600' 3200'

Many communities have attempted to slow the conversion of farmland to other uses. Preferential tax assessments have been in place in Bucks County for many years. Some communities have required the preservation of prime agricultural soils as part of the land development process, recognizing that they are a non-renewable resource. The Municipalities Planning Code states as one of the purposes of land use controls in Pennsylvania the preservation of "prime agricultural and farmland considering topography, soil type and classification, and present use."

In its Natural Resources Plan, Bucks County introduces new criteria for evaluating agricultural potential with the identification of "Significant Agricultural Areas." These areas include "Important Farmlands" (as designated by the Soil Conservation Service) of at least 500 largely contiguous acres with limited urban infrastructure and 3 percent or less site coverage. "Significant Agricultural Areas" have the potential of becoming voluntary farmland districts under the Pennsylvania Agricultural Area Security Act 43 (1981) and may ultimately be eligible for state preservation funding.

One "Significant Agricultural Area," centered in northern Warrington Township, incorporates a portion of Doylestown Township. The area forms a narrow strip extending from the westernmost corner to the approximate center of Doylestown Township, near the U.S. 611 by-pass and includes lands owned by Delaware Valley College, and contains soils which, because of their proper composition, acidity, moisture, temperature, consistency, and use, are the most productive for crops.

High land values may make it unappealing for many older farmers to continue in agriculture. However, some smaller farms geared to providing local food items have succeeded in nearby communities, and the township should encourage continued farming through its land use controls.

## Surface Water

Both the topography and soil conditions are affected by and related to the surface drainage pattern. The entire township lies within the Neshaminy watershed. The Neshaminy Creek watershed covers much of central and lower Bucks County. For over eight miles the Neshaminy meanders through the western section of the township, fed by numerous tributaries such as Cook's Run, Pine Run, Rich's Mill Creek, which flows into the Neshaminy at Edison, and an unnamed tributary originating in the Pebble Hill section of the township and flowing into the Neshaminy at Bridge Valley.

The Doylestown Township section of the Neshaminy is subject to significant sediment pollution as a result of land wash from urban and agricultural areas. This sedimentation increases the cost of water purification and blocks stream channels with a resulting decrease in the channel capacity.

## Floodplains

The floodplains in Doylestown Township are those areas adjacent to the Neshaminy Creek and its tributaries. Floodplains serve primarily to accommodate floodwater during periods of heavy precipitation. They contribute to the Township's scenic beauty, to groundwater recharge, and because of the natural vegetation associated with them, to soil erosion and sedimentation reduction, wildlife protection, and healthy stream conditions.

Doylestown Township participates in the National Flood Insurance Program (NFIP), which is designed to reduce flood hazards through floodplain regulation. The program is the result of an earlier shift in Federal policy away from structural flood control solutions to more comprehensive floodplain management approaches.

For purposes of regulation, the floodplain is defined by the 100-year or base flood which has a one percent chance of being equalled or exceeded in a given year. The regulations of the NFIP further delineate the floodplain by dividing it into the "floodway" and the "flood fringe", defined as follows:

*Floodway - The watercourse channel and adjacent land areas which must be reserved to carry the base flood without cumulatively increasing the base flood elevation more than a designated height. One foot is the maximum increase allowed by The National Flood Insurance Program.*

*Flood Fringe - The part of the base floodplain outside of the floodway.*

Under the NFIP, obstructions causing any rise in the base flood elevations are prohibited within the floodway. Some development within the flood fringe is permitted (under certain conditions), although this practice is discouraged by the Federal Emergency Management Agency. Any obstruction in the floodplain can affect flood levels, drainage patterns and floodwater storage capabilities, thereby potentially damaging properties both within and outside of the floodplain.

Areas not regulated under the NFIP but vulnerable to flooding nonetheless are those adjoining smaller order streams and containing floodplain or alluvial soils. The Soil Conservation Service's Soil Survey identifies seven floodplain soil types in Bucks County, two of which are located in parts of Doylestown Township: Bowmansville silt loam (Bo) and Rowland silt loam (Ro).

## Groundwater Geology

The geological formations upon which the township lies determine the topography of the landscape and the potential for groundwater supply. Groundwater is held in waterbearing rock formations or aquifers. Because many township residents are dependent on individual on-site wells for their water supply, the quality and quantity of groundwater is an important planning concern.

The two major geological features under Doylestown Township are the Lockatong formation and the Stockton formation. The Stockton formation generally provides a reliable water supply, with reported yields of more than 70 gallons per minute. The Lockatong is a much poorer supplier of groundwater, in terms of both quantity and quality.

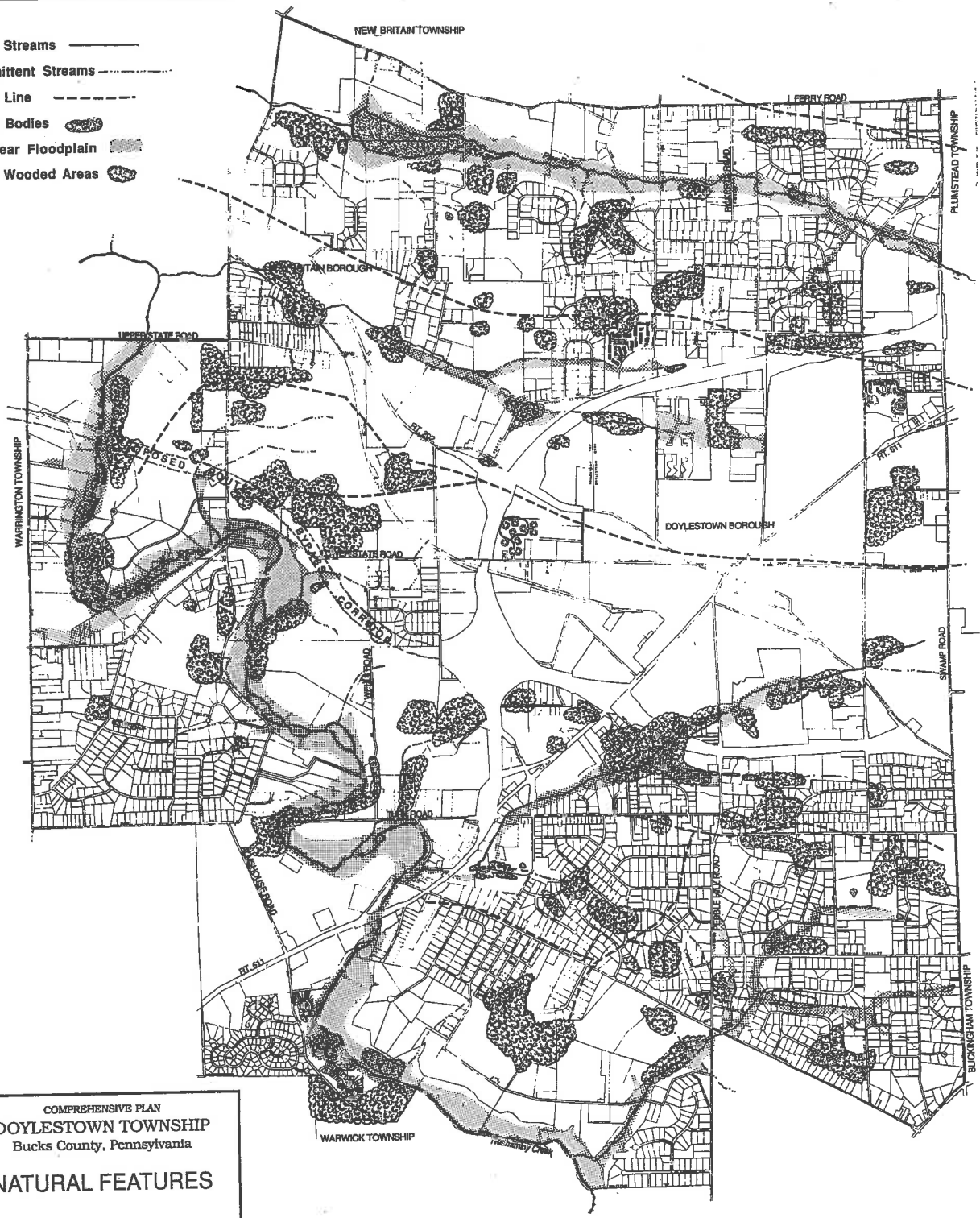
The Lockatong formation cuts across the southwestern section of the township from the intersection of Bristol and Upper State Roads to the intersection of Edison-Furlong and Pebble Hill Roads. It is not surprising that the reported groundwater supply problems are concentrated in the portion of the township underlain by the Lockatong formation. The survey of residents undertaken for the township's Comprehensive Plan for Water and Wastewater Facilities revealed that most problem wells are located in the southwestern portion of the township.

A small section of the township near Furlong is underlain by Cocalico Phylite which is a poor source of groundwater.

To maintain the groundwater supply, aquifers must be recharged to compensate for constant withdrawals. Precipitation provides the major source of recharge, and the capability of recharge depends upon the permeability of the surface and underlying rock formations, topography, and the presence of areas which can absorb and hold water such as wetlands and floodplains. Land use policies regulating impervious surfaces and the protection of wetlands and floodplains will directly influence the quality and quantity of groundwater supply.

# Legend

- Major Streams
- Intermittent Streams
- Ridge Line
- Water Bodies
- 100 Year Floodplain
- Major Wooded Areas



COMPREHENSIVE PLAN  
**DOYLESTOWN TOWNSHIP**  
 Bucks County, Pennsylvania

**NATURAL FEATURES**



## Policies and Implementation Strategies

The township should require the identification of important natural features on plans for proposed developments and require some level of protection, in accordance with the value and significance of the natural features.

**Woodlands** • Encourage protection of woodlands through protection standards. Zoning provisions should require that woodland areas be protected during the development process.

**Wetlands** • Require the protection of wetland areas by incorporating wetland protection standards into the zoning ordinance and by working with regulatory agencies. Zoning ordinance regulations should state that no development will be permitted on areas which meet the three criteria for wetland designation: soils, vegetation, and hydrology. Development plans should be required to show soil types. Any areas which are designated as hydric soils will require further investigation by the landowner to show that no wetlands will be disturbed.

**Water Supply** • Set controls on impervious surfaces to maximize groundwater recharge. Undertake a comprehensive groundwater study so that groundwater supplies are better understood.

**Water Quality** • Set limits on the amount of impervious surface which will be permitted for any type of development as part of the zoning ordinance. Runoff from paved areas diminishes water quality.

**Steep Slopes** • Restrict development of steep slopes through zoning regulations to avoid erosion and stormwater problems. Update and strengthen the township's soil erosion and sedimentation control ordinance.

**Floodplain Areas** • Restrict development in floodplain areas and on alluvial soils through zoning regulations. Preserve the stream valleys from development as a means of protecting not only floodplains but also steep slopes, wooded areas, and scenic areas. A township floodplain ordinance should include regulations limiting development of the flood fringe and alluvial soil areas to agricultural uses, natural open space and low density recreational and water-related uses. In addition, the ordinance should require mapping of floodplains and floodplain soils on development plats.

**Farmland** • Encourage the continuation of farming by keeping densities low in areas where prime agricultural soils are located, where farming is a significant land use, and where the County has designated portions of the township as a Significant Agricultural Area.

## Goals

- Provide for the orderly accommodation of growth within the township.
- Encourage high intensity land uses in locations where supporting facilities are easily available.
- Continue to provide for a variety of housing types.

## Background

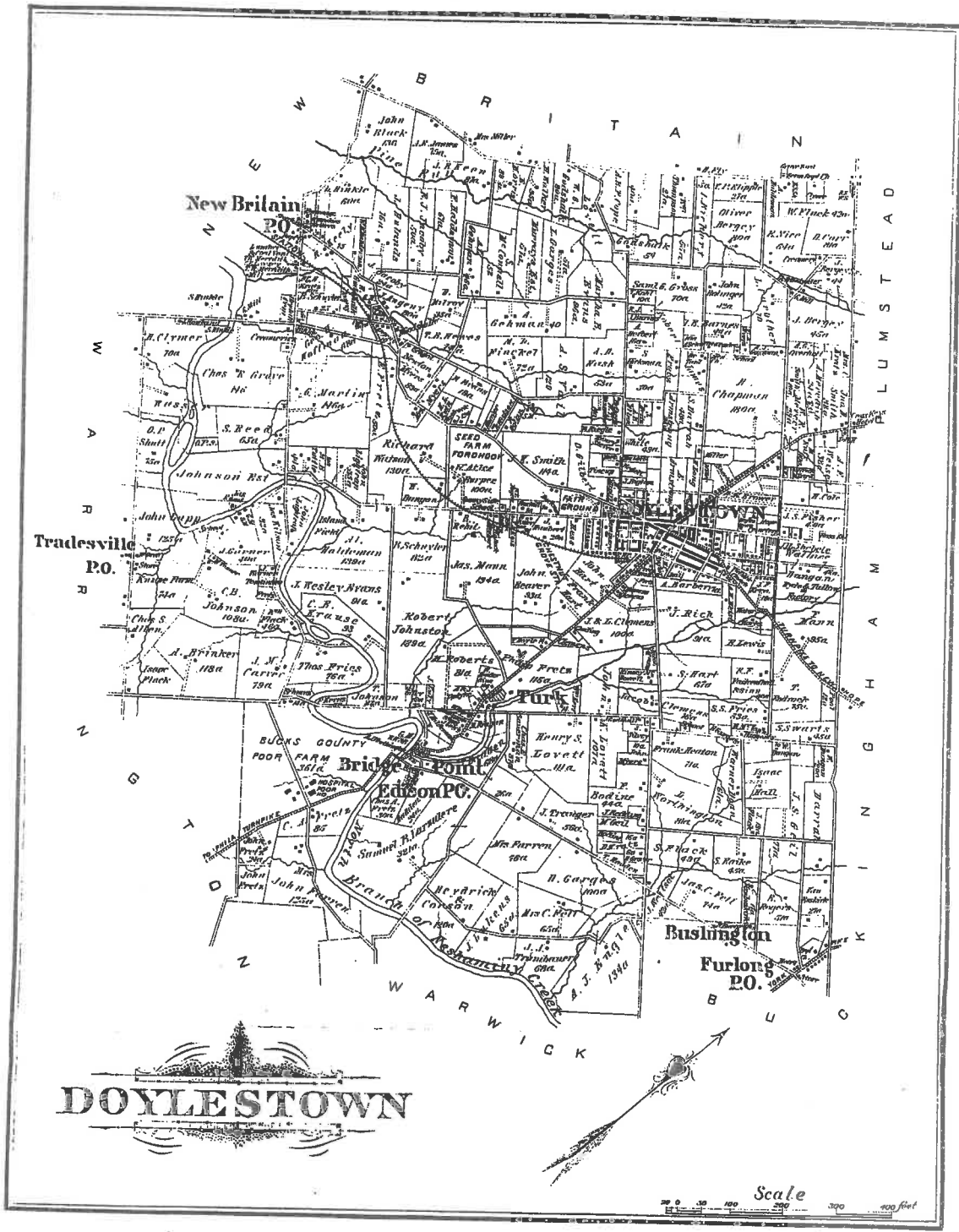
### Land Use, Housing and Population Trends

The original boundaries of Doylestown Township were set in 1818 in response to a change in Bucks County government. Until 1813, Newtown was the county seat, and getting there from the northern parts of Bucks County during the days of poor roads and limited transportation was a burden on county residents who wished to vote, go to court, or conduct official business. Doylestown was chosen as the new county seat in 1813 because of its location in the center of Bucks County. This change in the location of county government led to the creation of Doylestown Township in 1818 when territory was removed from Buckingham, New Britain, and Warwick Townships to create the new municipality.

Except for a few centers of activity at crossroads in the township, the township in 1818 was mainly agricultural. Development was limited to the areas around the county courthouse, Cross Keys, Tradesville (at Bristol and Lower State Roads), Edison (formerly known as Bridge Point where a wool factory was located), and Furlong.

Inns and taverns were established near the courthouse and at crossroads villages to serve visitors to the court and other travelers. The area also had some attractiveness as a resort because of the Neshaminy Creek which flowed through the township. With reasonable public transportation available during the 1800s from places such as Langhorne, Trenton, Willow Grove and Easton, the area became more accessible for recreation.

A change in township boundaries occurred in 1838 when the Borough of Doylestown was created. Although the official boundaries changed, the courthouse continued to be a focal point for the development of the area, and the presence of county facilities continues to influence development patterns. The two municipalities established a functional harmony which continues today, with the borough providing a central place where services are available and the township providing low-intensity residential and agricultural areas.



1891 Map of Doylestown Township

Another change occurred ninety years later, in 1928, when New Britain Borough was created out of township land and became a separate government.

The township has been a residential and agricultural community during most of its history. Two large institutions – Bucks County and Delaware Valley College (founded in 1865 as the Doylestown Agricultural and Mechanics' Institute) – occupy a large percentage of township land and have helped to preserve the feeling of openness as the township develops. The township has provided the area necessary for some of the large institutions serving Doylestown Borough and the rest of the central Bucks County area. As governmental, educational, and medical institutions have grown to meet rising demands, they have found land in the township to meet their space needs.

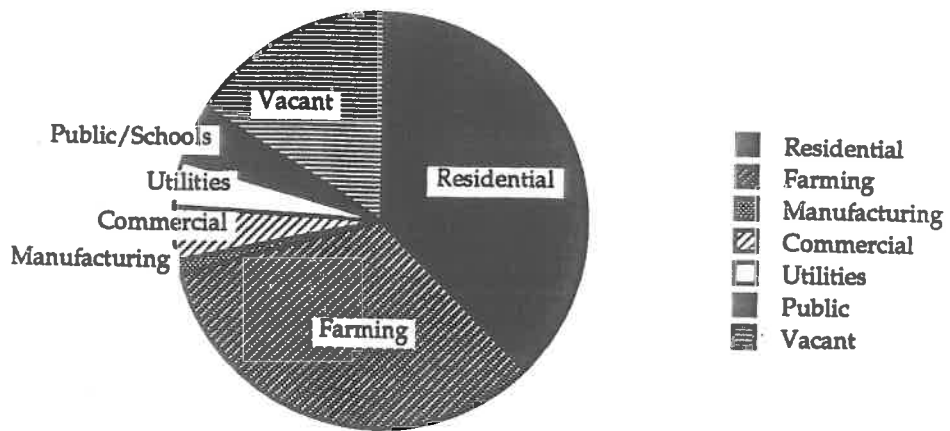
Doylestown was less affected by the major suburban expansion of the 1950s and 1960s than were the other suburban townships in lower Bucks County, Montgomery and Delaware Counties. Doylestown lies at the outer edge of the suburban area, and was not overtaken by the first wave of suburban growth which moved outward from Philadelphia. When Philadelphia was the employment center for the region, proximity to the city made these other areas highly desirable for residential expansion. In recent decades, the employment pattern has shifted so that suburban business centers now provide jobs throughout the suburban Philadelphia region. With the location of major business parks in central Montgomery County and some emerging in Bucks County, Doylestown is closer to employment centers and becomes a more sought-after place to live.

1980 LAND USE CHARACTERISTICS	<u>Acres</u> <u>Percent</u>	
	Residential	3,391.0
Agricultural	2,967.7	29.6
Mfg./Mining	116.9	1.1
Trade/Services	389.7	3.8
Utilities	335.6	3.3
Govt./Education	398.3	3.9
Parks/Recreation	962.4	9.6
Vacant	1,441.6	14.4
Total	10,003.2	100.0*

\* Numbers and percents may not add due to rounding.

Source: BCPC Land Use Report 1980

## 1980 LAND USE PATTERN



### Recent Changes

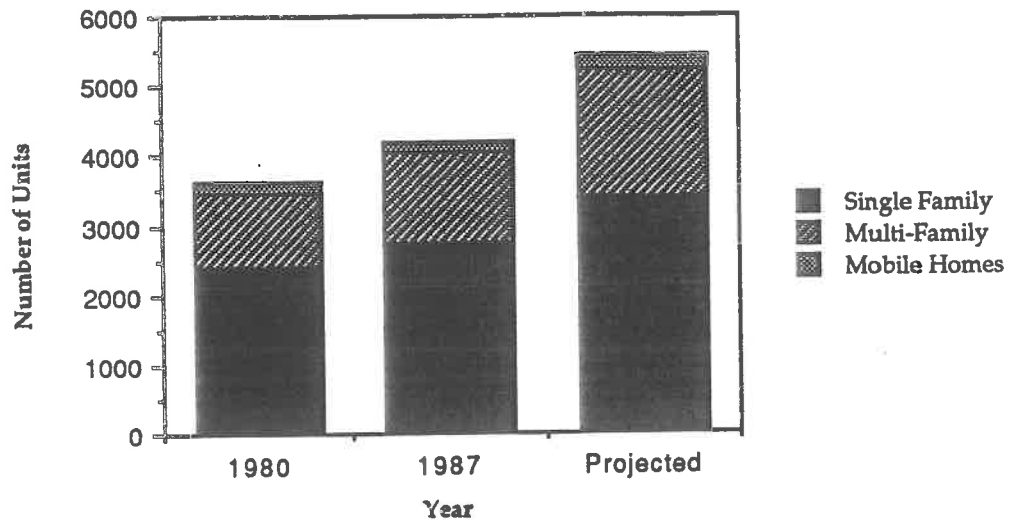
The major change in the land use pattern between 1970 and 1980 was the conversion of formerly vacant land into residential use.

Although development has changed what has historically been the rural character of Doylestown Township, the Township is far from being completely built out. During the period between 1980 and 1988, many acres of vacant or farm land have been subdivided for future residential development.

### ESTIMATED HOUSING UNITS FOR 1987 AND UNITS APPROVED AND/OR UNDER CONSTRUCTION (1)

	1980	1987	Units Approved	Total
Single Family Detached	2,412	2,572	829	3,401
Single Family Attached and Multi-Family	1,083	1,297	528	1,825
Mobile Homes	142	138	50	188
<b>TOTAL</b>	<b>3,637</b>	<b>4,007</b>	<b>1,407</b>	<b>5,414</b>

## Housing Units in Doylestown Township



Residential land uses in Doylestown Township consist primarily of single-family dwellings, with a growing number of single-family attached and multi-family units.

The distribution of agricultural, institutional, and public land is such that three large areas of contiguous residential development have formed. The largest concentration of single-family dwellings is located in the lower portion of the Township, generally within the bounds of the Route 202 by-pass, U.S. 611, and Edison-Furlong Road. The subdivisions within this area are typically made up of one-acre lots, taking access from cui-de-sacs or loop roads. Very few agricultural or other open spaces remain within these fairly homogeneous neighborhoods.

Similarly, the cluster of subdivisions situated between the U.S. 611 by-pass and Pine Run Creek consists of single-family lots uniformly sized and distributed. West of Almshouse Road is another concentration of residential development which also conforms to this typical pattern. One exception is the Quail Call development which, due to its proximity to the Neshaminy Creek and its floodplain, consists of lots ten acres in size or larger.

Large-lot single-family dwellings are scattered throughout the Township, as are a few isolated one- to two-acre lot subdivisions.

The mobile homes in Doylestown Township are exclusively situated in one of two mobile home parks. King Arthur's Court is located south of Doylestown Borough between U.S. 611 and the 611 by-pass. Colonial Park, at Shady Retreat and Burpee Roads, is being expanded to accommodate fifty more mobile home units.

Single-family attached dwellings, in the form of townhouse or condominium developments, are almost exclusively located adjacent to or near Doylestown Borough, due to sewer and water availability. These include Westwyk and Olde Colonial Greene on West Street, Chestnut Grove on Lower State Road, and Doylestown Commons adjacent to the 611 by-pass. Townhouse developments proposed or under construction are consistent with this pattern, except for those at the Warrington Country Club site which take advantage of the infrastructure serving commercial centers on U.S. 611. The township also has an apartment complex for homeless families in Bucks County, operated by the Bucks County Housing Group.

The predominance of residential land use in the Township is likely to continue, according to recent trends. Since 1980, over 500 acres have been built or approved for residential uses. Of these, 528 units are to be of the single-family attached variety, reflecting a trend toward a greater variety of housing types in Doylestown Township. An additional 600 acres are currently under consideration for residential uses. It is possible that by 1990, the amount of land devoted to residential use could total more than 4,000 acres, an increase of nearly 20 percent over the 1980 figure.

Some of the vacant land is less likely to be converted into residential uses in the near future because it is owned by large institutions or because it is protected by restrictive covenants. Bucks County owns several hundred acres at the Pine Run reservoir in the northern section of the township where land was acquired by the Neshaminy Valley Resources Authority when the impoundment was built. Additional land along the Neshaminy in the southern end of the township was also acquired in anticipation of the Dark Hollow Dam on the Neshaminy Creek.

Much of the township used for farming is owned and farmed by Delaware Valley College. In addition, some 68 privately-owned properties participate in the preferential tax assessment programs of Bucks County (Acts 515 and 319) designed to encourage continued farming or preservation of open lands. Most of these properties are located at the outer edges of the township, away from the core of development surrounding Doylestown Borough.

Because more than half of the township's housing units have been built since 1970, the condition of the units is quite good. In many cases the condition of the housing stock can deteriorate as it ages. Only 10 percent of the housing units were built prior to 1939. While the overall housing conditions are good, one area has been identified by the Bucks County Planning Commission as having substandard conditions. The area is located south of Edison-Furlong Road and east of Wilkshire. Some homes of these small lots were originally summer residences which have been converted to year-round use. As the result, some of these homes have insufficient plumbing and deteriorating structural elements.

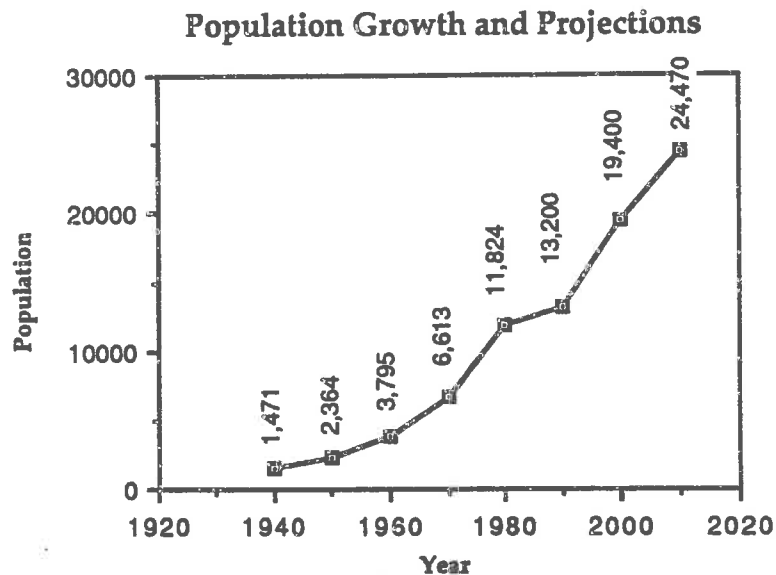
## Population Trends

Knowing how many people and households live in the township -- and what kinds of people and households -- helps the community plan to meet its future needs for services and facilities.

Between 1940 and 1980, the total population of Doylestown Township grew from 1,471 to 11,824, an increase of over 700 percent. For each of the first two decades of that period, the rate of growth was steady at about 61 percent. Between 1960 and 1970, the rate increased to 74.3 percent. The growth rate peaked at 78.8 percent between 1970 and 1980.

The Township's population has grown 9.8 percent between 1980 and 1987, bringing the total to an estimated 12,983.

Projections for the township suggest a continuation of this growth rate, as shown in the chart below which is based upon the analysis by the Bucks County Planning Commission.



The county planning commission has projected a population increase of as many as 3500 persons between 1987 and 1990 and an additional 6000 persons between 1990 and 2000. Assuming an average household size of 3 persons per household, this would result in about 1166 housing units in the 1987-1990 period and an additional 2000 units between 1990 and 2000.

## Population Composition

If the population growth experienced by Doylestown Township is examined in terms of its impact on various age groups, observations can be drawn about the changing composition of the Township's population.

The 77.8 percent increase which occurred between 1970 and 1980 affected some age groups more than others. The under-five population



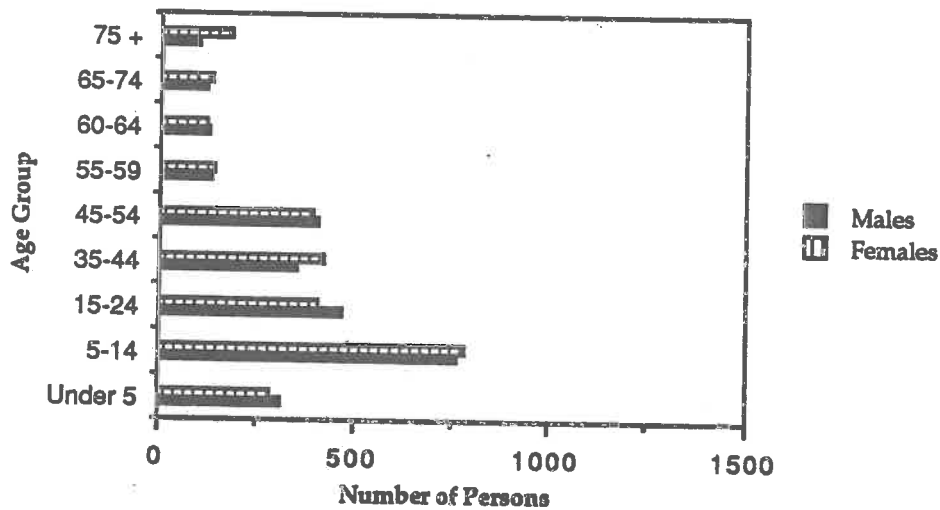
showed very little change; in fact, the number of males in that age group actually decreased slightly. The 15 to 24 age group, on the other hand, increased significantly for both males and females. There were 1,381 more 15 to 24-year-olds in 1980 than in 1970, which is a change of 158.7 percent. Since women in this age group are now of childbearing age, this change could have an impact on the number of births in the near future.

Population growth in general places additional responsibilities upon to township to provide services, such as police protection, township administration, fire protection, etc. These particular changes may lead to increased demands on the school system and increased demands on the township's recreation services and facilities.

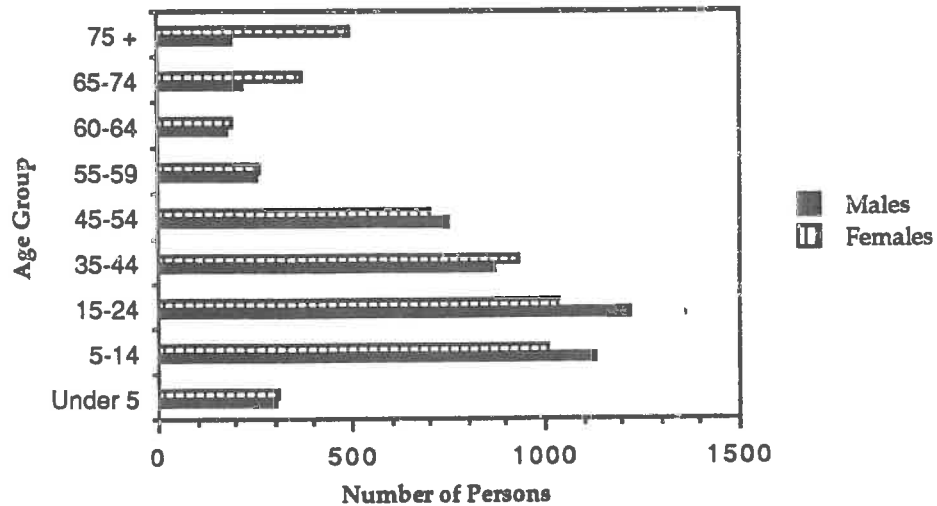
The only other groups which indicate greater percentage increases are the females between 65 and 74 (180.5 percent increase) and the 75 and over females (171.8 percent increase). The male population in the 75 and over age category also increased by over 100 percent. These changes reflect the effects of improved health care and longer life expectancy.

The remaining age groups grew at approximately the same rate as the overall population in Doylestown Township.

**Age and Sex of 1970 Population**



## Age and Sex of 1980 Township Population












Changes in household size affect the township's growth pattern. In 1980, the average number of people in a Doylestown Township household was 3.11, down from an average of 3.58 in 1970. This change reflects several factors affecting the general U.S. population: lower birth rate, more housing options for the elderly, and greater independence of young adults. If these trends continue, housing demand in the Township can be expected to surpass the rate of population growth.

Although the factors influencing municipal growth are extremely variable and often unpredictable, it is reasonable to assume that Doylestown Township will continue to grow through the year 2000.

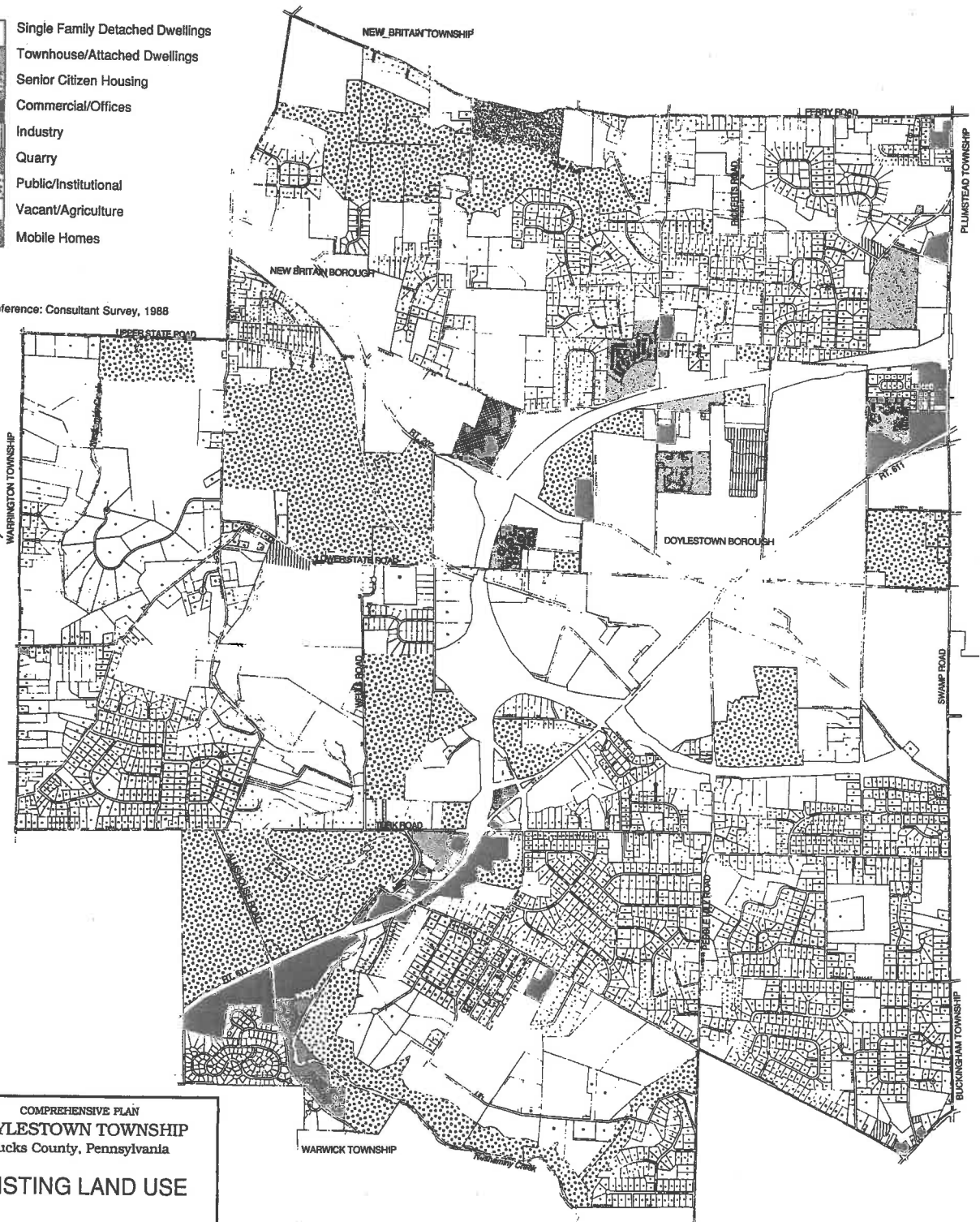
Major growth occurs through migration into the township. However, due to the large increase in the number of women of childbearing age as well as the increasing numbers of women over 35 having children for the first time, the number of births will probably play a larger role in population change in the next decade. Growth in the under-five population can be expected.

The effects of improved health care and longer life expectancy have translated into a significant increase in the number of persons 65 years and over. For Doylestown Township, this means that additional housing, services and health care facilities for this sector of the population may be required.

# Legend


-  Single Family Detached Dwellings
-  Townhouse/Attached Dwellings
-  Senior Citizen Housing
-  Commercial/Offices
-  Industry
-  Quarry
-  Public/Institutional
-  Vacant/Agriculture
-  Mobile Homes


Map Reference: Consultant Survey, 1988



COMPREHENSIVE PLAN  
DOYLESTOWN TOWNSHIP  
Bucks County, Pennsylvania

**EXISTING LAND USE**





## Housing Affordability

The rising cost of housing in Bucks County has raised concerns about housing affordability and whether or not the cost of living here has risen beyond the means of many families. The Bucks County Housing Plan (1988 Draft) reveals that the cost of a new average new house in the township in 1987 was more than \$239,000. Only four townships in Bucks County had a median new housing price exceeding this. The cost of an existing house being resold was significantly lower -- \$131,000.

While the income levels in the township are also relatively high for Bucks County, the incomes in the township have not kept pace with the cost of housing. According to the County's analysis, the average family in Doylestown Township today cannot afford to buy an average priced home, either new or existing house being resold.

The concern about providing a reasonable supply of housing which is affordable to a wide range of income levels has been addressed in the land use plan. The single most effective way of reducing housing costs is by providing for a reasonable supply of land zoned for higher densities. With several areas zoned for high density use, the township hopes to allow for the type of townhouse and apartment uses, along with small lot single family development, which will be affordable to a variety of household types and income levels.

The township has also helped to meet the housing needs of the very low income by accommodating the shelter for homeless families mentioned earlier.

## Policies and Implementation Strategy

This level of growth would bring enormous change to the township. To meet the goal of accommodating growth in an orderly fashion, the comprehensive plan recommends:

- Areas which have become established a single family detached, low density neighborhoods should be preserved as low density areas.
- Areas designated for higher density near the borough of Doylestown can continue to serve as the growth areas for higher density uses.
- Areas with development constraints due to floodplains, steep slopes, streams, and other natural features, should be designated for low density residential uses.
- The mix of housing types which has already been established -- townhouses, single family detached, apartments, and mobile homes -- should be encouraged through the zoning ordinance.

The Future Land Use Map shows the future development pattern recommended for the township. It is a continuation of the past development patterns which have encouraged the development of higher density uses close to Doylestown Borough. Historically this has been a pattern which makes sense: the road access is better; the area's only public transportation runs through the borough; and public services and commercial activities are centered there. The areas further removed from the borough-- those areas without public water and

sewer services and without direct access to major roads -- have evolved as lower density residential areas.

**How Much Growth is Anticipated and Can the Plan Accommodate It?**

The Future Land Use Map takes into account the development expected to occur in the near future, based upon the approved development plans and the existing level of development. The number of dwelling units approved for construction will, when constructed, bring the township population to approximately 16,500 persons by the year 1991.

This level of population exceeds the projections made for the township by county and regional agencies. The Delaware Valley Regional Planning Commission projected the 1990 population to be 13,220. This means that the township will accommodate more than its expected share of regional growth within the next five years.

Because the plan allows for future expansion of all housing types through its recommended pattern of land uses, the plan will continue to accommodate a reasonable share of regional growth. The projected population for the township (DVRPC) for the year 2000 is 19,400. The number of proposed developments currently in the works will bring the population close to that level prior to the end of the century; additional vacant land can easily accommodate this level of population under the density recommendations made by the plan.

**Future Residential Land Use Policies**

The Future Land Use Plan designates several types development.

**Low Density Residential Uses.** • The purpose of the low density residential areas is to protect the stream valley of the Neshaminy and the natural area in the upper end of the township centered around the Pine Run reservoir. The plan recognizes that the much of the land in these areas is already committed to higher intensity uses or is in public ownership, but the intent is to reaffirm the policy of protecting the woodlands, stream valleys, steep slopes, and natural areas along these waterways as future development occurs. The recommended density is lot sizes of two acres with mandatory protection of natural features. The township should take advantage of the recreational potential of the Neshaminy valley by considering walking trails or other low-intensity recreational facilities.

The three areas suggested for low density development are:

- the area between Ferry Road and Sandy Ridge Road
- the Neshaminy Valley between Upper State Road and Turk Road
- the Neshaminy Valley in the lower section of the township up to the Warwick Township border.

**Moderate Density Residential Uses** • Most of the township is devoted to moderate density single family residential uses, with lot sizes of approximately 40,000 square feet. The plan proposes a continuation of this type of development in areas where this type of land use is established. Provisions should be made for slightly smaller lots if served by public water and sewer and if a portion of the land is preserved for open space.

**Higher Density Residential Uses** • The higher density residential uses should be centered around the borough and around major transportation routes, as they have been in the past. Several types of higher density residential areas are proposed:

- mobile home development in the mobile home park area
- townhouse development, similar to existing townhouse development, at a density of no more than 6 dwellings per acre
- apartment or multi-family development, at a density of not more than 10 dwellings per acre
- small lot single family development at a density of not more than 3 dwellings per acre.

These types of residences must all be served by public water and sewer because of the inability of on-lot systems to accommodate higher density development.

Higher density residential uses should be accommodated in order to encourage affordable housing. The township is aware of the rising cost of housing, and through its land use controls, is attempting to encourage housing which a wide range of families can afford. By reducing the required lot size, reducing lot frontage requirements, reducing front yard setback requirements, and considering smaller street widths, the township zoning and subdivision ordinances can allow for lower cost housing to be constructed.

The proposed residential areas -- which allow for townhouses, apartments, and small single family development -- are designed to meet the housing needs of people of various ages, income levels, housing preferences, and life styles.

The criteria and development standards for nonresidential uses are discussed in a later section of the plan.

### **Future Development Trends**

Even as the township grows in accordance with the proposed plan, there will be development issues facing township officials. Among the trends likely to emerge in the next decade area:








**The possible transformation of institutional land into land for development** • Although the open lands of the College and the County have been viewed as permanent, recent evaluation by the College of its future need for land has resulted in changes in zoning on large parcels of College-owned property from institutional to residential zoning.

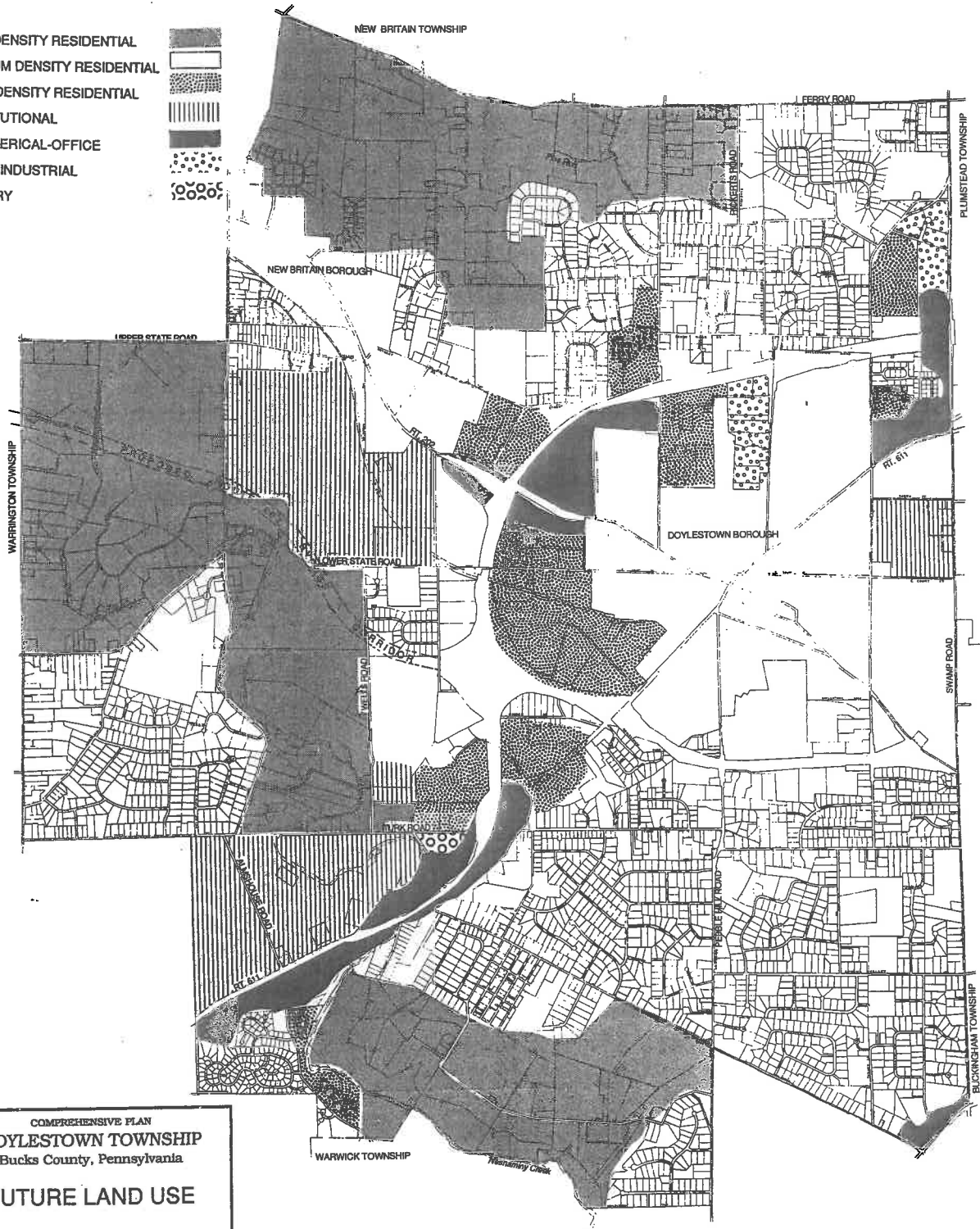
Similarly, the Tabor Children's Services property holds a large piece of underutilized land in the center of the township. Township officials should be prepared for the possible transformation of these lands as institutional needs change or become more clearly defined. The future land use plan concept of concentrating development around the borough, of protecting the areas along the streams valleys, of protecting the low density single family detached residential neighborhoods, and of providing reasonable transitions between dissimilar land uses, should be kept in mind when evaluating the future use of institutional lands.

**Infill development** • As the larger parcels of land are used for major subdivisions, the remaining smaller parcels are likely to be subdivided into lots meeting the minimum lot sizes specified by the zoning ordinance. The same is likely to occur on the few remaining vacant parcels in nonresidential areas. The concern facing township officials is the need to rely on established policies regarding zoning boundary lines and to evaluate carefully zoning change requests in light of long-term community goals. The areas where two types of land uses meet become vulnerable to such requests for changes, and the township shall strive to minimize conflicts among neighboring land uses.



**Redevelopment of areas** • Some of the areas along the major roads -- Route 611, Swamp Road, and Route 202 -- will be subject to redevelopment proposals as former residences are transformed into commercial establishments or small scale commercial uses are redeveloped into unified and more intense commercial development. As this happens, two critical concerns emerge: the appearance of the redeveloped area and the access to roadways. Signs, buffers, parking lot design, control of access to larger roads, and management of traffic will become concerns of the township as this process occurs.

# Legend

- LOW DENSITY RESIDENTIAL 
- MEDIUM DENSITY RESIDENTIAL 
- HIGH DENSITY RESIDENTIAL 
- INSTITUTIONAL 
- COMMERCIAL-OFFICE 
- LIGHT INDUSTRIAL 
- QUARRY 



COMPREHENSIVE PLAN  
**DOYLESTOWN TOWNSHIP**  
 Bucks County, Pennsylvania  
  
**FUTURE LAND USE**



## Goal

**Maintain the balance of residential and nonresidential uses (commercial and industrial uses appropriately located to serve the local community).**

## Background

### Commercial Development

Commercial development within Doylestown Township is limited to the commercial areas along the major highways. Historically, local shopping needs have been met by Doylestown Borough.

The largest concentration of commercial development is located along U.S. 611, south of its junction with the 611 by-pass. This area contains several service stations, two garden centers, a small strip of retail shops, and two large shopping centers: the Jamesway shopping center which has been renovated to include office space and the Barn Plaza, a newer shopping center adjacent to the Barn Cinema.

A new shopping center at the intersection of Route 611 and Old Dublin Pike complements the commercial development in the borough along Route 611.

The only other significant commercial area in the Township is around "Cross Keys," the intersection of Routes 313 and 611. Strip commercial development characterizes this area, with a predominance of car dealers, body shops, and automotive accessory stores. A few fast-food restaurants are located on U.S. 611. A recent expansion of this commercial area has occurred with the construction of a new commercial center at the corner of 611 and Old Dublin Pike.

The small villages of Furlong and Edison contain a limited number of commercial uses. In addition, a few nonconforming commercial uses are scattered within the residential areas of the Township.

### Office Development

Offices, like commercial development, have located along main roads. The largest cluster of private offices is the newly constructed Bailiwick office park, which contains attached office condominiums and is located just above the U.S. 611 by-pass at Route 313. There are also several medical offices in the vicinity of Doylestown Hospital. The Jamesway shopping center on U.S. 611 contains some county offices in addition to its retail facilities. The County has continued to expand the office development at the Neshaminy Manor complex with the recent renovation of the old Almshouse building.

New office development is being constructed along Broad Street south of the Route 611 bypass where a general office building and an office facility for the Bucks County Intermediate Unit are being built.

## **Industrial Development**

With the exception of one quarry operation near Edison, the industrial uses in Doylestown Township fall into the category of "light industry." The only concentration of such uses exists on Broad Street, south of the 611 by-pass and adjacent to Doylestown Borough's industrial district where the small scale uses include a mini-warehouse complex, the headquarters of a moving and storage company, and several other light manufacturing uses. There are some industrial uses in Furlong along York Road and Edison-Furlong Road. There is one small industrial/research facility in the central portion of the township: the White Eagle Laboratory facility on Lower State Road.

## **Public and Institutional Uses**

The growth and change in institutional uses is another example of the functional relationship between the development of land uses in the borough and the township. Many of the area's institutions have found land in Doylestown Township on which to locate or expand their facilities. Institutions such as the Doylestown Hospital, the Central Bucks YMCA, the Bucks County Administrative offices, and the Bucks County prison, all of which were formerly centered in the borough, have been able to accommodate their growing space needs by locating in the township.

A large percentage of institutional land in Doylestown Township is owned by the Delaware Valley College of Science and Agriculture, much of which is either vacant or in agricultural use.

The County of Bucks is another large landholder. Approximately 200 acres on the west side of south U.S. 611 make up the Neshaminy Manor Complex. In addition to the Neshaminy Manor Home, this tract houses many County offices, the Emergency Services Training Center, the Rehabilitation Center, the Juvenile Detention Center, the Bucks County Correctional Facility, and vacant land for future County expansion.

The County also owns many acres of land in conjunction with the Pine Run Reservoir site at the northern end of the township and some land at the southern end along the Neshaminy Creek where land was acquired for the proposed Dark Hollow Dam.

Fonthill Museum, located at the intersection of East Court Street and Route 313, is another County-owned site. This historic structure was built and inhabited by the late Henry Chapman Mercer and is adjacent to the Mercer Tile Works, also on the tract and open to the public.

The Doylestown Hospital is situated on approximately fifty acres at the intersection of Route 202 and the U.S. 611 by-pass. This institution is owned and operated by the Doylestown Village Improvement Association. This medical complex now includes the headquarters of the Lenape Valley Foundation, a mental health facility. Plans for future expansion include medical office buildings and additions to the hospital structure.

A 32-acre tract between U.S. 611 and the 611 by-pass contains the Tabor Children's Services, which provides care and services for children.

The Doylestown Township Building is located on an 11- acre site on Wells Road. Plans for expanding the Township Building are underway.

## Policies and Implementation Strategies

The future land use plan suggests that the nonresidential uses continue to exist in the pattern established by past development. The township wishes to encourage and support the business community by allowing for appropriate expansion within those areas.

## Commercial Development

Commercial activities are restricted to major highways to allow for visibility and access. The plan suggests general commercial uses along Route 611 between the end of the bypass and the Barn Cinema and shopping center type development between the Barn Cinema and the township border. Similarly the plan recommends the location of general highway commercial uses at Cross Keys along Route 611 and Route 313. Shopping center development is recommended at the 611 - Old Dublin Pike intersection. General commercial uses are recommended for the Furlong area, recognizing the current development there. Some nonconforming commercial activities are located near the intersection of Ferry Road and Swamp Road and along Bristol Road.

The major development issue facing the township is not only the location of commercial uses but also the quality of future commercial development and redevelopment: how it will look and function in the community. The design of signs, parking lot layout, landscaping, architecture, and traffic circulation will set the tone for the nonresidential appearance of the township. Similarly, the relationship between residential areas and nonresidential areas should be controlled so that commercial development does not adversely affect residences. This can be accomplished by requiring adequate buffering and by preventing residential uses from facing commercial uses.

The following guidelines should be followed in considering the location and design of commercial activities.

1. The township should maintain the general boundaries of the existing commercial district. Extensions of strip commercial development should be avoided.
2. Access onto highways should be controlled to avoid large numbers of driveways onto major roads. This can be accomplished by limiting the number of access points per lot, requiring minimum spacing between driveways, encouraging shared driveways, regulating the minimum sight distance required, requiring access onto lower order streets, and limiting turning movements from driveway exits.
3. Control signs so that they meet the needs of the business community without detracting from the overall appearance of the commercial

areas. This requires limits on the height, number, lighting, and location of signs through zoning regulations. Signs which blend with the architecture of the buildings should be encouraged, as should signs which complement the architecture of the area.

4. Lighting should be controlled so that it does not adversely affect the surrounding neighborhoods. Lighting plans should be submitted with development plans, and lighting fixtures should meet the guidelines of the township for design and brightness.

5. Landscaping should be an important element in the design of commercial spaces and should be used to buffer commercial activities from dissimilar land uses, to allow for pervious surfaces within commercial areas, and to enhance the appearance of commercial developments.

## Office Development

The plan encourages future office development by expanding the areas recommended for offices. This recommendation is based upon the goal of providing for adequate office space for professional and business offices in areas which are attractive for office development due to their location and in areas which are transitions between dissimilar land uses.

The plan suggests the expansion of the office district to include the area along Route 202 between the bypass and New Britain Road. This area has good highway frontage and faces an existing office complex located on the other side of Route 202. Office development in that location would complement both the existing office and hospital uses and the proposed office/hotel development contemplated for the section of Route 202 between the bypass and the borough border.

The plan recommends that office uses be encouraged in the area bounded by Route 611, the bypass, and New Britain Road. This area contains several offices.

## Industrial Development

The plan suggests the continuation of the light industrial and quarry uses in the locations where they now exist. This represents a departure from the previous Comprehensive Plan which suggested the development of an Office-Laboratory district in the central section of the township. Much of the area recommended for these uses has been committed to residential development, making the future use of this area for office parks both unlikely and undesirable. Since 1972, the township has been able to meet the residential needs of a growing population and the space needs of growing public and quasi-public institutions. Therefore, the policies regarding industrial development are:

1. Maintain the boundaries of the present industrial district, as established by past land use patterns. The township provides for light industrial uses which are compatible with the residential nature of the township in locations suitable for these activities.

2. Establish strong controls on light industrial uses regarding impervious coverage, buffers, signs, and landscaping.
3. Limit industrial uses to areas where there is direct access to arterial or collector roads so that trucks and heavy traffic will not disturb residential neighborhoods.
4. Any future expansion of the industrial area should only be considered if public sewerage serves the area. Industrial development without public sewerage in other suburban Bucks County communities has led to serious health problems due to groundwater pollution.

## **Institutional Development**

The plan reflects the current pattern of major institutional uses in the township. However, policy changes by the institutional land owners will certainly require the township to make land use decisions about these areas in the future. The plan recommends that the following guidelines be used in evaluating requests for changes in use from institutional to other types of activities.

1. Surrounding Land Uses - The nature of the surrounding land uses and zoning should be considered to ensure the proposed use is suited to the area.
2. Circulation Needs - Can the road network accommodate the traffic changes without doing damage to the road system? Requests for changes in zoning should be accompanied by a transportation impact study. If the study suggests that major changes in the road network or intersections are required to accommodate future traffic, the township should consider whether or not such changes are suited to the area. The transportation network should not be viewed as a system which will be altered to accommodate any level of development. It should be viewed as an important element in determining community character and should be changed in concert with land use planning.
3. Availability of community services and facilities - The proposed change should be viewed in the context of necessary services and facilities. For example, a request for a large industrial park should be viewed in the context of water supply and sewage disposal concerns. Requests for higher density housing should be viewed in the context of the established plan goals of locating such uses close to the center of the township along major roadways.

## Goal      Create permanent open space and recreation areas.

### Background

The farms and undeveloped tracts of land throughout Central Bucks County have provided open space for Doylestown Township in the past. As the township moves into the next phase of its development, however, it becomes clear that this "borrowed" open space must be replaced with permanent open space in order to provide scenic variety, areas for recreation, and opportunities for residents to enjoy the natural landscape of the area. The discussion of open space involves two types of land use: open areas preserved from development to protect sensitive environmental areas and to leave unchanged some portion of the land as a cultural and educational resource; and recreation space which is designed to be used for outdoor activities and sports. The township is undertaking a revision to its 1972 Park and Recreation Plan which will be a supplement to this plan.

### Recreation and Open Space Facilities

During the 1970s the township took major steps toward addressing the need for parkland and open space.

The foundation for a park system was laid with the acquisition of 13 acres on Sauerman Road and the leasing of land from the County on Turk Road. The Sauerman Road property which adjoins the Neshaminy Creek is designated for passive recreation. The Turk Road property has been graded and developed for baseball fields which are used by area recreation groups for little league baseball programs. The Township in 1988 received 41 acres of open space in the floodplain of the Neshaminy as part of a subdivision along Lower State Road.

Township property is supplemented by a variety of other open space and recreational facilities.

Kutz School on Wells Road is a 12-acre facility with ball fields and playground equipment. The township has cooperated in the preparation of playing fields on a portion of the site which are used by local athletic programs.

Fonthill and the Moravian Tile Works are county facilities operated by the Bucks County Historical Society. The 77-acre area contains the two Mercer structures which are operated as museums, plus a large wooded area and open fields which are used for community events. The area is totally surrounded by Doylestown Borough.

Pine Run Reservoir is located in the northern section of the township. The property is owned by Bucks County and consist of a 39-acre reservoir surrounded by about 340 acres of undeveloped land consisting largely of floodplains and wetlands. Creation of the dam and impoundment altered the area but it has remained in its natural state since the reservoir was created. The land has no formal provisions for access, but it is used for fishing, riding, walking, and other low-intensity recreational uses.

Dark Hollow Dam lands lie at the southern end of the township. A total of 223 acres is owned by the county, although only a portion of this land lies within the township.

The Bucks County Fish and Game Association leases 34 acres of the county property along Turk Road along the banks of the Neshaminy for use by its members who use the area for archery and riflery.

Central Bucks West High School soccer fields are located within a 10-acre fenced site on Memorial drive adjacent to the YMCA. The central bucks school district is planning to build tennis courts for the high school on this site.

Hart Woods is a natural area of 20 acres on New Britain Road owned by the Bucks County Conservancy. This area is designated as a nature preserve with restrictions on vehicles, but is open for passive recreation.

There is a total about 600 acres of land devoted to either open space or recreation. Of this, three-fourths is county-owned land acquired in association with the two dam projects.

## Recreation Needs

The township has grown rapidly in recent decades, and the pace of development can be expected to continue. Even if no more development plans were to be submitted, the level of development which can be projected based upon approved or pending plans will put unprecedented pressure upon the open space and recreational resources of the area.

What are the recreational needs of a suburban community with 13,000 people? There are national standards prepared by the National Recreation and Park Association which are commonly used as guidelines, with the caveat that they must be carefully applied to reflect local cultural, socioeconomic, and density conditions. These national standards suggest that there be between 6 and 10 acres of *developed* open space for each 1,000 persons in the community.

Applying this standard to Doylestown would suggest a need for about 130 acres of developed open space. The Township does not currently meet this standard. Except for the soccer and baseball fields provided on County property, there are no developed recreational facilities. The national guidelines recommend a range of close-to-home park, playground, and athletic facilities.

Some recreational needs are met within individual neighborhoods in back yards and on the streets. But some recreational needs of suburban areas, such as the need for playing fields for organized sports, can only be accommodated through public action.

Peace Valley Park in New Britain Township is a major recreational resource for township residents. Without this County facility, the pressure to develop local recreation facilities would be even greater.

The township must not only work to meet current recreational needs but must act to add recreational land and facilities to keep pace with the needs of a growing population.

## Policies and Implementation Strategies

The township should seize the opportunities it has to protect critical natural features and provide land for recreational purposes. Yesterday's efforts to set aside open space and develop parks are uniformly applauded by today's beneficiaries.

**Provide for Recreational Land through the Development Process** • All residential development should be accompanied by provisions for recreation, either on the site of the development or through a contribution to the township's recreation fund. As the population reaches the projected levels, the township will have more people for which to provide open space and recreational areas and less open land on which to provide for it.

The national standards of the National Recreation and Park Association state that, on a subdivision or neighborhood level, there should be about 1 - 2.5 acres of recreation space per 1,000 people. Based on the densities and household sizes planned for Doylestown Township, application of this standard would suggest that 10 percent of the area of major subdivisions or residential developments should be set aside for recreational area.

Not all developments lend themselves to the inclusion of recreational areas. When this is the case, the township should have the option of accepting a fee in lieu of open space which can be used to purchase and develop recreational resources in more suitable locations.

**Target the Neshaminy Stream Valley for Open Space Preservation** • The most significant natural feature of the township, the Neshaminy Creek, is a logical focal point for preservation of open space. Because the land around the creek is floodplain with limited development potential, the opportunity for preserving it as open space arises. Several stream valleys in the Delaware Valley, such as the Wissahickon and the Pennypack, have established greenways along the streams where people can walk and where the natural character of the valleys is preserved. Both national studies and local surveys have revealed that walking is a favorite pastime, and protecting the corridor along the Neshaminy provides a logical area for a walking trail. The preservation of greenways along streams and rivers has become a top national priority since a 1987 report commissioned by the



President of the United States recommended that "communities create a network of greenways across the country...."

The Bucks County Park and Recreation Plan (1987) shows a proposed link park on the Neshaminy along its entire length in the township. A link park is a linear park which follows a natural stream valley or "links" towns or villages with a band of open space. Typically, a link park would be used for walking, hiking, riding, or biking trails.

The township should continue its policy of requiring the dedication of an easement for a greenway along the Neshaminy as properties are proposed for development. This has already been accomplished in some parts of the township. The township should work toward the preservation of the greenway through dedication of easements or donation or sale of lands.

The Neshaminy Creek valley has been the focus of preservation efforts for many years, as expressed in both township and County planning documents. A 1968 study prepared by Bucks County Planning Commission focussed on the Castle Valley portion of the creek, between Upper State Road and Turk Road, where the creek winds its way through the western portion of the township. Here the floodplain is unusually wide, suggesting that low intensity land uses would be most appropriate. The Castle Valley study recommends that: the stream valley core be used only for recreation and woodlands or other conservation uses; the stream valley fringe be used for recreation, institutional uses, conservation farming, and residential development on lots of 3 acres or more; and, areas outside the stream valley corridor can be used for higher intensity uses which require significant paving and grading. These policies, set more than 20 years ago, remain relevant and consistent with current township goals.

**Work toward a centralized park facility near the center of the township** • The township should work toward the long-term goal of establishing a central park facility near the center of the township. As the population grows, the township will be able to support a park complex. It should be conveniently located for township residents and should have convenient access. Such a complex might include playing fields, a playground, and, eventually, a swimming pool.

**Preserve the Pine Run area as a natural area** • The Pine Run reservoir, originally created as a means of flood control, now serves as the centerpiece of a 350-acre natural area. This area not only meets the needs of indigenous wildlife but also provides a respite from development in an area of growing population.

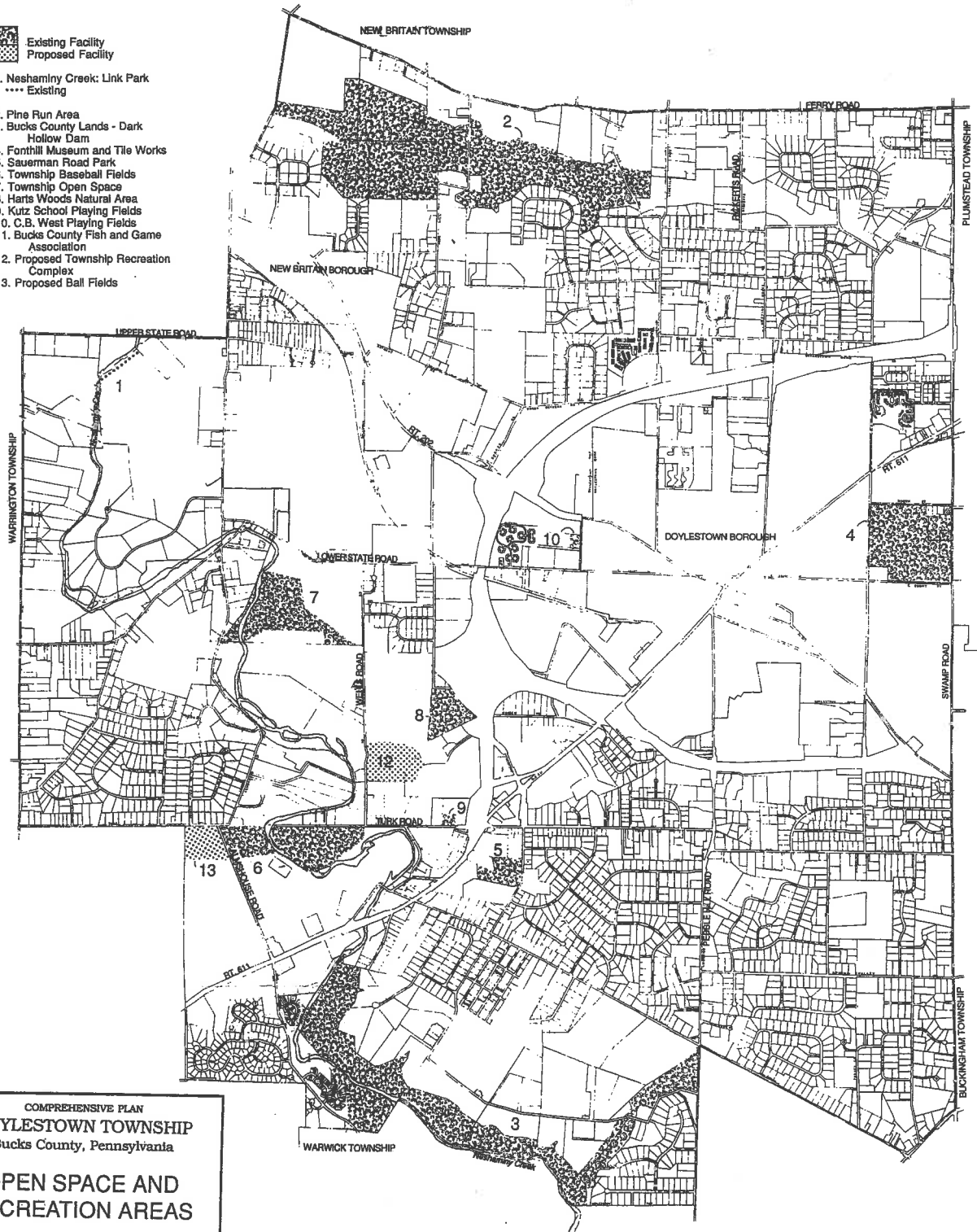
This area seems most suitable for quiet passive recreation such as walking, bird watching, or fishing. With the Peace Valley facility to the north and the proposed township park complex to the south, the Pine Run area seems well suited for preservation as a natural area.

The Bucks County Park and Recreation Plan also suggests a link park through the Pine Run lands on which walking trails might be provided.

# Legend



- 1. Neshaminy Creek: Link Park
- ..... Existing
- 2. Pine Run Area
- 3. Bucks County Lands - Dark Hollow Dam
- 4. Fonthill Museum and Tile Works
- 5. Sauerman Road Park
- 6. Township Baseball Fields
- 7. Township Open Space
- 8. Harts Woods Natural Area
- 9. Kutz School Playing Fields
- 10. C.B. West Playing Fields
- 11. Bucks County Fish and Game Association
- 12. Proposed Township Recreation Complex
- 13. Proposed Ball Fields



COMPREHENSIVE PLAN  
**DOYLESTOWN TOWNSHIP**  
 Bucks County, Pennsylvania

**OPEN SPACE AND  
 RECREATION AREAS**

## Goal

- Manage the local road system so it continues to provide safe and convenient access for township residents.
- Encourage regional cooperation in regard to state and federal highways.

## Background

The township road system has developed around several major regional highways. Route 611 crosses the township and serves as the main street of Doylestown Borough. U.S. Route 202 intersects Route 611 in the center of Doylestown Borough and runs for a short distance through the township. Swamp Road (Route 313), a major north-south route through Bucks County, forms the eastern boundary of the township.

Transportation and traffic have become major concerns in Central Bucks County since the previous comprehensive plan was prepared. The average daily traffic on major thoroughfares such as Route 202 and Lower State Road have more than doubled since 1968. The traffic on Route 611 through Doylestown Borough has also increased, even with the completion of a major bypass which diverts some 20,000 trips per day around the borough. Growth in the Central Bucks area, along with changes in lifestyles resulting in more cars on the road, account for the major traffic increases. Most families now have two wage-earners, putting many more cars onto the road system during peak hours. Office workers use less space per worker today than they did ten years ago, so the same office or commercial building today will result in more traffic and greater parking needs than it did in the past.

No other issue has as much potential for affecting the quality of life in Doylestown Township as the issue of traffic congestion. The township, through its planning and zoning, can protect its residents against incompatible land uses. The protection of the environment is addressed by many state and federal laws which are supplemented and supported by local regulations. But the township must exercise exceptional leadership in order to protect main roads from congestion, to protect residential streets from disruptive traffic, and to ensure that parking and access needs are met safely and conveniently.

The concern about the long-term capability of the road system is being addressed in a major township-wide transportation study being undertaken concurrently with the comprehensive plan update. The comprehensive plan addresses the relationship between land use and transportation and offers guidance to the township officials in making decisions about the circulation system. The transportation study will focus on the long-term improvement needs and on financing options for roadway and intersection improvements.

## **Relationship between Land Use and Transportation**

The land use pattern suggested by the Future Land Use Plan has implications for the future traffic patterns of the township. Decisions about future land use patterns were made with the road network in mind: higher density housing along Route 611 and Route 202; industrial areas with access to main roads to avoid truck traffic in residential neighborhoods; commercial uses along main arteries for convenience and visibility. These decisions reflect a general goal of concentrating heavy traffic on large roads and minimizing traffic volumes and through traffic on residential streets.

But the plan goes beyond this to suggest that the township balance the needs of efficient traffic flow with the goal of preserving community character. Many communities in more developed areas have sought to solve traffic congestion by building bigger roads, only to discover that the roads resulted in better access and created higher land values which led to demands for more intense land uses. More congestion resulted, and rather than reaching a solution through bigger roads, they created more problems.

While some major road improvements may be advantageous, other transportation problems may best be solved by looking at the land use pattern and by adjusting the transportation demands to match the capability of the suburban road system so that the residential character of the community can be protected.

## **Policies and Implementation Strategies**

The following strategies and policies are recommended:

Promote the Route 202 bypass and preserve the bypass corridor. The Route 202 bypass has been in the planning stages for more than two decades. Although the Route 611 bypass was completed in the 1970s, the 202 bypass had not received the political and community support to bring it to the forefront of transportation planning until recently. The proposed bypass, which would cut across the northwestern quadrant of the township from Upper State Road to connect to Route 202 at Pool's Corner, would serve as a link to an interstate road running from Delaware through Pennsylvania and into New Jersey. Route 202 is a limited access roadway in some parts of its length, but from Norristown in Montgomery County to West Amwell in Hunterdon County, New Jersey, it is a two-lane road with limited capacity and few access controls.

The township has actively supported the completion of a higher capacity road as a means of alleviating the congestion along 202 in Bucks and Montgomery Counties and taking the pressure off of smaller roads, such as Lower State Road and Upper State Road, which function as bypasses to 202. These roads are carrying heavier loads of traffic each year, posing a threat to the safety of the area's drivers and to residents whose homes face these roads.

The Township, in conjunction with county and regional highway planners, has mapped a potential corridor for the bypass, taking into account existing development, terrain, and interchange requirements. Applicants for development in the proposed corridor will be asked to work with the township to set aside the right-of-way. If the right-of-way becomes fully developed, there will be little chance of seeing the bypass become a reality.

Because the proposed bypass is a regional highway, the township must continue to cooperate and work with both the county and the neighboring municipalities.

**Establish a Street Hierarchy** • A street hierarchy is simply a classification of township streets according to their function. Like other elements in the community, the streets should be designed to serve their intended function. The two basic purposes of streets – to allow for traffic flow and to provide access to individual properties – are served to varying degrees by the different types of streets. Residential streets should not be designed to carry heavy through traffic. Truck traffic should not have to travel on narrow, winding country lanes. The street hierarchy includes the following types of streets:

- **Expressways** - Limited or no access to abutting land uses, with access limited to interchanges with major streets. An example is the Route 611 bypass.
- **Arterials** - An interregional highway which connects towns, with some direct access from adjoining properties. Example: Route 611, Route 202
- **Collector** - This type of street connects lower order residential streets with major arterials. These streets should allow for free traffic flow, with minimum disruption from parking and access driveways. Example: Almshouse Road; Edison-Furlong Road
- **Subcollector** - A subcollector, or primary residential street, provides frontage to individual lots and carries traffic to adjoining residential streets, but should not carry heavy through traffic. Example: Sandy Ridge Road
- **Residential Access Street** - A residential access street, or secondary residential street, provides frontage to individual lots and carries traffic at low speeds. Example: Oak Drive

**Planning New Residential Streets** • Most of the new roads in the township will be residential streets. Basic standards for street construction are part of the township subdivision ordinance. Standards for cartway width, sidewalks, cul-de-sac length, and construction specifications are contained in the subdivision and land development ordinance. However, the township has some discretion about the application of these standards, and the purpose of this plan is to provide guidelines for overall township circulation planning.

Plan streets based upon their function - The proposed function of streets should determine how big they are, whether sidewalks are needed, and whether or not they should be connected to stub streets or cul-de-sacs in neighboring subdivisions. For example, a short cul-de-sac serving five lots need not be as wide as a residential access street which serves 30 lots.

Required cartway width (the portion of the road which is paved) should be related to the following characteristics of the proposed development:







- Lot width - With wider lot widths, the cartway can be smaller because there will be fewer driveways entering onto the street and fewer cars parking on the street. When lot widths are narrow (less than 40 feet) cartway width should be greater to accommodate overflow parking and more driveways.
- Anticipated traffic - Smaller cartways can adequately serve developments with low anticipated traffic levels. A short loop street serving a few homes can manage nicely with a narrow street. Higher densities generating higher traffic volumes will need wider cartways.
- Curbing - Where curbs are provided, cartways need to be wider so drivers do not bump into curbing.
- On-street parking - If on-street parking is expected, cartways must be wide enough to handle two travel lanes and parking lanes.

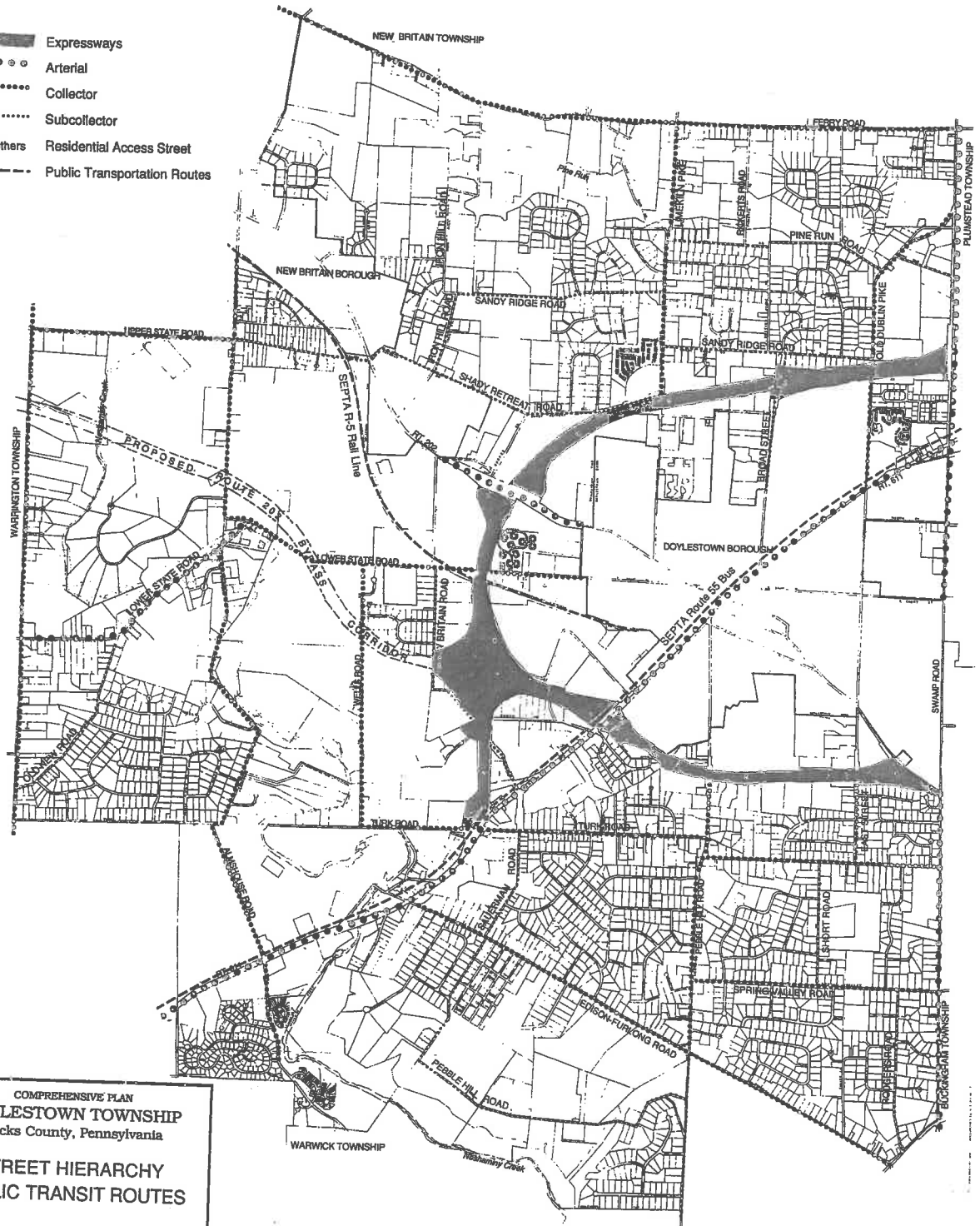
Sidewalks - Sidewalks should be provided where pedestrian safety is a concern. Sidewalks should be required where lot widths are small and densities are higher because of the higher traffic volumes which can be expected. Where a proposed development is close to a school, shopping area, or community center, sidewalks should be provided to allow for safe travel to such facilities. Although sidewalks are often not suggested for collector streets because there is a belief that no one will walk along these roads, collector street are often a good place for sidewalks. A concentration of activities along collector roads will attract visitors with and without cars, and the hazards to a walker along such roads are great. Route 611 by the Doylestown Shopping Center is a good example of a collector road with a sidewalk and with substantial pedestrian traffic.

**Setting Transportation Goals** • The comprehensive transportation study being prepared for the township should help decision makers set transportation goals for the community. Goals should relate to the desired level of performance, or "level of service," for roads and intersections.

Levels of service are quantitative measures of how intersections and roads operate, with level of service A being the best and F being the worst. For intersections with traffic lights, the level of service is measured by how long a car must wait to get through the light. For

# Legend


-  Expressways
-  Arterial
-  Collector
-  Subcollector
-  All others Residential Access Street
-  Public Transportation Routes



COMPREHENSIVE PLAN  
**DOYLESTOWN TOWNSHIP**  
 Bucks County, Pennsylvania

**STREET HIERARCHY  
 PUBLIC TRANSIT ROUTES**

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intersections without lights, the level of service is measured on the basis of "reserve capacity," or how many more cars could utilize the intersection and still have it function efficiently. For roads themselves, level of service is measured by the time it takes to travel a segment of roadway, in comparison to the posted speed limit.

The township can set goals for levels of service on the township roads and intersections. For example, the township may wish to state that the level of service at any intersection should not deteriorate below level C. Some intersections are already at level of service F, such as the Cross Keys intersection, but many are at A or B today. Traffic impact studies have been used by the township to help them assess the potential impact of proposed developments. These studies project future levels of service at roads and intersections within one-half mile of proposed developments. This information should be used to plan future road improvements and to assess developers for a share of the improvements needed to maintain the desired level of service.

Wider roads are not the only answer to congested highways. In fact, this may not be a desirable solution in a residential area. Steps such as controlling access from driveways along main roads and cooperation with regional agencies in improving public transportation can help reduce congestion. SEPTA's R5 line runs through the township and provides service to Montgomery County and Philadelphia. Improvements in service can increase ridership and reduce peak hour traffic.



**Goal**      **Provide adequate community facilities and services to accommodate expanding township population.**

**Background**      **Community Services and Facilities**

A community is not composed merely of activities and land uses connected by an efficient transportation system. What makes a community are the schools, the municipal services, the township government, and the community infrastructure which enable the conduct of suburban life as we know it.

The responsibilities of township government grow as the population increases. Not only are there more people to serve, there are new responsibilities which government must take on as the township increases in size and sophistication. Some community facility needs -- such as schools and libraries -- are met by other public bodies.

The township responsibilities which relate to land use and comprehensive planning area:

- water and wastewater services
- township municipal buildings, facilities and staff
- recreation and parks (see previous section)

**Water Supply** • The township has prepared a Comprehensive Water and Wastewater Facilities Plan which looks ahead to the future needs for public water supply.

Most buildings in the township get their water from individual on-site wells. There are a few sites in the township which are served by public or centralized water systems, including Delaware Valley College, Doylestown Hospital, the county's Neshaminy Manor Complex, the shopping centers on Route 611 south, and the townhouse complexes.

Water supply has been provided solely from groundwater in the past, and the plans for future systems suggest continued reliance on groundwater using a series of deep wells and storage tanks. It is current township policy to require a centralized water supply system for large subdivisions, with the intention of ultimately connecting these systems into a township-wide system.

The location of the future wells and tanks is being determined as part of the Water Supply Plan. Because of the terrain in the township more than one storage facility will be needed. One has been planned for the Chapman Road area, and another is being considered in the vicinity of Route 202 and the Route 611 bypass.

Based on the published data on groundwater supplies, the township can continue to rely on groundwater in the foreseeable future. However, the water supply plan warns that, as on-site septic systems are replaced by public sewage disposal systems, the recharge of groundwater supplies will diminish and alternative supplies may become necessary. Continued reliance on groundwater may be feasible if there is continued recharge of the water supply. This occurs when effluent is replaced locally through on-lot septic systems or through spray irrigation/ land application systems.

**Wastewater Treatment** • The link between sewage disposal methods and permitted densities has been well-established in the township's land use control program. Areas which were served by public sewers can accommodate higher densities and have been allowed to be developed at higher densities. Areas served by on-site systems were developed at lower densities. The treatment and disposal of wastewater for residential areas has been accomplished largely through on-site septic systems, resulting in the low-density residential development which is typical in the township.

The township has two sewer authorities working within its boundaries: the Bucks County Water and Sewer Authority which plans and implements sewage facilities in the northern section of the township, and the Doylestown Township Authority which covers the rest of the township.

Wastewater collected through sewerage systems in the northern portion of the township is treated at the Chalfont-New Britain Sewage Treatment Plant on Upper State Road. Expansion of the capacity at this plant will allow for new connections in the near future.

Wastewater facilities within the Township Authority area are currently limited to a few small scale plants and the larger King's Plaza plant on Almshouse Road.

The township's Comprehensive Plan for Water and Wastewater Facilities, currently in preparation, addresses several issues, including problems with existing on-site septic systems and methods to expand the system of public sewers. The plan suggests that the public sewers be expanded to areas of imminent development, using developer financing for expansion of the system. Current plans recommend the expansion of the King's Plaza plant and the construction of another plant somewhere along the Neshaminy. A major interceptor would be constructed along the Neshaminy to serve the proposed developments in the vicinity of Lower State and Almshouse Roads.

**Township Facilities** • The township administration is located at the Township Building on an 11-acre tract on Wells Road. The staff has expanded significantly in the past decade, and building expansion plans are being implemented to house the growing staff and police force.

As the township takes on more responsibility, the need for additional space arises. For example, the pace of development has created the need for a larger police force, road crew, and administrative staff.

Pennsylvania's mandatory recycling program has created a new role for the township. Required to have mandatory curbside recycling in place by November 1, 1990, the township has taken a leadership role in coordinating recycling in the Central Bucks area. The township will provide a place for recyclables, which will then be transferred to a county facility.

This new responsibility will require further development of the township building facilities to accommodate the collection of recycled materials.

## Policies and Implementation Strategies

**Coordinate the Planning of Water and Sewer Facilities with Land Use Planning** • The Future Land Use Plan sets certain goals for density and intensity of development based upon the overall concept of community growth and development. The township's planning policies have allowed for higher densities where public sewers are provided, so it is important that the plans for land use and sewerage be compatible. The requirement that centralized sewerage be provided for higher density uses has a clear basis in public health and safety. However, the existence of nearby public sewer lines should not in and of itself dictate that higher densities be permitted. All the other factors discussed in this plan -- natural resource protection, traffic impacts, compatibility with surrounding land uses, providing for a range of housing types -- must be given equal consideration with sewerage facilities in determining appropriate densities.

The township must, under state law, prepare a Sewage Facilities Plan (Act 537 Plan) which specifies the overall plan for sewerage facilities: which areas are to be served by public sewers, which areas are to be served by on-site systems, and the proposed phasing of the development of public sewer systems. This plan should reflect the land use policies of this Comprehensive Plan so that they do not work at cross purposes.

The Comprehensive Plan recommends the following sewerage facilities policies:

1. Do not plan for public sewerage in areas designated for low density development. Public sewerage in these areas will create pressure for higher density development. The low-density development patterns

recommended are based upon the natural features of the areas and upon the need for accommodating a certain level of growth.

2. Public sewerage should be extended to portions of the township which are already developed and which have problems with on-lot septic systems. This includes the area between the Route 202 bypass and Edison-Furlong Road (the Pebble Woods area), the Lynbrook/Willowbrook area; the Pebble Ridge neighborhood between Lower State Road and Almshouse Road at the western edge of the township; and the neighborhood at the eastern corner of the township lying off of Sugar Bottom Road.

**Encourage the Maintenance of On-site Septic Systems** • The widespread use of on-site septic systems can result in health and safety problems if such systems are not adequately maintained. Possible roles for the township are: to help educate residents about the need for regular maintenance and provision for the disposal of septage (residue from on-lot septic systems) at proposed sewage treatment facilities.

**Undertake a Comprehensive Groundwater Study** • The water supply plan is based on the assumption that the groundwater supplies will be adequate to meet future population growth. This assumption, in turn, is based upon the historical yields of the major geological formations underlying the township. There is some uncertainty about the long-term reliability of this supply, especially with the reduction in aquifer recharge which will result with the construction of centralized sewage treatment facilities. A comprehensive groundwater supply study should be done.

**Continue to Meet Township Facility and Staff Needs** • The township must continue to keep pace with the added pressures of growth by planning for the expansion of township facilities, personnel and police. The present location of the township headquarters is well-suited to township needs because of its central location.

## Relationship to Surrounding Municipalities and the County

Many of the forces which affect the quality of life in Doylestown Township are unaffected by municipal boundary lines -- things like water quality in the Neshaminy, traffic on the highways, the balance of land uses and activities are dependent in part of what happens in the surrounding townships.

The townships development philosophy is constructed in part of the existence of Doylestown and New Britain Boroughs as central areas where more intense commercial development can occur. The plan talks about the functional relationship between the township's lower density residential areas and the commercial and service cores provided by the boroughs.

The township's plans also relate compatibly with those of the surrounding townships.

Buckingham Township lies across Swamp Road from Doylestown Township. Its planning and zoning policies call for residential units on one-acre lots along much of this border. The area opposite the Fonthill Museum is zoned for village residential uses with a minimum lot size of 20,000 square feet. The land lying near the intersection of Route 611 and 313 at Cross Keys is zoned for commercial use, as is the land at the intersection of Routes 263 and 313. All of these uses are compatible with the planning proposed in Doylestown Township along this border.

Plumstead Township lies north of Route 611 along Route 313. Along the Doylestown Township border the Plumstead zoning policies call for commercial and industrial development around the Cross Keys intersection and north on Route 313 to Saw Mill Road, low density residential development above Saw Mill Road, and commercial development at the intersection of Route 313 and Ferry Road at Fountainville.

New Britain Township lies to the north of Doylestown. Land uses along Ferry Road are low-density residential uses, compatible with the concept of low density development recommended for Doylestown.

Warrington Township lies along the western border of Doylestown, with Bristol Road forming the major boundary line. The residential development along this shared boundary are compatible with and similar to the uses recommended for Doylestown Township. Warrington is in the process of updating its comprehensive plan.

Warwick Township lies to the south of the township and is separated from Doylestown by the Neshaminy Creek. Zoning along this boundary calls for lots of a minimum of two acres each, the same as is suggested for this area along the Neshaminy in Doylestown Township. Warwick is beginning a complete review of its land use policies.

Bucks County's Comprehensive Plan was updated in 1977 and is in the process of being revised. However, the land use plan presented for Doylestown Township is consistent with current county policy. The 1977 Plan calls for low-intensity development along the Neshaminy stream valley, with 60 to 80 percent open space preservation. The remainder of the township is recommended for development, with low densities along the Pine Run reservoir area.

The township's land use plan and policies are compatible with those of surrounding areas as well as those of the county. Because the county and several neighboring townships are updating their land use policies, the township will have to keep up to date on changes in surrounding communities.

## The Next Steps

What happens after this Plan is completed? How can it be used to help achieve the vision of the future community which it describes?

The plan is constructed so that each goal relates to and is consistent with the others. Natural features characteristics help to determine land use goals. Past development patterns influence future development goals. Expansion of residential and non-residential uses are planned to be consistent with neighboring municipalities and with each other. The expansion of parks and recreation facilities and of other community facilities are planned to be consistent with future population growth and future needs of residents. A street system is recommended which will serve the township development and which will help to meet regional transportation needs.

**Short Term Implementation** • First, the most powerful tools of land use control available to the township – its zoning ordinance and subdivision and land development ordinance – must be brought into compliance with the plan. Because the zoning ordinance is being updated concurrently with the plan, the general direction set by both documents is the same. There are many recommendations contained in this plan which can be implemented by adopting them as part of township ordinances.

Second, the special reports and studies being undertaken must be incorporated into the plan. The Park and Open Space Plan, the Comprehensive Plan for Water and Wastewater Facilities, and the Transportation Study must be completed and their recommendations adopted as supplements to this comprehensive plan. The township must engage in discussions which will ensure that these separate plans provide a consistent view of the township's future.

Third, the plan should be used when evaluating land use decisions. Zoning changes, proposed amendments to ordinances, recommendations for dedication of open space, etc. should be viewed within the context of the Plan's guidelines.

Fourth, the township's budget process should take into account planning goals. A capital program and budget should reflect needed expenditures for new facilities, expansion of present facilities, and a commitment to on-going planning.

**Long-Term Implementation** • Several long-term goals have been expressed in this plan – goals which will not be realized in the immediate future but serve as focal points in the long-range development of the township. These include: the construction of the Route 202 bypass, the preservation of the Neshaminy Creek Valley, and the full development of a central park facility.

The implementation of long-term goals will be dependent on the township's ability to keep sight of those goals and take steps now to

make them a reality. This requires that each new development be measured against these long-term goals. Land must be set aside as part of the development process now so that future projects can be implemented.



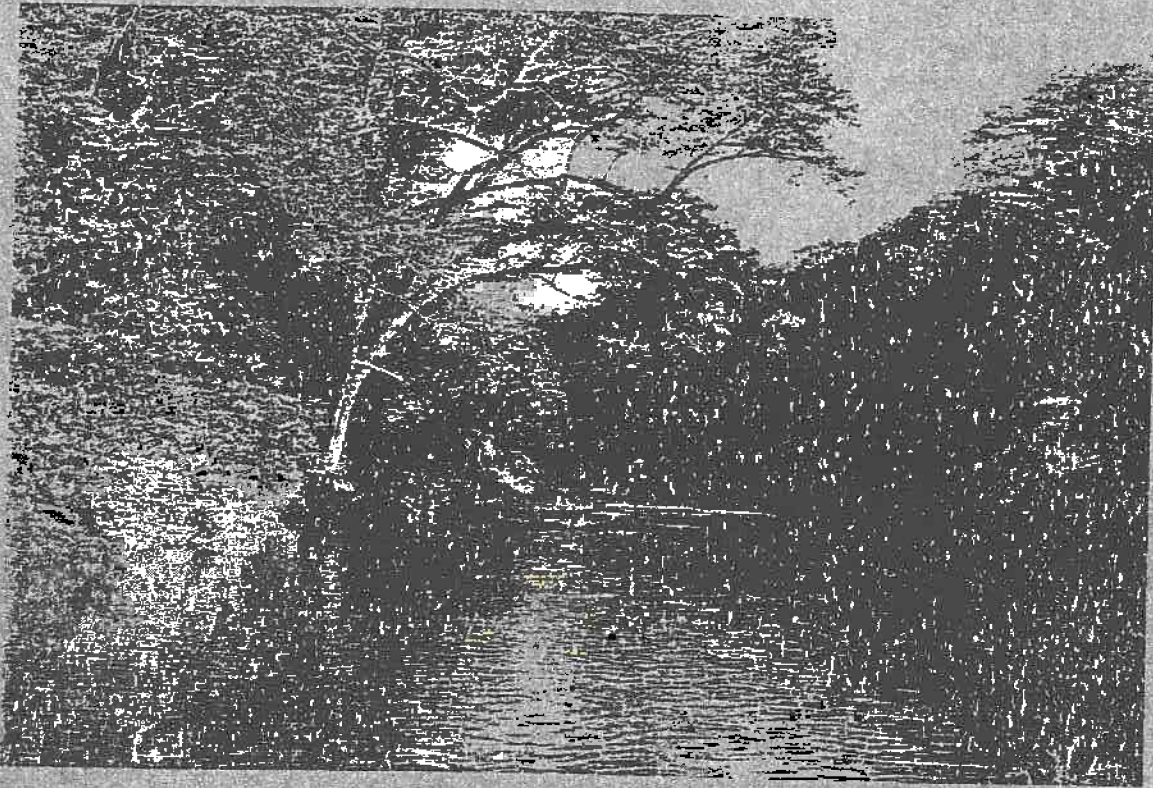
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1. Doylestown Township Open Space Plan, June, 1998
2. Neshaminy Creek Watershed Rivers Conservation Plan, 1997
3. The Gateway Study, November, 2000 (study of North Main Street)
4. The Gateway/Corridor Study of October, 2005 (study of S. Easton Road)
5. Design Requirements and Construction Standards for Doylestown Township Pedestrian and Bike Facilities, April 1996
6. Edison Village Study
7. Route 611 Corridor Study, 1992
8. The Doylestown Township Park, Recreation and Open Space Plan, 1992
9. The Doylestown Township Act 537 Sewage Facilities Plan, 1999, as amended
10. Doylestown Community Park, Recreation and Open Space Plan 2007
11. Act 167 Neshaminy Creek Watershed Stormwater Management Plan

**NOTE:** *Full text of the enclosed documents and/or additional maps are available at the Doylestown Township Administration Building*

Doylestown Township

# Open Space Plan



Doylestown Township  
Bucks County, Pennsylvania

June, 1998

**RESOLUTION #854**

**WHEREAS**, the Board of Supervisors of the Township of Doylestown recognizes that the Township contains open space and natural areas that contribute to the quality of life and economic health of our community which are worthy of preservation; and

**WHEREAS**, the Bucks County Commissioners have established the Bucks County Open Space Program through a referendum overwhelmingly passed by Bucks County Voters on May 20, 1997, the purposes of which is "To develop a practical plan to protect in perpetuity those natural resource areas and farmlands deemed essential to preserve the unique character of Bucks County"; and

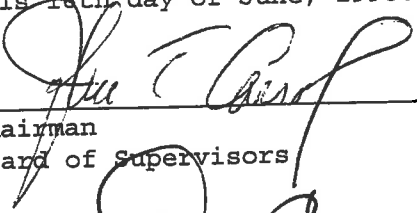
**WHEREAS**, the Bucks County Open Space Program provides an allocation of funding for protection and development of open space resources by municipalities provided that the municipality first prepares an approved Municipal Open Space Plan; and

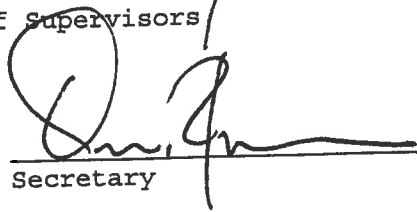
**WHEREAS**, the Township of Doylestown wishes to participate in protection of Bucks County's open space and natural resources through participation in the Bucks County Open Space Program.

**NOW, THEREFORE**, the Board of Supervisors of the Township of Doylestown, Bucks County, Pennsylvania, hereby resolves that the Doylestown Township Open Space Plan, dated June, 1998, prepared in compliance with the Municipal Open Space Guidelines dated October 28, 1997 and distributed by the Bucks County Commissioners, has been discussed at a public meeting and is hereby adopted in its entirety in the form attached hereto, as the official Open Space Plan of the Township of Doylestown; and

**BE IT FURTHER RESOLVED** that the Township Secretary shall cause a certified copy of this Resolution to be attached to and made a part of said Open Space Plan, and furthermore, that the Township of Doylestown intends to take actions as appropriate to implement the goals of the Open Space Plan, in support of which a certified copy of this Resolution and the attached Open Space Plan shall be forwarded to the Bucks County Commissioners.

This Resolution has been duly prepared and adopted by the Board of Supervisors of Doylestown Township, Bucks County, Pennsylvania in a public meeting held this 16th day of June, 1998.

  
\_\_\_\_\_  
Chairman  
Board of Supervisors

Attest:   
\_\_\_\_\_  
Secretary

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*The Open Space Plan was prepared by the  
Doylestown Township Open Space Committee*

John T. Carson, Jr. - Representing the Board of Supervisors  
Thomas Kelso - Representing the Planning Commission  
Donald A. Borden - Representing the Park and Recreation Commission  
Cindy Smarsh, SEO - Representing the Environmental Advisory Council  
Judy Stern Goldstein - Representing the Environmental Advisory Council  
Dr. Joshua Feldstein - Representing the Agricultural Security Area Advisory  
Council

The Open Space Committee recommended approval of the Open Space Plan  
at its meeting on June 1, 1998

# Doylestown Township Open Space Plan

## *INTRODUCTION AND PROCESS*

The Doylestown Township open space plan has been prepared in order to set goals for open space preservation and to establish a means to implement the goals.

The Township Open Space Committee was appointed in 1996 to undertake a study of open space and to prepare an open space plan. The Committee was appointed by the Board of Supervisors and was composed of representatives of the following Township boards and commissions:

- Planning Commission
- Environmental Advisory Council
- Park and Recreation Commission
- Agricultural Security District Committee
- Board of Supervisors

The Committee met on a monthly basis. In order to understand the open space resources in the Township, the Committee and Township staff worked to create a Geographic Information System and computerized mapping program for the Township. The Committee was closely involved with the system and guided the staff in creating a data base useful for open space purposes. One of the Committee members volunteered his technical assistance and his office resources to move the project forward and train township staff members.

The Open Space Committee conducted investigations into existing open space, resources, areas vulnerable to development, and opportunities for open space preservation.

The plan outlines the developmental history of the township in recent years, especially as it relates to disappearing open spaces, the open spaces permanently preserved, the valuable resources and open spaces that are vulnerable to development, a priority list of open space to be protected, and a strategy for implementation. As part of the background information, the plan reviews the steps already taken by the township to preserve open space.

# Community Background

## Land Use Patterns

Doylestown Township occupies about 15.5 square miles in the center of Bucks County. It has been a farming community historically, but has experienced rapid residential growth between 1970 and the present. It surrounds on three sides the Borough of Doylestown and also partially surrounds the Borough of New Britain.

In recent years, the rapid suburban residential development that has spread across central Bucks County has had a major impact on farm fields and open spaces in Doylestown Township.

The most recent figures on land uses in the Township were compiled in 1990 by the Bucks County Planning Commission.

### 1990 Land Use Patterns - Doylestown Township

<u>Land Use</u>	<u>Percent of Total Land Area</u>
Single family residential	32%
Agriculture	17%
Rural residential	16%
Vacant	10%
Government and Institutions	8%
Transportation and Utilities	7%
Parks	6%
Nonresidential	4%

Source: Bucks County Planning Commission, 1994

Since this chart was prepared, several changes have occurred. More vacant, agricultural and rural residential land has been converted to single family or multifamily development. There has been an increase in nonresidential development, along the major roadways. Additional land has been converted from agricultural and nursery use into single family residential development and into parkland.

## Factors Affecting Land Use

The land use and development patterns in the Township are affected by several forces.

1. Doylestown Borough, the County seat, is almost completely surrounded by the Township. Its higher density development pattern and activity centers influence the Township land use patterns. Certain

community centers, such as schools, the YMCA, and retail areas spill over into the Township and generate activity within the Township.

2. The Routes 202 and 611 bypasses cut through the Township and separate neighborhoods and activity centers from other portions of the Township, affecting the ability to provide linkages between open spaces.

3. Bucks County owns land along the Pine Run Creek and a reservoir in the northern section of the Township. The County owns the floodplain along the Neshaminy Creek in the southern part of the Township.

4. There are large areas of County-owned land at Neshaminy Manor, some of which has been made available for local recreational use.

5. The Neshaminy Creek runs through the Township. Its broad floodplain has affected development patterns, requiring either large lots or the dedication of the floodplain area as open space.

6. The most significant agricultural acreage in the Township belongs to Delaware Valley College which owns more than 500 acres. Of this total, 233 acres have been preserved through the Bucks County Agricultural Land Preservation program and are permanently preserved as farmland. The total land holdings of the College have been diminished over the years as land was sold or donated for various public purposes, including the Township's Central Park and a sewage treatment plant.

7. The Burpee Seed Company and Burpee family at one time owned land in significant amounts, but land has been donated or sold for other uses, so that only the 60-acre Fordhook Farm remains.

#### Population and growth projections

The Township population is estimated at 16,800 persons as of 1997, when a special census was conducted. This reflects an increase of 2,290 people since the 1990 U.S. Census was taken. This number appears to be reasonably consistent with projections for the year 2000.

<u>1990 Population</u>	<u>1997 Population</u>	<u>Year 2000 projected Pop.</u>
14,510 people	16,747 people	18,420 - 19,330 people

The population added to the Township since 1990 has resulted from new development, most of which has occurred in the central part of the Township along Wells Road and Lower State Roads, and in the northern section of the Township along between Ferry Road and the Route 611 bypass.

## Policies and Methods Used to Preserve Open Space and Protect Resources

The Township has had plans and ordinances geared to preserving environmental features and open space since the 1980s.

- **Natural resource protection standards** - Resource protection standards are included within the Township zoning ordinance. These standards require protection of wetlands, floodplains, forests, steep slopes, and watercourses.
- **Cluster option in zoning ordinance** - The zoning ordinance contains several cluster options for development. The options available allow the developer to set aside 40 - 50 percent of the land to protect natural resource areas or to provide open space for scenic, recreational, or other purposes.
- **Preservation of important land through purchase** - The Township acquired 108 acres in 1992 for its Central Park. This action protected important land in the center of the Township and preserved wetlands, woods, and farmland. Since acquisition, the park has been developed for active and passive recreation.
- **Zoning to enhance existing parkland** - The Township has used its zoning to enhance the existing parkland in the Township. By creating a new district adjacent to the Township's Central Park, the Township is able to add 24 acres to the township park facilities through zoning requirements, with plans to connect these parcels by walking trails.
- **Concern about environmental quality and protection and formation of the Environmental Advisory Council** - The Township formed an Environmental Advisory Council to assist the township in a variety of environmental causes. In addition to reviewing proposed development plans submitted by developers, the Council has initiated a yearly stream clean-up of the Neshaminy Creek and its tributaries and has directed the Neshaminy River Conservation Plan.
- **Neshaminy River Conservation Plan** - The Township has prepared a River Conservation Plan for the Neshaminy Creek. As the result of the first phase of this project, the Neshaminy and its tributaries (Pine Run, Cook's Run and Country Club Creek) were placed on the Pennsylvania State Registry for River Conservation. The Township will be constructing signs and paths at Castle Valley as the result of this plan. Future activities include the installation of informational signs and



kiosks and the building of a section of the trail along the Neshaminy in township-owned open space. The second phase of the River Conservation Plan has been started, with a goal protecting the water quality in the creek and the extensive natural resources along its banks through public education and recreational use.

- **Preservation of a Neshaminy Creek and Greenway** - The Township has made an effort to preserve the Neshaminy greenway through zoning and through conservation easements. The cluster zoning options have been used along the Neshaminy Creek, and more than 60 acres have been preserved and dedicated to the Township along the Neshaminy. This land is used to provide recreation and to protect the stream corridor characteristics. The Township routinely refers to the Bucks County Link Park concept in its assessment of proposed developments. The Township has asked for specific recommendations and guidance from the County on the width and location of the proposed link park.
- **Comprehensive Plan, Park and Recreation Plan, and special studies** - The Township has enacted several plans which emphasize the importance of natural resource protection and open space preservation. The Neshaminy Creek has been a high priority, along with provision of adequate land for parks and recreation. The Park Board conducted an analysis of open lands for use in considering future preservation of open space.
- **Edison Village and Neshaminy Creek access** - The Township restored a property along the Neshaminy Creek at Edison Village and created a waterfront park, known as Bridge Point Park. This park now provides access to the creek near the center of the Township, in the Village of Edison Historic District.
- **Bike and Hike Path Planning and Implementation** - The Township has been a leader in a cooperative effort to plan and build a Doylestown area bike and hike path. The Plan, which has been adopted as an amendment to the Township Comprehensive Plan, shows the connection of various neighborhoods, parks, open spaces, and community facilities by a bike/hike path.

The Township has also cooperated with the Central Bucks Chamber of Commerce Recreational Path Committee, which is encouraging municipalities along Route 202 to plan for a continuous bike path between Doylestown and New Hope. The Township has worked with developers to install path segments that would support the Recreational Path concept.

## Inventory of Existing Protected Lands

Land that has been preserved permanently in the Township will serve as a basis for future open space preservation. These preserved areas are shown on Map #1.

OWNERSHIP	NAME	SIZE	DESCRIPTION
Doylestown Township	Central Park	108 acres	Recreation area, natural resource protection, farmland
Doylestown Township	Bridge Point Park	2.25 acres	Neshaminy Creek access, sitting areas, natural resource protection, historic preservation
Doylestown Township	Sauerman Park	13 acres	Recreation area, woods and pond
Doylestown Township	Neamand Park	83.9 acres	Passive recreation, floodplain protection, resource protection along the Neshaminy Creek.
Doylestown Township	Victoria Court Open Space	8.7 acres	Open land adjacent to Cook's Run
Doylestown Township	Sandy Ridge Road Open Space	23.2 acres	Passive recreation, bike path
Delaware Valley College	Farmland preserved by Bucks County Farmland Preservation Program	233 acres	farmland
Bucks County	Pine Run Reservoir area	382.5 acres	Resource protection
Bucks County	Fonthill and Tile Works	72.76 acres	Historic area and grounds, woods
Bucks County	Neshaminy floodplain	223.5 acres	Flood control/open space
Heritage Conservancy	Hart's Woods	19.5 acres	Woodland
Honorable E. Ludwig - Conservation easement to Doylestown Township	Farm	23.73 acres	Farmland preservation
Lands restricted as part of Developments:	The Greens Teversall Chestnut Grove Westwyk Old Colonial Greene Villages of Doylestown Charing Cross Stonington	20.99 acres 19.93 acres 13.56 acres 33.51 acres 30.89 acres 7.5 acres 48.71 acres 4.0 acres	Open space and recreation areas to serve the individual developments
<b>TOTAL</b>		<b>1373.1 acres</b>	

## Inventory of Resources

The Township contains numerous other open space and community resources that enhance and support open space efforts. In addition to the permanently protected resources, there are many other resources to be considered.

### 1. Historic and Cultural Resources

Sites that are listed in the National Register of Historic Sites are noted. These places deserve special attention because of their national significance and contribution to the character of Doylestown Township.

**Fordhook Farm** - 60-acre site with national significance in the development of the Burpee Seed Company; now operates as a bed and breakfast.  
*National Register of Historic Places*

**Tabor Home** - large institutional buildings on Easton Road, with vacant land across the road. Forms a gateway to Doylestown. *National Register of Historic Places*

**Oscar Hammerstein House** - Former residence of Oscar Hammerstein, lyricist; operates as a bed and breakfast. *National Register of Historic Places*

**Fonthill** - Home of Henry Mercer; *National Historic Landmark*

**Mercer Tileworks** - Site of Mercer tile making; museum and display of tile making technology. *National Historic Landmark*

**Delaware Valley College** - buildings and grounds have historic and open space value.

**Pine Tree Farm** - Historic house on Lower State Road with 15 acres surrounding it; operates as a bed and breakfast

**Aldie Mansion** - House on 5 acres; once the home of one of the Mercers.

**Doylestown Country Club** - 110 acres of open space used as a private golf course

**Farms along Almshouse Road** - Featherbed Hill

**Castle Valley and Mill** - Lands along the Neshaminy Creek, historic location of a mill; former "castle" constructed here

**Central Bucks YMCA** - 15 acres of land with buildings for indoor and outdoor recreation.

**Hart's Woods** - 19 acres of woodlands adjacent to Township open space at Central Park; owned by the Heritage Conservancy.

**Edison Village** - Designated as an Historic District by the Pennsylvania Historical and Museum Commission; eligible for the National Register of Historic Places - includes the Bridge Point Park area.

The historic resources that have been identified by the Township are shown on a map, along with a list of the sites that were adopted as part of the Township Comprehensive Plan as significant resources.

## Historic Buildings and Sites

NAME and Map Number	LOCATION	Tax Map Parcel Number	ACRES	USE	SIGNIFICANCE
1. Residence	360 Old Dublin Pike	9-48-23	9	Residence	c. 1811 Eligible for Historic Register
2. Aldie	Old Dublin Pike	9-48-23	5	Office	Aldie Mansion
3. Moravian Tile Works	525 Swamp Road	9-9-49	65	Tile Works	National Historic Landmark
4. Fonthill	525 Swamp Road	9-9-47	65	Museum	National Historic Landmark
5. Residence	1000 Sandy Ridge Road	9-4-70	2.77	Residence	1840 Stone Vernacular House - Possibly National Register eligible
6. Residence	705 Limekiln Road	9-4-63	5.68	Residence	Good example of 19th century stone vernacular house c. 1830
7. Residence	651 Shady Retreat Rd.	9-9-39		Residence	1880 Victorian Farmstead
8. Hammerstein House	70 East Road	9-9-89-1	3	Bed and Breakfast	Hammerstein residence c. 1860 National Register of Historic Places
9. Fordhook Farm	New Britain Road	9-7-51	57.2	Bed and breakfast	National Register of Historic Places c.1772
10. "Pastimes" George Hart House	2250 S. Main Street	9-9-66-1	24	Residence and Museum use	c. 1700 House and farm building Possibly oldest house in Township - was home of Jeremiah Langhorne
11. Residence on Easton Road at Elfman Road	39 Elfman Road	9-12-14	4	Residence	c. 1900 Eligible for National Register Prominent location - Eclectic Mediterranean and Colonial
11. Concrete Water Tank	51 Elfman Road	9-12-20-1	0.5	Storage	c. 1920 Local landmark
12. Tabor Home	601 New Britain Road	9-9-67	32	Institution	c. 1880 National Register of Historic Places

NAME and Map Number	LOCATION	Tax Map Parcel Number	ACRES	USE	SIGNIFICANCE
13. Pine Tree Farm	2155 Lower State Road	9-7-137-1	16.5	Bed and Breakfast	Good example of colonial revival architecture c. 1730
14. Delaware Valley College	Route 202	9-7-42		Administration Building	Colonial revival architecture c. 1925
14. Delaware Valley College	Route 202	9-7-42		Classroom building	Neoclassical revival architecture c. 1929
14. Delaware Valley College	Route 202	9-7-42		Administration building	Colonial revival architecture c. 1925
14. Delaware Valley College	Route 202	9-7-42		Residence	Shewell Homestead c. 1729
14. Delaware Valley College	Route 202	9-7-42		Residence	"Wayside Inn" 1751 - Served as the polling place and as a carriage stop; noted for large, old sycamore tree
14. Delaware Valley College	Route 202	9-7-42		College building	Colonial revival architecture c. 1917
14. Delaware Valley College	Route 202	9-7-42		College building	Original part of college property used during the Revolution - Print, "The Wilmington Almanack" by James Adams, c. 1770
15. Residence	161 Keeley Avenue	9-1-1		Residence	c. 1790 Good example of early farmstead, possibly eligible for National Register
16. Castle Valley Mill	1730 Lower State Road	9-7-23	15.5	Residence	Mill and Mill owner's residence c. 1830
17. Log Cabin	1623 Lower State Road	9-7-98	1	Residence	Early log cabin Local landmark
18. Neshaminy Manor	Rt. 611 and Almshouse Road	9-14-10	132	Institution	Rodman House c. 1773 Revolutionary War ties
19. Inn at Blueberry Hill	1715 Easton Road	9-14-37	3	Restaurant	c. 1855 Eligible for National Register

NAME and Map Number	LOCATION	Tax Map Parcel Number	ACRES	USE	SIGNIFICANCE
20. Offices at Easton Road and Duane Road	1795 Easton Road	9-19-28	9.9	Offices	1857 Vernacular brick construction
21. Gawronski House	112 Edison-Furlong Road	9-14-16	4.7	Residence	c. 1810 Stone house and outbuildings
22. Bridge Point School	60 Quarry Road	9-17-26	0.5	Residence	In Historic district - Former school
22. Village of Edison Historic District	Quarry Road, Edison Road			Residences Commercial	Certified historic district
23. Furlong Church	760 Old York Road	1.0	9-29-7	Church	c. 1886 Victorian frame church
24. Dreger Residence	1900 Lower State Road	9-7-41	2.4	House on farm	Farmhouse and storehouse c. 1759

## 2. Scenic Resources - Scenic Roads and Scenic Vistas

The Township Open Space Committee has identified the following scenic resources. These are based on visual assessment of the Township.

Almshouse Road - View of Delaware Valley College, Neshaminy Creek

Pebble Hill Road - Farms and open lands. The expanse of open land in this area is in contrast to much of the developed areas. There are views of open fields and of the Neshaminy Valley as land slopes down to the Creek.

Neshaminy Stream corridor - The Neshaminy Creek, as seen from along the creek and from the road, is an important view.

Pine Run reservoir - This impoundment and the surrounding natural area provides a scenic vista from above and below the reservoir.

Ferry Road - Driving along Ferry Road there is an impressive view of valley. Roads leading up to Ferry Road, such as Chapman and Rickerts Roads, provide good views of the valley and surrounding farms. This is the area described as a patchwork quilt of small farms that gives distinctive character to the northern section of the township.

### 3. Natural Features

The Natural Features of the Township are described in the Township's Comprehensive Plan. Information on important natural features has been used in forming planning and preservation policies. Information on critical natural features is contained in the appendix to the report. These goals, policies, and background facts were adopted as part of the township's Comprehensive Plan.



## Open Space Vision and Objectives

The Township's Open Space Vision is to protect lands throughout the township that have importance to the community because of their environmental value, scenic value, farmland value, or recreational value. The Township has set the following goals for the preservation of open space.

1. **Resource Protection** - Continue to protect important natural and environmental resources: floodplains, steep slopes, wetlands, forests, streams.
2. **Greenways** - Preserve area along the Neshaminy Creek as a low density area with greenway preserved along the creek edge in order to protect scenic views, floodplains, woods, and wetlands and to provide for recreational use.
3. **Farmland** - Preserve farmland associated with Delaware Valley College and farmland along Pebble Hill Road. Preserve farmland that is comprised of many small farm fields in the northern section of the Township. Preservation of agricultural areas is important to protect the scenic character of the township, to preserve open land for environmental purposes (groundwater recharge, reduction of impervious surfaces and associated runoff and erosion), and to protect the agricultural heritage established by Delaware Valley College.
4. **Historic/cultural significance** - Preserve areas of open space that are significant to the cultural heritage of the Township.
5. **Recreational value** - Consider the recreational value of open space.
6. **Distribution of Open space resources** - Preserve open space throughout the township.
7. **Scenic value** - Protect areas of scenic value, especially those visible from public roads.
8. **Links** - Acquire open space that will complete links of permanently preserved recreation land, open space, and cultural resources and open space that is adjacent to preserve lands.
9. **Support for overall land use planning** - Preserve land that will support and reinforce land use and planning goals for the township.
10. **Peoples' choice** - Preserve land that is important to the community for its scenic, open space, environmental, or other values -- land that has an importance to the community as a whole.

11. **Workable and affordable implementation** - Work with land owners in pursuing the best method of preservation for the Township and the land owner, taking into account available funding, landowner needs, and Township goals.

## Analysis of Unprotected Resources

The following resources are considered to be unprotected but are very important to the long-term goals of open space preservation in the Township.

### Delaware Valley College - Farm 7

193 acres

Farmland owned by the college but not protected.

Significance: environmental protection of woods, slopes,  
farmfields  
scenic values,  
cultural significance (as part of DVC)  
potential linkages to other preserved open space.

### Fordhook Farm

60.6 acres

Land owned by the Burpee family

Significance: important to the history of agriculture in the U.S.  
centrally located in Township  
farmland  
environmental protection  
potential linkages to other preserved open space  
National Register of Historic Places

### Neshaminy Creek Valley

Land owned by numerous landowners

Significance: environmental protection: floodplains, wetlands,  
slopes, forests, riparian buffers  
Scenic value  
Recreational opportunities

### Pebble Hill Road Farming Area

Land owned by numerous landowners

Significance: environmental protection: floodplains, wetlands,  
slopes, forests, riparian buffers  
Exceptional scenic value  
Farmland - many properties are in the agricultural  
security district

### Patchwork of Farms and Fields in northern end of the Township

Land owned by numerous landowners

Significance: Scenic value  
Farmland - among the last remaining farmland  
Open space in an area that is developing  
County-owned property in area

Pine Run Creek runs through here  
Agricultural Security area properties

Other Stream Corridors - Cooks Run and Pine Run

Land owned by numerous landowners

Significance: environmental protection: floodplains, wetlands,  
slopes, forests, riparian buffers  
Scenic value  
Recreational opportunities  
Linkages to other open space - Pine Run Reservoir,  
New Britain Borough's Covered Bridge Park

Tabor Home Properties

Land owned by Tabor Children's Services

Significance: Scenic value - gateway to Doylestown  
Historic buildings - National Register of Historic  
Places  
Forms a green belt around Doylestown Borough and  
a respite from intense commercial activity both  
above and below it on Easton Road  
Environmental significance: slopes, wetlands,  
woods

Holiday House Pet Resort

49 acres in private ownership

Significance: Environmental features: Cooks Run, floodplains,  
woods.  
Large open area  
Proximity to farmed lands and preserved open space  
at Sandy Ridge Road.  
Potential for links from Sandy Ridge to Stonington  
open space.

Eastburn Property

35 acres in private ownership

Significance: Environmental features: woods, a very old  
and significant sycamore tree.  
Only open area in the southeastern sector of  
the Township.

## Open Space Priorities

Open Space Priorities are established by determining which of the unprotected resources best meet township goals. The chart on the following page lists the open space goals and the specific unprotected resources. The properties which best meet goals become highest priorities and the subject of our short-term implementation efforts.

The major types of open space to be preserved meet multiple objectives, as noted on the chart. All of the following types of open space are listed and evaluated.

Scenic and Environmental Resources - Land that contains important environmental resources, such as floodplains, stream valleys, scenic views, wetlands, and woods.

Farmland - Land that has been used for farming

Historic/cultural resources - Land that preserves important historic sites; land that enhances existing historic and cultural resources.

Recreation land - Land that can be used for recreational purposes and land that supports or supplements or enhances existing recreational lands

## Potential Open Space Linkages

Preservation of land listed on the chart provides many opportunities for linkages among open space areas and between communities. Among the most important connections are:

- Connection of open spaces and park facilities with comprehensive township-wide bike/hike path system, as shown on the Bike and Hike Plan Map.
- Connect parkland and open space by acquiring intervening pieces of land to form connected open space - Hart's Woods, farms along Pebble Hill Road, connections between Pine Run and New Britain Borough park
- Connections of open space along stream corridors - Neshaminy, Cooks Run, Pine Run.
- Adjoining Boroughs - Inquiries have been made of the two adjoining boroughs - Doylestown and New Britain - to try to determine their plans for open space. Doylestown Borough has not yet prepared a plan. New Britain Borough is working on a plan. Although they have not selected priorities, New Britain is interested in protecting the Covered Bridge Park, which adjoins Doylestown Township and the County's Pine Run reservoir lands. This park would continue the Pine Run greenway that is part of the township's open space plan.

## Preservation Methods for Open Space

The Township intends to use the following methods to meet its goals. Specific implementation techniques are linked to specific open space goals.

1. Resource Protection - Continue to protect important natural and environmental resources: floodplains, steep slopes, wetlands, forests, waterbodies.

### *Implementation Techniques*

- Ordinances to protect resources
- Purchase conservation easements
- Zoning options
- Donations
- Transfer of development rights
- Fee simple purchase

2. Greenways - Preserve area along the Neshaminy Creek, Pine Run, and Cook's Creek, as a low density area with a greenway preserved along the creek edge in order to protect scenic views, floodplains, woods, and wetlands and to provide for recreational use.

### *Implementation Techniques*

- Ordinances to protect riparian buffers
- Purchase conservation easements/development rights
- Zoning options - set aside as part of development process
- Donations
- Fee simple purchase

3. Farmland - Preserve farmland associated with Delaware Valley College and farmland along Pebble Hill Road. Preserve farmland that is comprised of many small farm fields in the northern section of the Township. Preservation of agricultural areas is important to protect the scenic character of the township, to preserve open land for environmental purposes, and to protect the agricultural heritage established by Delaware Valley College.

### *Implementation Techniques*

- County farmland preservation program, - encourage owners to apply
- Township purchase of farm easements
- Township cooperation with County farmland preservation program
- Donations
- Transfer of development rights

4. Historic/cultural significance - Preserve areas of open space that are significant to the cultural heritage of the Township.

*Implementation Techniques*

Fee simple purchase  
Purchase conservation easements/development rights  
Zoning options  
Donations  
Limited development: preserve buildings through sale with restrictions, preserve balance of land.

5. Recreational value - Consider the recreational value of lands preserved.

*Implementation Techniques*

Fee simple purchase  
Purchase conservation easements for lands to be used for passive recreation such as trails  
Zoning options  
Donations

6. Distribution of Open space resources - Provide for open space throughout the township.

*Implementation Techniques*

Select lands that fulfill this goal -- preserve through any available method.

7. Scenic value - Protect areas of scenic value, especially those visible from public roads.

*Implementation Techniques*

Select lands that fulfill this goal -- preserve through any available method.

8. Links - Acquire open space that will complete links of permanently preserved recreation land, open space, and cultural resources and open space that is adjacent to preserve lands so that these areas will be connected and contiguous.

*Implementation Techniques*

Select lands that fulfill this goal -- preserve through any available method.

9. Support for overall land use planning - Preserve land that will support and reinforce land use and planning goals for the township.



*Implementation Techniques*

Review current ordinance and planning documents to see that they support open space goals

Select lands that fulfill this goal -- preserve through any available method.

10. Peoples' choice - Preserve land that is important to the community for its scenic, open space, environmental, or other values.

*Implementation Techniques*

Select lands that fulfill this goal -- preserve through any available method.

## Polices and Methods to Protect Open Space other than Acquisition

Many of the implementation techniques listed above do not involve acquisition by the Township. The specific ways in which the Township proposes to use these techniques is described below.

1. Resource protection requirements - continue to implement and refine ordinance requirements.
2. Use of cluster option - encourage in areas where preservation is important. Indicate on Township preservation map where preservation should occur, even if it is part of the development process.
3. Encourage farmers interested in preserving farmland to apply to the Bucks County Agricultural Preservation Program.
4. Township should work with Bucks County Farmland Preservation Program on preserving eligible farms.
5. Discuss conservation options with landowners - donations, like-kind exchange, other methods that involve tax savings. Make sure that all landowners know that there is an interest in preservation and that they can approach to Township when they are ready to sell their land.
6. Consider a transfer of development rights program where the eligible sending areas would be those properties which the Township wishes to preserve.

## Recommendations for Action - Steps Needed to Protect Open Space Resources Implementation Methods

### **The Choice: Action Now or a Lost Opportunity**

The township has planned to accommodate growth and development. The steady pace of development can be expected to continue, due to the township's location in a rapidly growth area, the ownership of land by developers, and the likely development that will flow from plans already approved. The township recognizes that development costs money and that preservation is a better choice not only environmentally but financially, even if money has to be spent in the short term.

The township recognizes that remaining open space resources are vulnerable to development, and that farms may disappear completely and that the prospect of completing open space preservation along stream corridors may be foreclosed unless action is taken now.

The township's open space priorities are described on the following pages.

**1. Preserve the Neshaminy Creek through ordinance options: resource restrictions, cluster options, transfer of development rights. Mandatory preservation of Neshaminy floodplain rather than lotting it out.**

- Goals to be Achieved
  - Preservation of natural features and environmentally sensitive lands associated with stream corridors; protection of water quality and stream flows.
  - Provision of land that can be used for recreation
  - Assistance in the implementation of Bucks County Park Plan (1986) recommendation to establish a Link Park along the Neshaminy Creek.
- Methods to be used - Easement Purchase or Donation; Dedicated Open Space; Public Lands

The land along the Neshaminy is owned by many landowners, with many types of zoning and development characteristics. Some land along the creek has been or will be dedicated to the township as part of the development process. Other lands are in private ownership and need to be looked at for the purpose of securing easements for conservation and possibly recreation.

- The township should identify lands that have been preserved and lands that need to be preserved along the Neshaminy.
- The township should determine a width along the banks of the creek that should be the subject of conservation easements so that property owners can be approached.
- Typical conservation easement rules should be established for the greenway easement so that property owners who may be interested in donating or selling an easement will know what the township rules will be.
- Properties that are likely to be developed should be identified, with the thought in mind of acquiring greenway easements and access easements to the greenway during the development approval process.
- Ordinances should be reviewed to make sure that the greenway area, of a specified width, cannot be lotted out and must be preserved.

- Availability of County funds for preservation of Natural Areas should be explored.
- A map of the greenway area should be displayed in the Township meeting room so that the Planning Commission, Board of Supervisors, and other groups can see what we want to protect.
- Implementation Timetable: Continue the process of requiring open space dedication along the Neshaminy; investigate ordinance options. Continue Neshaminy River Conservation Plan efforts.
- Responsibility: Board of Supervisors; Environmental Advisory Council; Planning Commission; Park and Recreation Commission.

Bucks County needs to provide guidance on the Link Park: standards and specifications have not been issued. The proposed Link Park should be explored with the County. Specifications on the necessary width, ownership, path location (if any), proposed improvements, and other details must be determined by the County and communicated to the township. The link park concept will provide connections to adjoining townships and will be part of the overall county plan.

**2. Preserve Fordhook Farm property through acquisition or limited development options.**

- Goals to be Achieved
  - Farmland preservation
  - Preservation of historically significant land and buildings
  - Preservation of environmental features
  - Linkages to other open space
- Methods to be Used - The township should use a combination of methods available to it -- purchase, easement, cooperation with other groups, such as Delaware Valley College which adjoins Fordhook -- to preserve as much as possible of this property.
- Implementation Timetable - Begin immediately
- Responsibilities - Board of Supervisors, Open Space Committee, Planning Commission. As much input as possible from the elected and appointed officials should be used because of the importance of this site and the multiple objectives. Coordinate with neighboring Delaware Valley College.

**3. Work with Delaware Valley College to protect Farm 7 through cooperation with the Bucks County Agricultural Land Preservation program.**

- Goals to be Achieved
  - Farmland Preservation
  - Scenic view
  - Preservation of environmentally significant lands
  
- Methods to be Used - The Township should work with the College to get the Farm 7 onto the Bucks County Agricultural Land Preservation Program. In order to be eligible, the College must make an application to the County program. The Township may have to contribute toward the purchase of the easement. The County has a limit of \$10,000 per acre. Through a TDR program, the development rights could be purchased and used elsewhere.
  
- Implementation Timetable - Township should begin discussions immediately, with the goal of having the College submit an application to the County by March 1, 1999.
  
- Responsibilities - Open Space Committee, Board of Supervisors, Planning Commission, Delaware Valley College.

4. Prepare an organized approach to the landowners along Pebble Hill Road and Edison-Furlong Road and the owners of small farms in the northern section of the township; use transfer of development rights, purchase of easements, donations of easements in exchange for tax benefits to preserve the Pebble Hill Road corridor and northern farms.

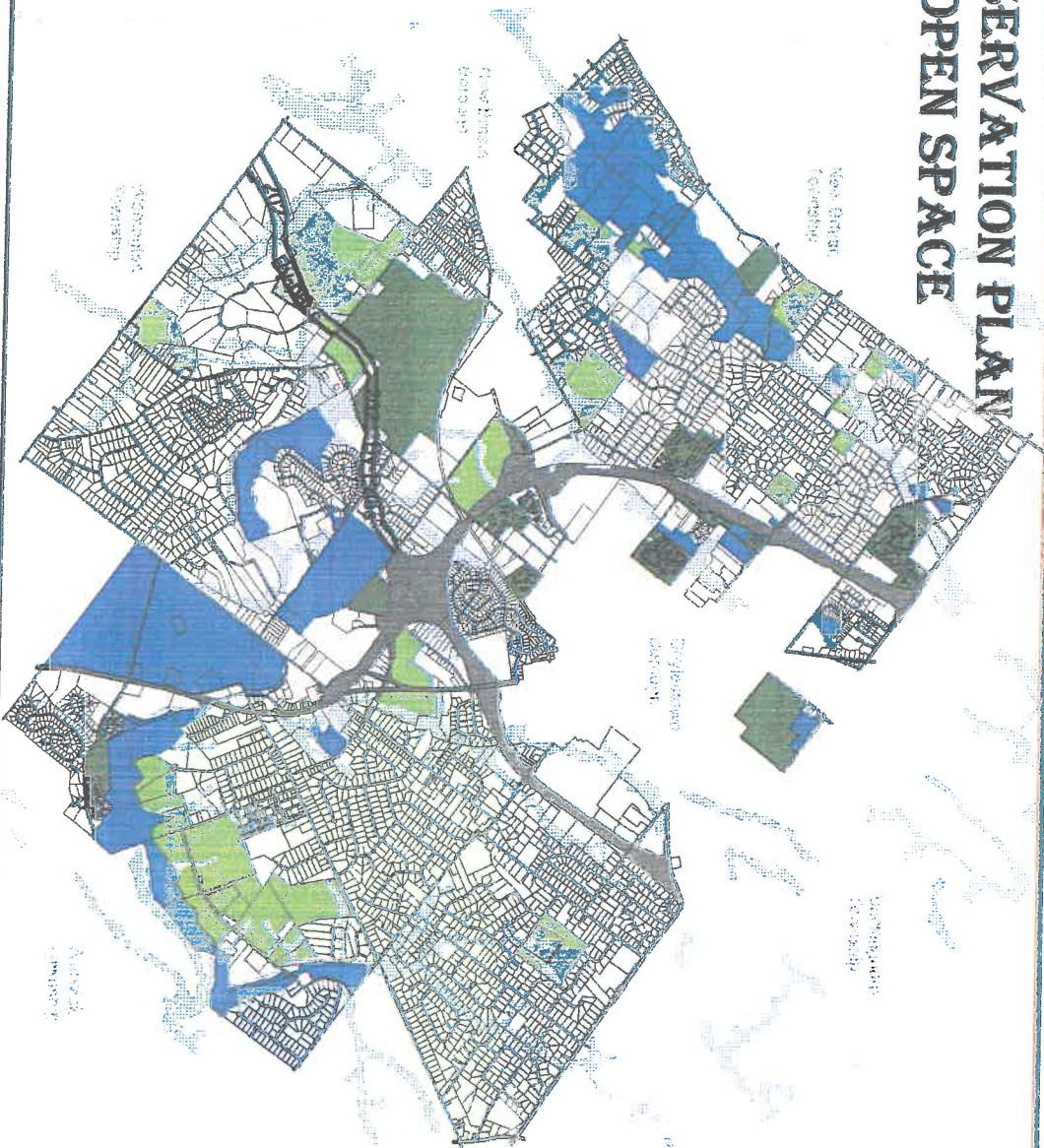
- Goals to be Achieved
  - Farmland preservation
  - Scenic values
  - Preservation of environmentally sensitive lands
- Methods to be Used
  - Prepare and adopt a transfer of development rights ordinance that allows these areas to send their TDRs elsewhere.
  - Develop a strategy to approach the landowners in this area and inform them of their options. Let them know that the township wants to preserve open space.
  - Consider purchase of farm or conservation easements.
  - Prepare a brochure on the Township preservation program for land owners, outlining options available to them.
  - Encourage owners of 50 acres to apply to the Bucks County Agricultural Land Preservation Program
- Implementation Timetable - Begin immediately.
- Responsibilities - Open Space Committee, Board of Supervisors, Planning Commission, Park and Recreation Commission.



5. **Make the Open Space Plan readily available to all boards and commissions and use it as a tool in reviewing development plans, talking to developers, and in formulating other land use policies (utility extensions, etc.) Adopt it as an amendment to the Township Comprehensive Plan. In this way, it will be circulated to adjoining municipalities.**

- **Goals to be Achieved**
  - all open space goals
  
- **Methods to be Used**
  - Adopt and distribute the plan
  
- **Implementation Timetable - Begin as soon as it is adopted.**
  
- **Responsibilities - Open Space Committee, Board of Supervisors, Planning Commission, Township staff, Park and Recreation Commission.**

# PRESERVATION PLAN OPEN SPACE









## DOYLESTOWN TOWNSHIP OPEN SPACE MAP



DOYLESTOWN TOWNSHIP  
BUCKS COUNTY, PENNSYLVANIA

### LEGEND

-  Parcel
-  202 By-Pass Rights of Way
-  Floodplain
-  County & Municipal Owned Property
-  Private Common Areas
-  Properties Meeting Open Space Goals

### SCALE

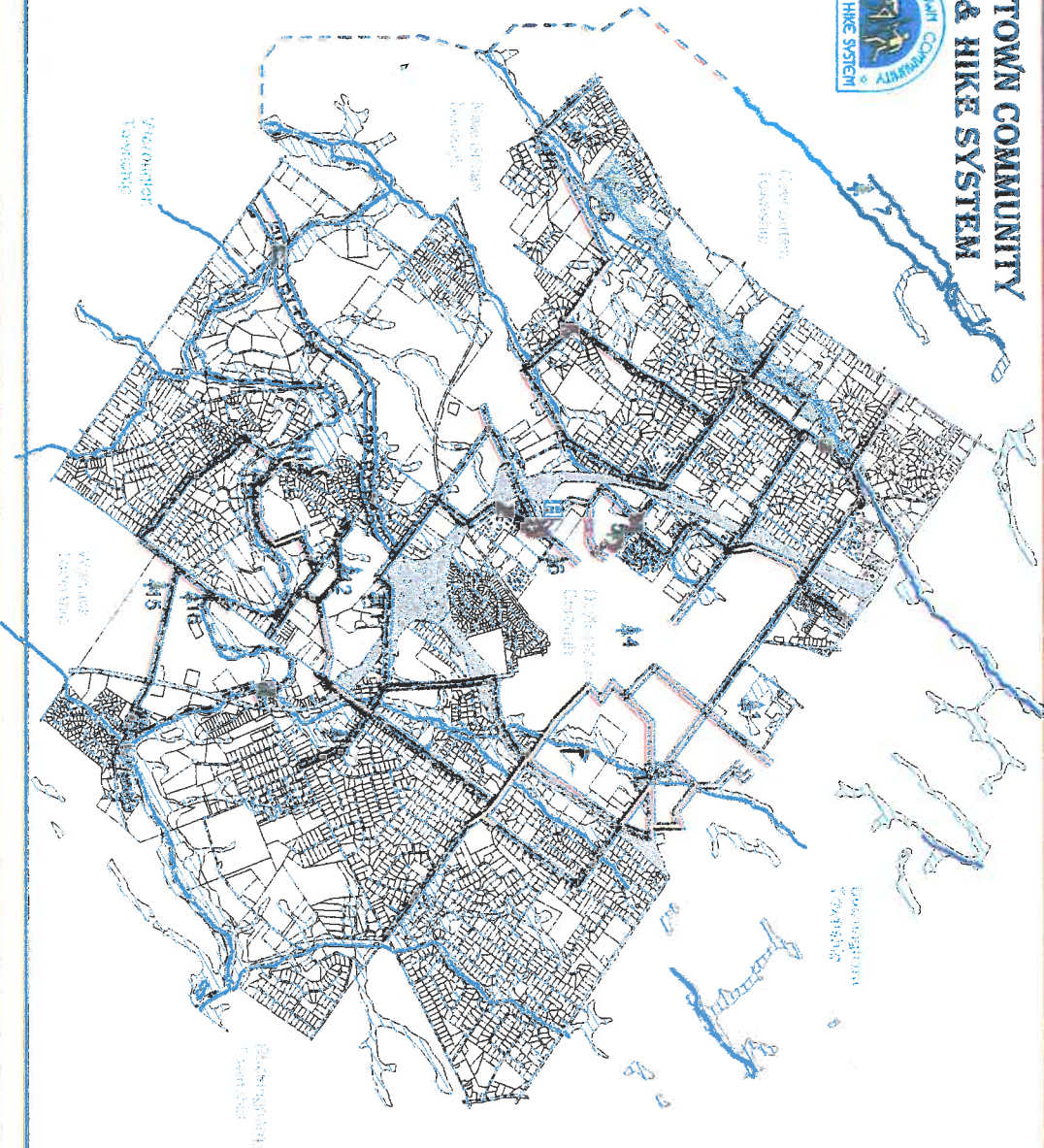


Map Created By:  
Chance Kerick  
Special Projects Coordinator  
Doylestown Township  
June 16, 1998



Doylestown Township Board of Supervisors  
June 16, 1998 Meeting  
Presentation of Open Space Plan

# DOYLESTOWN COMMUNITY BIKE & HIKE SYSTEM



## DOYLESTOWN COMMUNITY BIKE & HIKE SYSTEM DOYLESTOWN TOWNSHIP & BOROUGH BUCKS COUNTY, PENNSYLVANIA



### LEGEND

- 202 B+P-Plan
- Roads
- Latest System
- Or Proposed Construction
- Park - Master Plan
- Open Space/County Owned Property
- Doylestown County Club
- Doylestown Hospital
- Parks
- Parcels
- Streams
- Floodplain

### SCALE



Map Created By:

Clara Keirick  
Special Projects Coordinator  
Doylestown Township

June 18, 2009

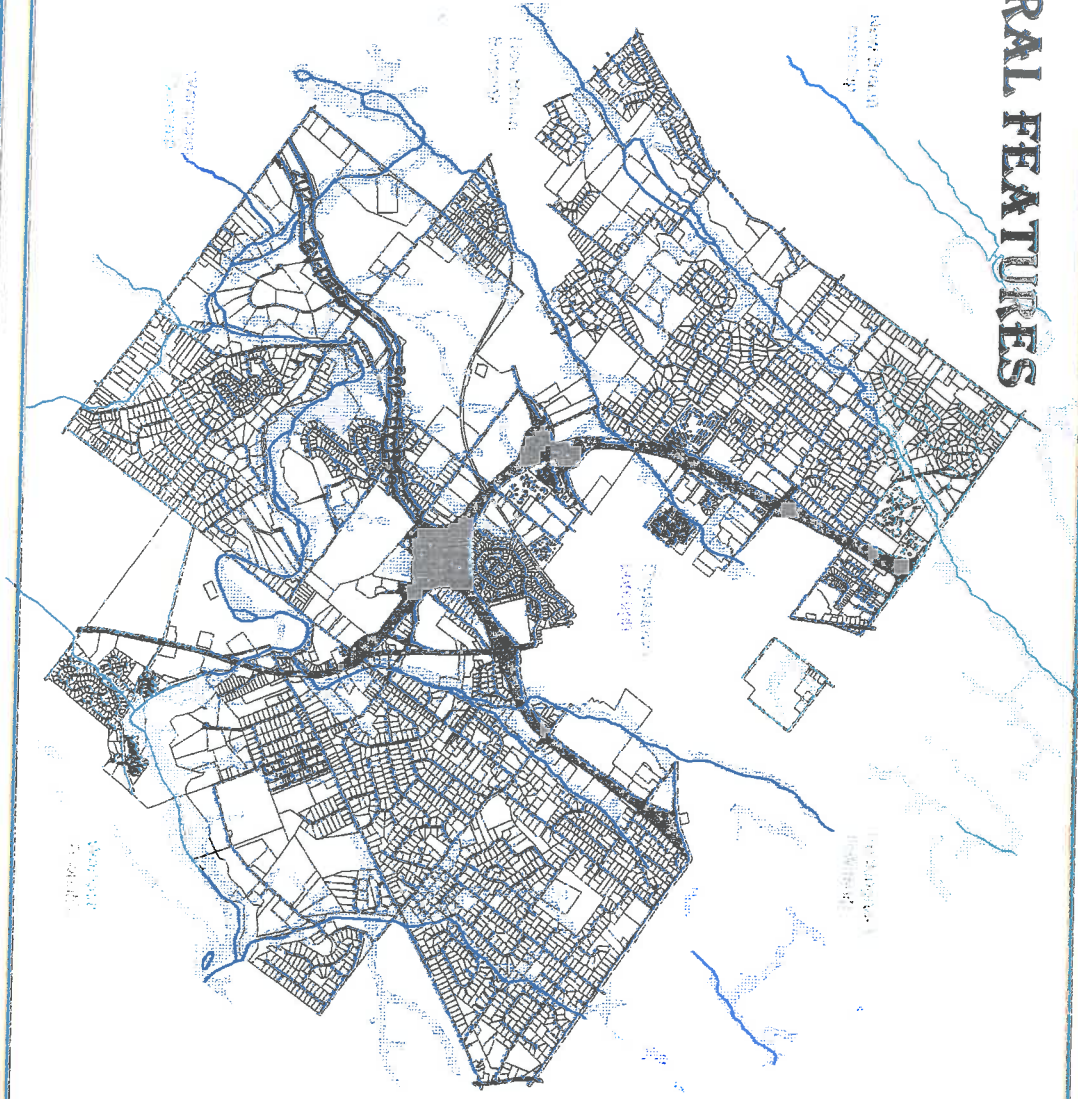


### Parks & Active Recreational Areas

(Numbers Correspond with Map)

- |                         |                        |
|-------------------------|------------------------|
| 1 Fort Hill             | 10 Covered Bridge Park |
| 2 Fanny Chapman         | 11 Harts Woods         |
| 3 Borough Park          | 12 Central Park        |
| 4 Burgess Park          | 13 Neamand Park        |
| 5 Community Park        | 14 Neamand Park        |
| 6 Veterans War Memorial | 15 Turk II             |
| 7 Pasco Valley Park     | 16 Turk I              |
| 8 Pine Run Reservoir    | 17 Bridge Point Park   |
| 9 Ridings               | 18 Sauerman Park       |

# NATURAL FEATURES








## DOYLESTOWN TOWNSHIP OPEN SPACE MAP



DOYLESTOWN TOWNSHIP  
BUCKS COUNTY, PENNSYLVANIA

### LEGEND

-  Parcel
-  Rights of Way
-  202 By-Pass
-  Streams
-  Floodplain

### SCALE

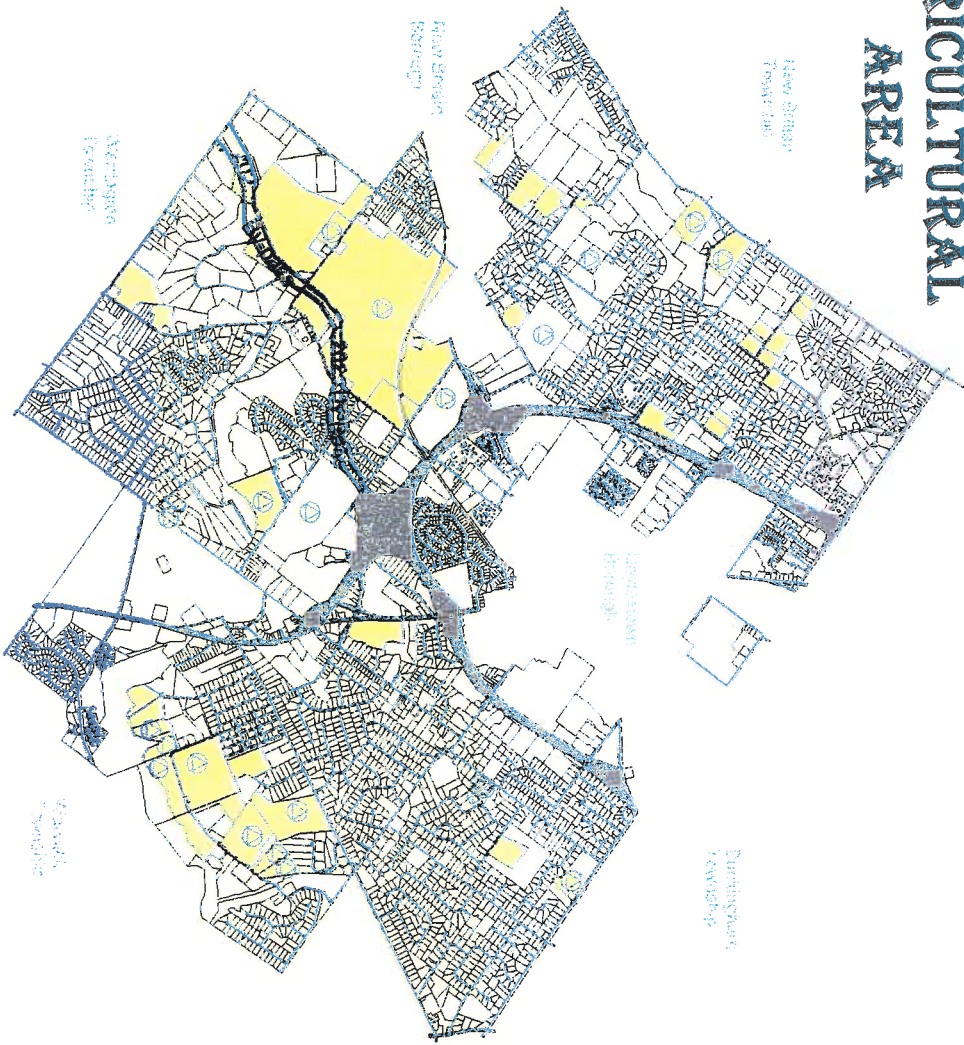


Map Created By:  
Clarece Ikerick  
Special Projects Coordinator  
Doylestown Township  
June 16, 1998



Doylestown Township Board of Supervisors  
June 16, 1998 Meeting  
Presentation of Open Space Plan

# AGRICULTURAL AREA



## DOYLESTOWN TOWNSHIP OPEN SPACE MAP



DOYLESTOWN TOWNSHIP  
INDELS COUNTY, PENNSYLVANIA

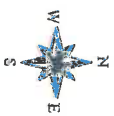
### LEGEND

-  Parcel
-  202 By-Pass
-  Rights of Way
-  Agricultural Security District
-  Actively Farmed Land

### SCALE



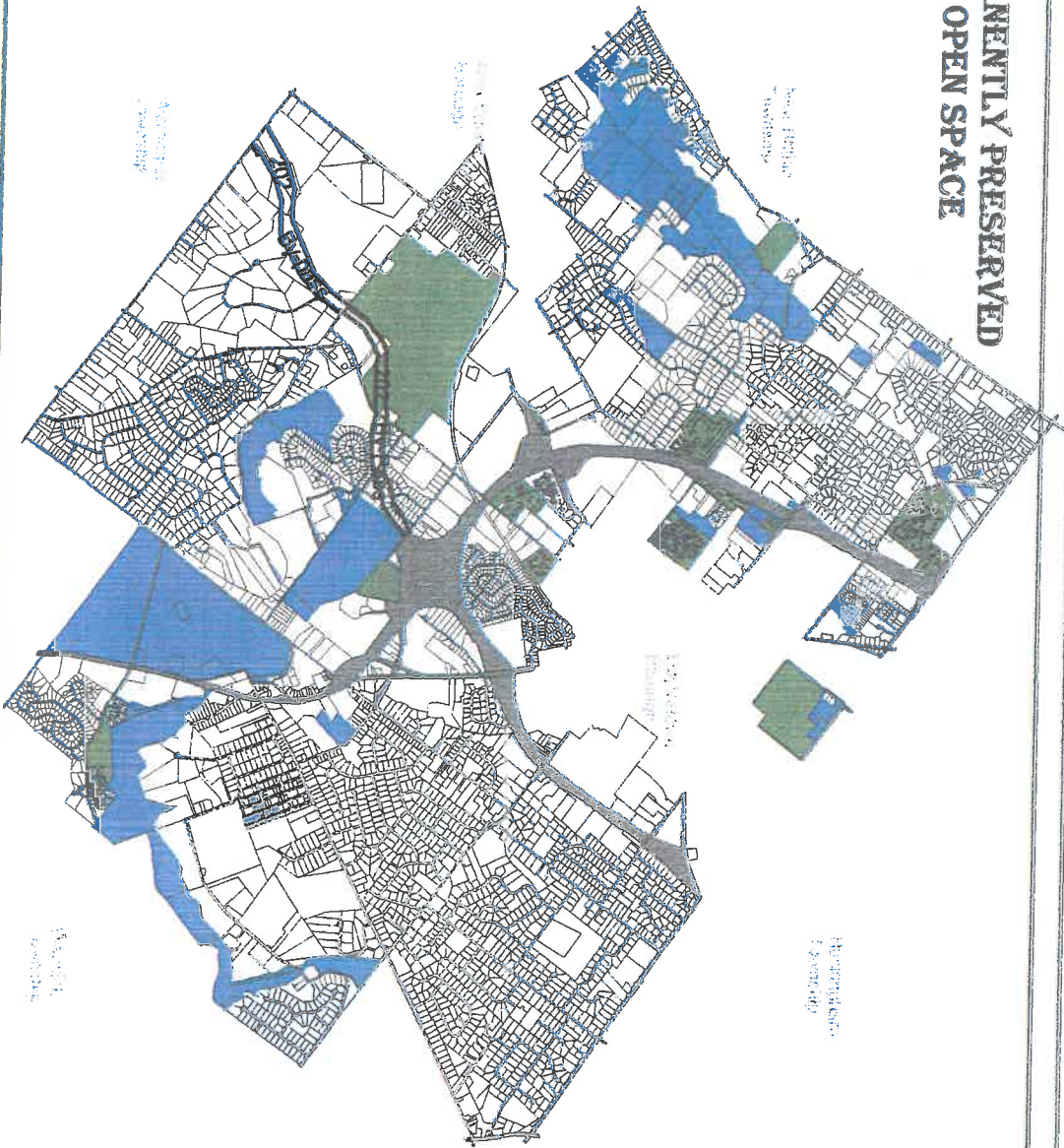
Map Created By:  
Chitra Karick  
Special Projects Coordinator  
Doylestown Township  
June 18, 1998



Doylestown Township Board of Supervisors  
June 16, 1998 Meeting

Presentation of Open Space Plan

**PERMANENTLY PRESERVED  
OPEN SPACE**






**DOYLESTOWN TOWNSHIP  
OPEN SPACE MAP**



**DOYLESTOWN TOWNSHIP  
BUCKS COUNTY, PENNSYLVANIA**

**LEGEND**

-  Parcel
-  202 By-Pass Rights of Way
-  Private/Common Areas Bucks County & Municipal Owned Property

**SCALE**

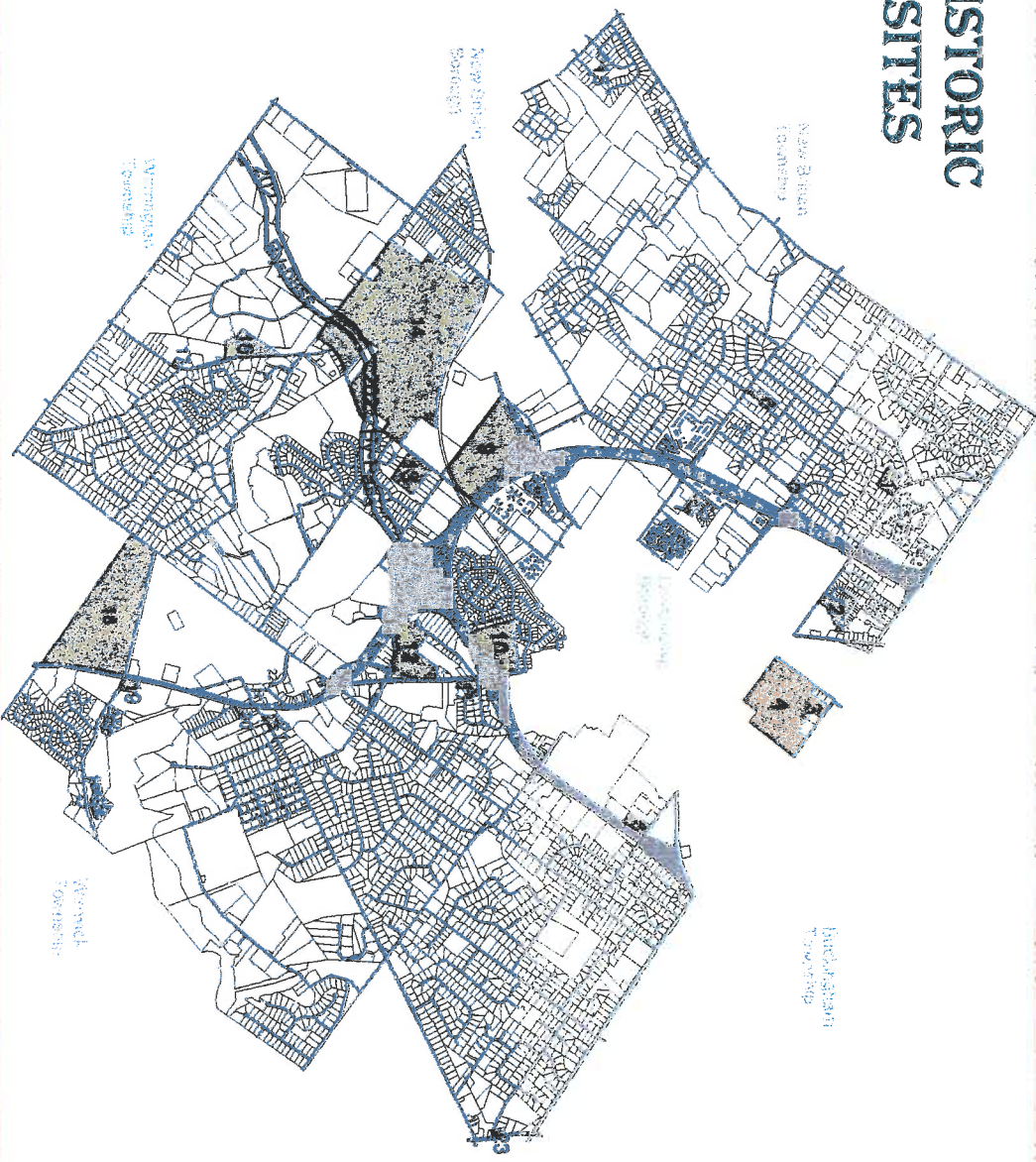


Map Created By:  
 Charisa Kerick  
 Special Projects Coordinator  
 Doylestown Township  
 June 16, 1998



**Doylestown Township Board of Supervisors**  
 June 16, 1998 Meeting  
 Presentation of Open Space Plan

# HISTORIC SITES







## DOYLESTOWN TOWNSHIP OPEN SPACE MAP



DOYLESTOWN TOWNSHIP  
BUCKS COUNTY, PENNSYLVANIA

### LEGEND

-  Parcel
-  202 By-Pass
-  Rights of Way
-  Historic Sites

### SCALE






Map Created By:  
Claree Kernik  
Special Projects Coordinator  
Doylestown Township  
June 16, 1998

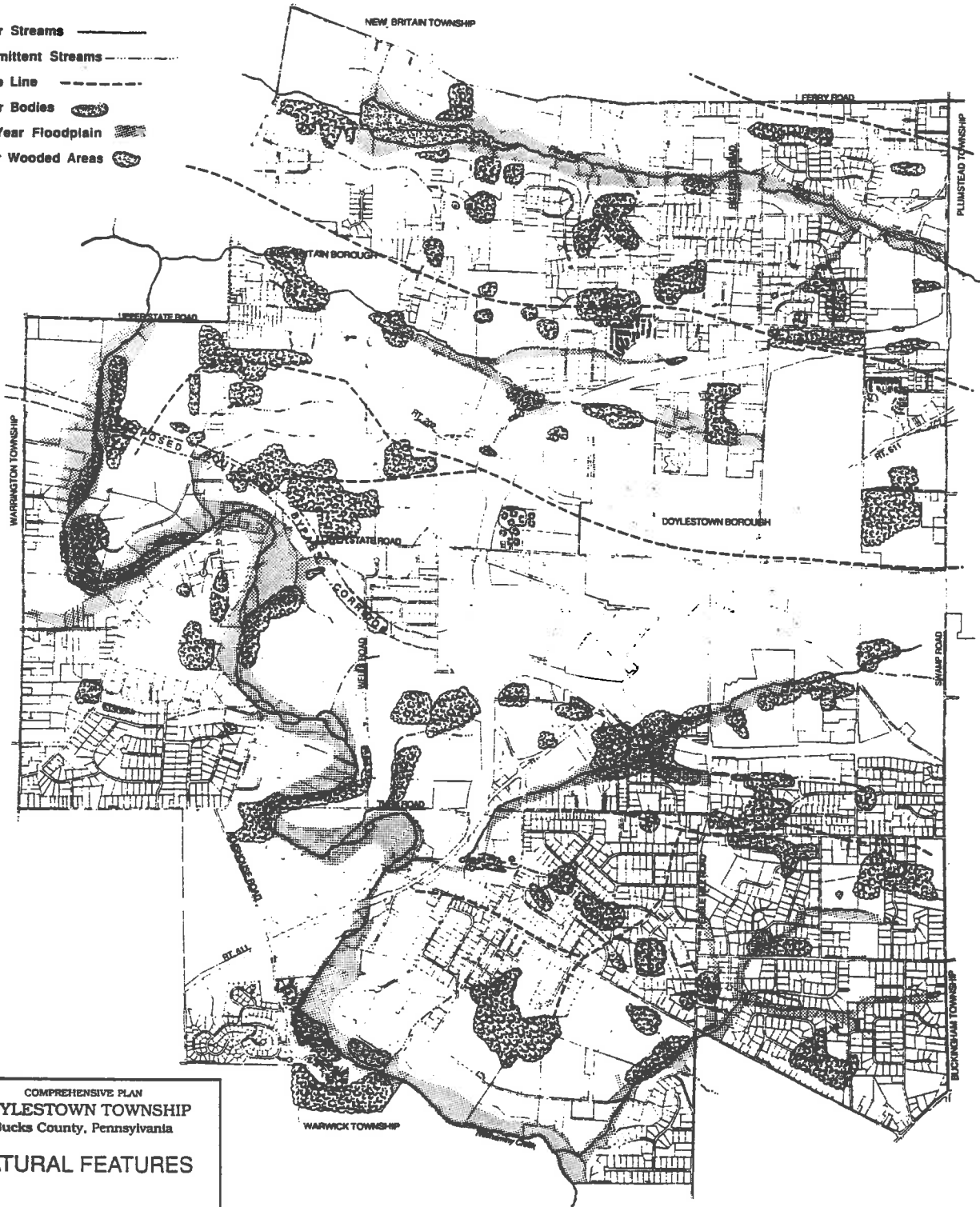


Doylestown Township Board of Supervisors  
June 16, 1998 Meeting

Presentation of Open Space Plan

# Legend


- Major Streams ————
- Intermittent Streams - - - - -
- Ridge Line - - - - -
- Water Bodies 
- 100 Year Floodplain 
- Major Wooded Areas 



COMPREHENSIVE PLAN  
**DOYLESTOWN TOWNSHIP**  
 Bucks County, Pennsylvania

**NATURAL FEATURES**

0 800' 1600' 3200'



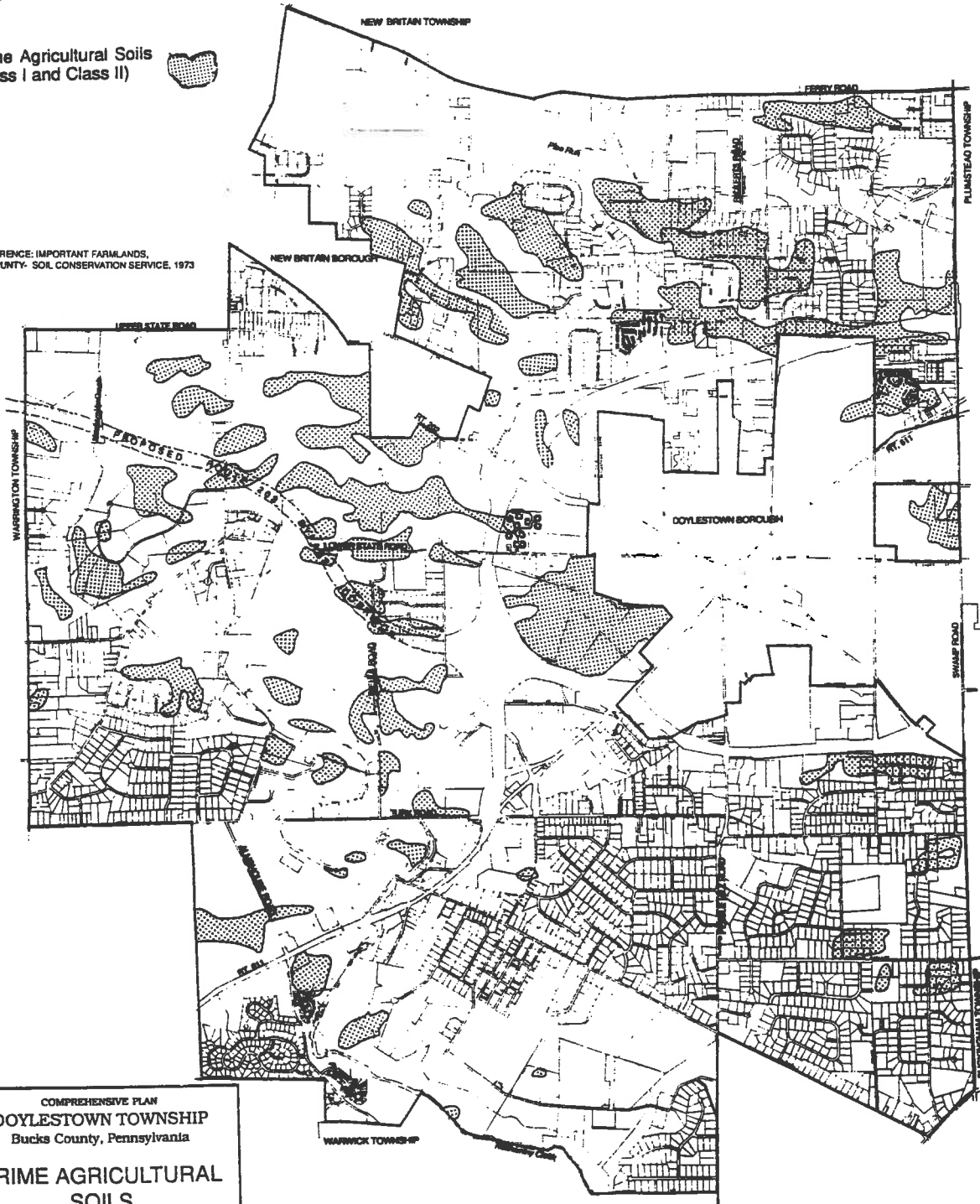


# Legend

Prime Agricultural Soils  
(Class I and Class II)



MAP REFERENCE: IMPORTANT FARMLANDS,  
BUCKS COUNTY. SOIL CONSERVATION SERVICE, 1973



COMPREHENSIVE PLAN  
DOYLESTOWN TOWNSHIP  
Bucks County, Pennsylvania

**PRIME AGRICULTURAL  
SOILS**

0 800 1600 3200

## APPENDIX

*Excerpts from the Doylestown Township Comprehensive Plan dealing with  
Natural Features*

### Goal

**Preserve the natural features of the township, including the drainage areas of Neshaminy Creek and its tributaries, wooded areas, steep slopes, and sensitive environmental areas.**

### Background

Communities have become increasingly aware of the importance of natural features in the land use planning process. Flooding, water pollution, soil erosion and destruction of wildlife are a few of the consequences of allowing development without regard to the natural environment. Natural resources cannot be the sole determinants of future land use. They can be used to help determine the proper location and intensity for development of different types. They provide the framework within which more informed decisions can be made regarding the accommodation of community needs.

The concern for preservation of the natural features of the township is as old as the township's formal planning program. When the first township plan was prepared in 1963, the township set as a primary goal the "conservation of lands along the Neshaminy Creek, the Pine Run, and other tributary streams through special building provisions and the preservation of hillsides, steep slopes and wooded areas. "

The laws of Pennsylvania support planning based upon natural resource protection through its Constitution. The Constitution, amended in 1968 by public referendum, affirms the right to protect natural resources:

*The people have a right to clean air, pure water, and to preservation of the natural, scenic, historic and aesthetic values of the environment. Pennsylvania's public natural resources are the common property of all people including generations yet to come.*

### Topography

Topography is significant to land development because of its influence on development patterns and road alignments and because of the scenic beauty and variety it creates in the landscape.

The township's most gently sloping land is located in the area north of Route 202 and the Doylestown Borough boundary, extending north to Pine Run. South of Route 202 the topography is more rugged and uneven, with land elevations of less than 200 feet along the Neshaminy Creek near Edison to high point of more than 350 feet.

The most steeply sloping land is found in the southern section of the township in the form of bluffs along the Neshaminy Creek. Steep

slopes of between fifteen and twenty percent are also found near the Warwick and Buckingham Township lines.

The disruption of steep slopes can cause excessive amounts of soil to be lost through erosion when the vegetative cover is disturbed. Silting of streams and diminished water quality results from this erosion. Removal of vegetation and the construction of impervious surfaces diminish groundwater recharge and cause greater erosion and sedimentation in streams. This ultimately affects the quality of the water in the community by affecting the quality of surface waters and may diminish the capacity of streams to carry water, leading to flooding.

Development on steep slopes can require greater township expenditures for road maintenance and repair.

## Woodlands

Woodlands are concentrated in areas which have not been farmed in recent years: along streams, in wet areas, and on steep slopes. Woodland areas play an important role in maintaining the balance and health of the environment by:

- reducing water runoff and soil erosion on slopes
- helping to prevent water pollution by minimizing the sedimentation of lakes and streams.
- stabilizing stream banks.
- contributing to a more pleasant climate by adjusting the amount of dust and humidity in the air, providing shade, and reducing strong winds.
- serving as wildlife habitats, recreational areas, and land use buffers.
- adding interest, variety, and beauty to the landscape.
- providing shade to keep the water temperature low in streams, thus helping to maintain the aquatic life in streams.

The environmental, aesthetic, and recreational benefits of woodland areas justify their protection in the development process. Although not all wooded areas can be preserved as the township develops, efforts should be made to protect a portion of the trees and use them in developing creative and appealing site plans.

## Soils

Soils have historically played an important role in the development patterns of Bucks County. Areas with good soils for agriculture have been used for farming. Areas with limited agricultural potential have been used for pastures or have remained wooded.

The capability of soils to renovate wastewater has been one of the most significant determinants of development patterns in recent years, with areas capable of handling on-site septic systems being developed before those which cannot accommodate septic systems.

The soils of Doylestown Township fall into two soil groups. The area north of Route 202 belongs to the Lansdale-Lawrenceville soil association. The ridges and upper portions of slopes are primarily

Lansdale soils with the more silty Lawrenceville soils occupying the valleys. Lansdale soils are deep and well drained with a moderately permeable subsoil. Most problems with development on these soils are related to slope and stoniness.

Lawrenceville soils are deep and moderately well drained with a firm, dense silt loam lower soil that is moderately permeable. Development problems are usually related to the seasonally high water table, permeability, and erosion hazard. Other soils found in this area include the well-drained Penn, Steinsburg, and Klinesville on the ridges and steep slopes, and the Chalfont, Doylestown, Abbottstown, Readington, Quakertown, and Duncannon soils in the valleys. Except for the well-drained Quakertown and Duncannon soils, this group of soils has moderate to severe drainage problems.

The southern section of the township falls within the Abbottstown-Readington-Reaville soils association. The generally slow permeability and seasonally high water table create problems of wetness which limit the use of septic systems and impose limitations on construction.

The waterways of the township, including large streams such as Neshaminy Creek as well as small unnamed tributaries, are bordered by Bowmansville silt loam and Rowland silt loam. Rowland soils are floodplain soils with low permeability. They are frequently flooded and have a water table that rises within 18 to 24 inches of the surface during wet periods, presenting severe problems for development. Bowmansville soils are poorly drained and water is frequently ponded for long periods during times of wetness.

Areas of hydric or wet soils are located throughout the township. These soil types have become important indicators of wetlands areas which are areas regulated by the U.S. Army Corps of Engineers under the federal Clean Water Act. The hydric soils within the township are Doylestown and Bowmansville. Soil type is one of three indicators of wetlands, the other two being the presence of wetland vegetation and hydrology – the saturated soil conditions and the drainage characteristics. The definition of wetlands used by the Corps of Engineers is:

*Those areas that are inundated and saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions, including swamps, marshes, bogs and similar areas.*

The Corps of Engineers has adopted regulations designed to protect wetlands because of their value to protection of water quality, provision of animal habitats, and their ability to absorb floodwaters. These regulations require a permit from the Corps to disturb wetlands areas. Wetland areas are also subject to state regulation by the Pennsylvania Department of Environmental Resources.

## **Agricultural Land**

Agriculture used to be the main activity in all Central Bucks County communities, but it has been largely replaced by suburban residential growth. Today the major farmland in the township is owned and farmed by Delaware Valley College.

Many communities have attempted to slow the conversion of farmland to other uses. Preferential tax assessments have been in place in Bucks County for many years. Some communities have required the preservation of prime agricultural soils as part of the land development process, recognizing that they are a non-renewable resource.

In its Natural Resources Plan, Bucks County introduces new criteria for evaluating agricultural potential with the identification of "Significant Agricultural Areas." These areas include "Important Farmlands" (as designated by the Soil Conservation Service) of at least 500 largely contiguous acres with limited urban infrastructure and 3 percent or less site coverage. "Significant Agricultural Areas" have the potential of becoming voluntary farmland districts under the Pennsylvania Agricultural Area Security Act 43 (1981) and may ultimately be eligible for state preservation funding.

One "Significant Agricultural Area," centered in northern Warrington Township, incorporates a portion of Doylestown Township. The area forms a narrow strip extending from the westernmost corner to the approximate center of Doylestown Township, near the U.S. 611 by-pass and includes mainly lands owned by Delaware Valley College.

It is unlikely that the township will have a significant farm base in future decades. Land values make it unappealing for many older farmers to continue in agriculture. However, some smaller farms geared to providing local food items have succeeded in nearby communities, and the township should encourage continued farming through its land use controls.

## **Surface Water**

Both the topography and soil conditions are affected by and related to the surface drainage pattern. The entire township lies within the Neshaminy watershed. The Neshaminy Creek watershed covers much of central and lower Bucks County. For over eight miles the Neshaminy meanders through the western section of the township, fed by numerous tributaries such as Cook's Run, Pine Run, Rich's Mill Creek, which flows into the Neshaminy at Edison, and an unnamed tributary originating in the Pebble Hill section of the township and flowing into the Neshaminy at Bridge Valley.

The Doylestown Township section of the Neshaminy is subject to significant sediment pollution as a result of land wash from urban and agricultural areas. This sedimentation increases the cost of water purification and blocks stream channels with a resulting decrease in the channel capacity.

## Floodplains

The floodplains in Doylestown Township are those areas adjacent to the Neshaminy Creek and its tributaries. Floodplains serve primarily to accommodate floodwater during periods of heavy precipitation. They contribute to the Township's scenic beauty, to groundwater recharge, and because of the natural vegetation associated with them, to soil erosion and sedimentation reduction, wildlife protection, and healthy stream conditions.

Doylestown Township participates in the National Flood Insurance Program (NFIP), which is designed to reduce flood hazards through floodplain regulation. The program is the result of an earlier shift in Federal policy away from structural flood control solutions to more comprehensive floodplain management approaches.

For purposes of regulation, the floodplain is defined by the 100-year or base flood which has a one percent chance of being equalled or exceeded in a given year.

Areas not regulated under the NFIP but vulnerable to flooding nonetheless are those adjoining smaller order streams and containing floodplain or alluvial soils. The Soil Conservation Service's Soil Survey identifies seven floodplain soil types in Bucks County, two of which are located in parts of Doylestown Township: Bowmansville silt loam (Bo) and Rowland silt loam (Ro).

## Groundwater and Geology

The geological formations upon which the township lies determine the topography of the landscape and the potential for groundwater supply. Groundwater is held in waterbearing rock formations or aquifers. Because many township residents are dependent on individual on-site wells for their water supply, the quality and quantity of groundwater is an important planning concern.

The two major geological features under Doylestown Township are the Lockatong formation and the Stockton formation. The Stockton formation generally provides a reliable water supply, with reported yields of more than 70 gallons per minute. The Lockatong is a much poorer supplier of groundwater, in terms of both quantity and quality.

The Lockatong formation cuts across the southwestern section of the township from the intersection of Bristol and Upper State Roads to the intersection of Edison-Furlong and Pebble Hill Roads. It is not surprising that the reported groundwater supply problems are concentrated in the portion of the township underlain by the Lockatong formation. The survey of residents undertaken for the township's Comprehensive Plan for Water and Wastewater Facilities revealed that most problem wells are located in the southwestern portion of the township.

A small section of the township near Furlong is underlain by Cocalico Phylite which is a poor source of groundwater.

To maintain the groundwater supply, aquifers must be recharged to compensate for constant withdrawals. Precipitation provides the major source of recharge, and the capability of recharge depends upon the

permeability of the surface and underlying rock formations, topography, and the presence of areas which can absorb and hold water such as wetlands and floodplains. Land use policies regulating impervious surfaces and the protection of wetlands and floodplains will directly influence the quality and quantity of groundwater supply.

Final #1

# The Neshaminy Creek Watershed *Rivers Conservation Plan*

*Funded by:* Pennsylvania Department of Conservation and Natural  
Resources  
Harrisburg, PA

*Led by:* Doylestown Township  
Wells Road  
Doylestown, PA

*In cooperation with:* Chalfont Borough, Doylestown Borough and  
New Britain Borough

*Managed by:* Heritage Conservancy  
85 Old Dublin Pike  
Doylestown, PA

February 6, 1997  
*Revised June 6, 1997*



## **ACKNOWLEDGMENTS**

**Pennsylvania Department of Conservation and Natural Resources**

**Doylestown Township Board of Supervisors**

**Rivers Conservation Plan Task Group**

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**Neshaminy Creek and its resources**

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## **EXECUTIVE SUMMARY**

The Neshaminy Creek Rivers Conservation Plan is the product of a twelve month study and analysis of one of Bucks County's many unique and valuable natural resources. It was completed under the leadership of Doylestown Township and prepared for Chalfont Borough, Doylestown Borough, Doylestown Township and New Britain Borough. The need for such a plan has become increasingly clear as population and development in these four municipalities has grown. Residential and commercial expansion, if left unrestricted, can threaten the Neshaminy Creek's environmental stability and beauty. Because of the deep environmental commitment of the citizens and government leaders of these communities, this plan was produced to preserve the Neshaminy, mitigate potential damage from development, and improve access to public sections of the creek.

The Rivers Conservation Plan recommends a long-term course of action to protect the resources of the Neshaminy Creek and make sure it is available for people to enjoy. The first part of the plan reports on conditions within the stream corridor. Existing resource data was reviewed to understand the greater trends occurring in the four-municipality study area. This information included land uses, zoning designations, cultural and historical resources, recreational resources, threatened and endangered species, census data and local ordinances. Public workshops were held and surveys distributed to seek the opinions of stream corridor residents. Their comments are included in this section.

Physical conditions were inventoried by performing a visual survey for the length of the Neshaminy Creek within the study area, including the Pine Run, Cooks Run and County Club Creek tributaries. The visual analysis focused on the health of the streambanks and riparian corridor, and accessibility of the creek and its scenic features. The visual analysis confirmed the existing resource data.

Analysis of the resource data and visual observations identified assets that should be preserved and problems that should be corrected. Six issues are of primary importance: developing a recreational and protective greenway; developing public education programs; implementing best management practices to control erosion and sedimentation; reviewing natural resource ordinances and regulations; cleaning up the creek corridor; and designing and implementing a water quality study. These would provide the best protection for the stream corridor and also provide greater public enjoyment of the stream.

The final part of the Rivers Conservation Plan includes the recommended goals and objectives. A special EAC meeting was held on March 25, 1997, to review and discuss the goals. The goals of the Neshaminy Creek Rivers Conservation Plan were affirmed during this meeting. Final public comments were solicited during a presentation on April 22, announced with a large block advertisement in two local

newspapers. This meeting was well-attended and drew a variety of interested parties: local residents, township supervisors, and borough supervisors.

The goals that developed from this plan encourage the municipalities to create joint greenway trail plans and riparian buffer ordinances. The Neshaminy Creek Rivers Conservation Plan provides Chalfont Borough, Doylestown Borough, Doylestown Township and New Britain Borough an opportunity to build a strong inter-municipal relationship to protect the creek for all of their residents. Coordinating greenway plans and ordinance design, and sharing education programs, will provide strong and ongoing stewardship for this regional resource. Individual efforts will gain important results, but cooperation is the key to long term success. The Neshaminy Creek is a regional resource that is not governed by political boundaries. Implementing a plan of action that utilizes the best available environmental practices will help provide a healthy, stable, and useful creek.

## **1.0. INTRODUCTION**

In order to protect and enhance river resources throughout the state of Pennsylvania, the Pennsylvania Department of Environmental Resources (DER) created the Pennsylvania Rivers Conservation Program. Its mission is to help local municipalities "conserve, restore and enhance" their local river resources. The program provides technical and financial assistance for conservation planning and for plan implementation. In conjunction with the program, the state established the Pennsylvania Rivers Conservation Registry to recognize important resources. Registration with the state enhances conservation efforts by endorsing local plans and encouraging public agencies to act in a consistent manner.

Doylestown Township was awarded a Rivers Conservation Grant in July 1995 by the Pennsylvania Department of Conservation and Natural Resources (DCNR). The grant is being used to develop a Rivers Conservation Plan (RCP) for the Neshaminy Creek. The plan, once reviewed by local municipalities, will be submitted to DCNR for approval and inclusion in the Rivers Conservation Registry.

The Rivers Conservation Plan develops detailed guidelines for management of the creek and the surrounding study area. This plan will focus on improving recreation opportunities and on best management practices (BMPs) for the project area. It will provide standards for effective use and protection of the area and make recommendations for appropriate actions to be taken. In order to determine the best management practices, the study area was inventoried and mapped. The area included the Neshaminy Creek and selected tributaries within the municipalities of Doylestown Township, and Chalfont, Doylestown and New Britain Boroughs. Performing water quality and ground water studies were not part of the study process.

The project will be completed in June 1997, when individual municipalities will be asked to consider the adoption of a resolution to accept the recommendations in the findings report.

Heritage Conservancy was retained to manage the project and perform the Geographic Information Systems (GIS) mapping and develop a findings report in partnership with the Doylestown Township Environmental Advisory Council (EAC).

### **1.1. The Study Area**

The total study area is approximately 13,286 acres (See Figure 1). Doylestown Township is the largest segment, with 10,018 acres or 75% of the study area, followed by Doylestown Borough with 1,384 acres or 10% of the study area. Chalfont Borough makes up 1,061 acres or 8% of the study area, and New Britain Borough 823 acres or 6% of the study area.

The Neshaminy Creek RCP includes part of the main branch of the Neshaminy Creek, most of Pine Run and Country Club Creeks, and all of Cooks Run. The total length of the main branch of the Neshaminy Creek in the study area is approximately 11 miles. This includes the north and west branches, but does not include the New Britain Township segments below Chalfont and New Britain Boroughs (approximately 1.5 miles). The New Britain Township segments were not considered in the study. Pine Run is approximately 5 miles long, Cooks Run approximately 4 miles long, and Country Club Creek approximately 5 miles long.

The west and north branches of the creek enter the study area in Chalfont. The headwaters of the north branch are in Buckingham Township, east of Route 413. A dammed portion of the north branch forms Lake Galena (the Peace Valley reservoir), a recreation area. The headwaters of the west branch of the Neshaminy Creek are in Hatfield Township, Montgomery County.

## 1.2. The Rivers Conservation Planning Process

The Neshaminy Creek Rivers Conservation Plan commenced with a public informational meeting and workshop in April 1996 to announce the initiation of the rivers conservation planning activities of the Neshaminy Creek Rivers Conservation Plan. In addition to providing information, RCP planners generated public input to the plan. An announcement was placed in the local newspaper three weeks in advance of the meeting.

Doylestown Township, the lead municipality administering the grant, and Heritage Conservancy, the project manager, presented background information on the project including the project schedule, goals and process steps, and the DCNR Rivers Conservation Program.

The workshop portion of the meeting was used to determine the concerns of people living in the municipalities and using the creek resources. The participants were divided into 2 groups to facilitate discussion. The discussion groups were asked to respond to a list of questions about Neshaminy Creek. They were asked their hopes and goals for the future of the creek, including what uses should be recommended or discouraged. The participants ranked the issues in order of importance, and the primary elements were then discussed by the entire group. After discussion, the participants voted on the ranked issues to stress their most pressing concerns. Each participant was given five votes to distribute as they saw fit.

The issues listed below each received at least two votes (numbers in parentheses indicate number of votes):

- (6) Balancing public access with environmental protection.
- (5) Managing water pollution from point and non-point source pollution and siltation.
- (5) Identifying and protecting viable natural communities along the creek.



- (5) Ensuring proper creek flow to offset sewer contamination.
- (5) Recognizing river protection throughout the development process, and possibly revising ordinances toward that end.
- (4) Balancing private versus public environmental issues and concerns; land use rights.
- (4) Listing and preserving wetlands.
- (3) Enhancing recreational possibilities.
- (2) Monitoring effects of continued land development on stream quality.
- (2) Defining levels of public access, to address issues of overuse and safety.
- (2) Establishing public trails and natural areas in the floodplains.
- (2) Maintaining adequate ground water recharge.
- (2) Ensuring water quality and protection of natural communities, especially during summer months.

The Appendix contains the full list of issues identified by participants.

A Rivers Conservation Advisory Committee was formed from participants attending the public meeting. This committee represents the three boroughs and other public agencies who may assist in the project. Their role in the RCP process is to assist in collecting data and in developing the plan. The program requires that persons representing the individual municipalities carry information back to their respective municipalities and obtain supporting resolutions at the end of the process.

### **1.3. Survey**

To better understand the views of landowners, a survey was sent by Doylestown Township to residents with waterfront property in the study area of Neshaminy Creek and its tributaries, Pine Run, Cooks Run and Country Club Creek. Names and addresses were obtained from property tax records. Of the 305 questionnaires mailed in June 1996, 83 residents responded (27% of the total) and 15 were undeliverable. The majority of those responding (77%, or 63 people) live in Doylestown Township.

#### **1.3.1. Survey Findings**

- There is very strong support for conservation management of stream corridors in the River Conservation Plan Study area.
- Residents listed wildlife habitat, open space, water quality and scenic beauty as qualities they valued in their environment, and significant in their decision to live along these creeks.
- Over 90 percent of those responding encouraged protection of these resources. Eighty percent would support a conservation plan and land use regulations.

### **1.3.2. Land Ownership, Land Use and Residence**

- The majority of respondents (82%) are living at a primary residential property.
- Only 5 percent of land use is agricultural, and only 7 percent is industrial or commercial.
- One hundred percent (100%) of respondents recommended preservation of the scenic character of the creek. At least 95 percent recommended preservation of undeveloped land, existing farmland and the area's rural character, wildlife habitat and historic resources.
- While most residents value creek-related recreation -- primarily nature observation and fishing -- a quarter of the respondents make no recreational use of stream corridors (or are unable to do so because of limited access), and less than 10 percent boat, swim or bicycle.
- Landowners reported the existence of wetlands for 6 percent of properties and open space (woodlands or fields) for 20 percent of properties.
- None of the properties exceeds 30 acres, and the majority (37%) are less than one acre. Thirty-one percent are between 1 and 6 acres. Of those responding, 12 percent report that they do not own waterfront property. (It is not clear if these are owners or renters.)

### **1.3.3. Issues and Management Options**

- Of future management options in the Neshaminy Creek area, the overwhelming majority of respondents (over 90%) endorsed preservation of open space and scenic character with protection of wildlife habitat, woodlands and water quality, and would discourage more residential and commercial development.
- In regard to conservation programs to protect the creek corridors, nearly 90 percent would support conservation planning and regulation.
- When asked who should have major responsibility for management, respondents favored local oversight rather than state or federal. However, there was no clear consensus as to which local agency should take primary responsibility.
- Respondents gave fairly even endorsement for primary management responsibility to municipal government, county government, conservation organizations, private citizens and coalitions of public and private organizations. This seems to indicate opportunity for a public-private partnership.
- They also would like to see better government planning (which probably includes better inter-agency government coordination).
- Landowners believe responsibility for conservation management also rests with themselves (78%), and the majority would like to learn more about techniques and opportunities to help conserve natural, historic and recreational resources.

## **2.0. RESOURCE INVENTORY AND ANALYSIS**

The natural and cultural resources within the study area were inventoried, mapped on GIS where compatible data were available, and analyzed to gain an understanding of their significance and relationship to the Neshaminy Creek. The map coverages are:

- Land Use
- Generalized Zoning
- Hydrography
- Hydric Soils
- Cultural Resources and Recreation
- Visual Analysis

Resources and characteristics discussed and analyzed in this report are topography, land use, zoning, hydrography (including floodplains and wetlands), dams and reservoirs, soils, geology, threatened and endangered species, cultural and historical resources, recreational resources, local ordinances, population, and visual observations.

### **2.1. Topography**

The study area consists predominantly of gently rolling hills that are characteristic of the Piedmont region of southeastern Pennsylvania. The most gently sloping land is in the area north of Route 202 and Doylestown Borough, extending north to Pine Run Creek. South of Route 202 the topography is more diverse, with land elevations from 200' to 350'. The steepest slopes are found near the Warwick and Buckingham Township lines.

Steep slopes are also found along the course of the Neshaminy Creek. While these areas are vegetated, they prevent stormwater runoff and erosion, siltation of streams, and the degradation of water quality. Construction activities that remove vegetation and replace it with impervious road and roof surfaces increase erosion through runoff and surges of water, and can cause flooding. Additionally, the vegetated slopes provide the most scenic views when seen from the creek.

### **2.2. Land Use**

The Land Use Map indicates the general coverages of land uses. Data was developed from 1990 aerial maps obtained from the Delaware Valley Regional Planning Commission (DVRPC). Some confusion may arise from some of DVRPC's categories of use, particularly "wooded" and "single family detached housing". A single family lot that includes a wooded area can be listed in both categories simultaneously.

The Percent of Land Use Acreage in Study Area pie chart on the Land Use Map (Figure 2), generated from the GIS database, indicates that the banks of the Neshaminy Creek and its tributaries are largely covered by vegetation, with many wooded areas. This is encouraging, as it indicates that preservation is currently

being practiced in the area. The most extensive use by far is single family detached housing at 45%. The trees and shrubs which are maintained by homeowners make up a large part of the vegetation in the riparian area. The next most common uses are agriculture and woodlands, at 15% and 16% respectively. Most of the other uses are quite minimal, at 5% or less.

### **2.3. Zoning Districts**

Zoning analysis reflects the compatibility of current use designations with other area activities and natural characteristics. The generalized Zoning Map shows the current zoning districts in the four municipalities. The data was obtained from the Bucks County Planning Commission, combining all municipal zoning into a generalized form. The information primarily dates from the mid-1990's.

The pie chart Zoning Districts as Percent of the Study Area (Figure 3, shown on the Zoning Map), generated from the GIS database, indicates that 45% of the land is zoned for between 1 and 2 dwelling units per acre (du/acre). Nineteen percent is zoned at less than 1 du/acre. The higher housing densities comprise a smaller area, with zones of 2 du/acre to 4 du/acre at 10%, and zones greater than 4 du/acre at 9%. Institutional uses occupy 7% of the land, and mixed, light industrial, and office heavy industrial only 6%.

### **2.4. Hydrography**

Hydrography is the geographic location of flowing surface water, ponds, wetlands, and floodplains. The Hydrography Map illustrates the locations of each of these, except for the National Wetland Inventory (NWI) designated wetlands. They are shown on a separate mylar overlay map, since this coverage is not available in digital form for the Doylestown and Buckingham Geological Survey (USGS) Quadrangles. Also located on the Hydrography Map are area dams and reservoirs, discussed below.

#### **2.4.1. Floodplains**

Of the total study area, floodplains make up about 1,996 acres or 15 percent. They serve primarily to accommodate floodwater during periods of heavy precipitation. They may also recharge aquifers, create wildlife habitats, and provide for recreation access points. As development occurs, the floodwater levels tend to rise. This happens when more impervious surfaces are built and runoff increases, meaning that water cannot be absorbed into the soil. Stormwater runoff volumes and velocity increase, and the length of time required for the precipitation to become runoff shortens, resulting in larger and more frequent flows. The pie chart Land Use as a Percent of Total Area within Floodplain indicates the uses within the floodplain boundaries (Figure 4, shown on the Hydrography Map). The pie chart Zoning Districts as Percent of Floodplain Area indicates the districts that lie within the floodplain boundaries (Figure 5, Hydrography Map).

Although most of the municipalities meet at least the minimum standards required by the National Flood Insurance Program, this study was not able to determine how

many structures are currently in the floodplain. However, an informal field estimate was made by observing the distance and elevation of buildings relative to the creek waters. This evaluation shows that at least some structures have been constructed in the floodplain.

#### **2.4.2. Wetlands**

Wetlands are typically areas where groundwater reaches the surface or the land is covered by water. They are commonly called marshes, bogs or swamps, and occur along Neshaminy Creek, its tributaries and ponds. Some wetlands, however, occur in upland areas where groundwater or runoff collects. Wetlands are extremely important to the health of rivers and streams. The values they provide can be grouped into the following categories:

- **Water Quality:** Wetlands act as filters, removing metals, nutrients, toxins, sediment and other pollutants.
- **Fish and Wildlife Habitat:** Hundreds of species of birds, mammals, fish, reptiles, amphibians and invertebrates depend on wetlands for nesting areas, food and cover.
- **Flood Control:** Wetlands act as sponges. They store flood water and decrease the amount and speed of flood flow, thereby reducing downstream property damage.
- **Groundwater Discharge and Recharge:** Wetlands sometimes exist in places where groundwater flows to the surface to recharge streams. Where this occurs, wetlands help maintain stream flow during dry periods. In other wetlands, the flow can be in the opposite direction, replenishing groundwater supplies.
- **Streambank Erosion Control:** Wetlands plants decrease the rate of streambank erosion by anchoring the soil with their roots. They also slow water, thus decreasing its ability to erode, and help collect sediment that can stabilize or rebuild streambanks.
- **Recreation and Aesthetic Value:** Wetlands are often beautiful areas frequented by outdoor enthusiasts, hunters and fishermen.

The National Wetlands Inventory Map indicates the estimated locations of protected wetlands, most of which can be found around the creek and its tributaries. Note: NWI maps are produced by the U.S. Fish and Wildlife Service only by aerial flyovers. The data has not been confirmed by field surveys and so it may be incomplete or inaccurate in some instances. A formal delineation will be necessary to confirm the existing data for an individual parcel prior to any proposed disturbances.

There are several classifications of wetlands along the water courses in the study area. These have been classified according to the National Wetlands Inventory, prepared by the United States Department of the Interior, Fish and Wildlife Service. They are:

- **Lacustrine ecological system, limnetic, open water, subclass: diked (L1OWHh).**  
This classification is the Pine Run Reservoir only.

- **Palustrine, which is found along all creeks and is the largest classification. Its characteristics are:**
  - open water, intermittently exposed/permanent (POWZ)
  - forested, broadleaved, deciduous, temporary (PFO1A)
  - emergent, narrow-leaved, persistent, temporary (PEM5A)
  - combination forested and emergent, or scrub/shrub (P FO1 or SS A)  
EM5
  - Flat, semi-permanent (PFLF)
- **Riverine:**
  - lower perennial, open water, permanent (R2OWH)
  - lower perennial, emergent, non-persistent, seasonal (R2EM2C)

The wetlands generally lie in the floodplain areas and consist of fairly typical wetlands for the Piedmont region. In the recent heavy rain events, residents downstream on the Neshaminy Creek experienced extensive flooding. While this was mostly due to the unprecedented volume of rain, some of the runoff may be attributed to the decrease in the area of floodplains or wetlands. Factors include new construction, which creates more impervious surfaces, increasing the volume of runoff; removal of vegetation in floodplains; obstruction of the water flow to floodplains and wetlands; and destruction of wetlands and adjacent areas.

#### **2.5. Dams and Reservoirs**

There are several dams in the study area: Pine Run Dam, one unnamed dam on Country Club Creek/Trout Run, Reed Dam on the Neshaminy Creek, one unnamed dam on the north branch of the Neshaminy, and the ruins of Mill Run Dam on the Neshaminy.

Pine Run Reservoir and dam (PA 616) were built by the Neshaminy Valley Resources Authority in the early 1970's to control floodwaters. The dam is currently managed by Bucks County Emergency Management Agency (BCEMA). The seven-to eight hundred acre corridor immediately surrounding the stream is also county property.

According to Charles H. Steinbach, Director of General Services for BCEMA, the reservoir is only for flood control purposes. The county does not encourage public access to the reservoir because of the potential for dam failure. More people on the reservoir would lead to greater erosion problems, which could lead to dam failure. The county currently has no intention of adding any recreation amenities or providing access to the reservoir or dam area. The only potential recreation opportunity may be limited walking trails in the wooded areas. However, although public access must be restricted, BCEMA's practices provide the creek and riparian buffer with protection by barring development and preserving vegetation.

Outside of the study area, the county has proposed a plan to build Dark Hollow Dam in Warwick Township. This dam is the subject of much opposition from local residents and approval is uncertain. At a public meeting on December 4, 1996, the

county commissioners decided to request an Environmental Impact Statement (EIS) from the Natural Resources Conservation Service. Discussion on dam approval will continue after the findings from the EIS have been reported.

The effects of the dam would be felt well outside of the structure's immediate area. According to Dennis Livrone of Bucks County Planning Commission, at full capacity during major floods the flood pool for the Dark Hollow Dam would back up to Castle Valley at the Lower State Road bridge, by Route 611. This is the case for the dry dam that is currently under consideration; the effects of other alternatives will be studied by the EIS.

## **2.6. Soils**

Soils are classified according to their suitability for supporting various uses, including the growth of plant life, degree of erosion or drainage, and development of wildlife habitat or scenic vegetation.

Many of the soils bordering the creek are hydric soils, shown on the Hydric Soils Map. Hydric soils are important because they often indicate the presence of wetlands, which serve to maintain ecosystem quality. They play a significant role in flood control and water quality. GIS maps were created for this RCP for the largest group of hydric soils, which includes those classified as Doylestown and Bowmansville soils. This type of soil is one of the three prime indicators of wetlands areas, which are regulated by the U.S. Army Corps of Engineers under the Clean Water Act. Floodplain soils were not mapped. Because soil maps are not yet available in digital form, the hydric soils were digitized manually. The data was digitized from uncorrected aerial photographs, producing a slight error in boundary matching with other GIS data.

The Bowmansville soils consist of deep, poorly drained silt loams on the floodplains. The surface is usually level and the soils have a high water capacity, creating only slight runoff and erosion hazards. The Doylestown series consists of deep, poorly drained silt loams with slow to medium runoff and a slight to moderate erosion hazard. The surface layer is ponded at times and water is near or on the surface during wet seasons.

## **2.7. Geology**

Geological formations determine the topography of the landscape, the soils and groundwater supply. The study area is underlain by the Lockatong and Stockton Formations, which were formed in the Triassic period (see Geology Map, Figure 6). A fault line which runs east to west, north of the main branch of Neshaminy Creek, appears to be the dividing line for the two formations. The fault crosses the creek at several points around Chalfont and New Britain boroughs. The Stockton Formation, which is in the northeastern portion of the study area, generally provides a reliable water supply. The Lockatong Formation is found in the southwest area and, because of its fractures and low permeability rate, is known to be a cause for septic system failure.

## 2.8. Threatened and Endangered Species

Several endangered, threatened or rare plant species are cited for the Neshaminy Creek watershed in the Doylestown and Buckingham USGS Quads. Information is from the files of the Flora of Pennsylvania Project, Morris Arboretum of the University of Pennsylvania. The Pennsylvania Natural Diversity Inventory (PNDI) corroborates the data. The following list, obtained from PNDI, is only a historic record and has not been confirmed in the field. The status dates indicate the most recent sighting of each species, where this information was available. For their protection, the species locations are not mapped.

### *Hydrocotyl umbellata*

(water pennywort)

1 mile SE of Chalfont  
Doylestown

status: extirpated  
1908  
1899

### *Lycopodium appressum*

(southern Bog clubmoss)

Chalfont, near Pine Run

status: threatened  
1986

### *Aster dumosus* (aster)

NW of Neshaminy

status: undetermined

### *Aster solidagineus*

(narrow-leaved white-topped aster)

Doylestown

status: endangered

The only historic occurrence of an endangered animal is the bog turtle (*Clemmys muhlenbergii*). According to PNDI, it was last collected in 1946 in the Edison area, but has not been seen since. The other areas along the Neshaminy Creek have not been investigated for the bog turtle.

## 2.9. Cultural and Historical Resources

The federal government defines a significant cultural or historical resource by four main criteria. It is an area, site, or object that (a) is associated with events that have shaped history; (b) is associated with a significant person; (c) possesses "distinctive characteristics" from a certain type of construction or time period, is the work of a master, or possesses high artistic value; or (d) has yielded or is likely to yield information. These criteria are used to evaluate the eligibility of a resource for inclusion in the National Register of Historic Places.

A number of culturally and historically significant sites are located in the study area. (See Table 1, Land Use of Cultural Resources, which notes the type of resource and land use in that location.) They include historic districts, farms, mansions and houses, museums, municipal buildings, parks and covered bridges. This information was obtained from the Comprehensive Bucks County Historic



Resource Survey (BCHRS) performed by Heritage Conservancy. The survey was conducted from July 1988 to July 1990. As part of the survey methodology, each site was photographed, the pre-1940 resources on the property described, and the site mapped on appropriate Bucks County municipal tax maps. One of the purposes of this survey was to identify historically significant buildings eligible for listing on the National Register.

In addition to the properties in the study area identified by Heritage Conservancy through the BCHR survey, twenty-four resources have been determined to be eligible for listing in the National Register. These are located in Chalfont Borough, Doylestown Township and New Britain Borough, and were identified as part of the 1994 U.S. Route 202 Section 700 Historic Resources Inventory and Determination of Eligibility. Seven of these resources are within the study area.

Historic and culturally significant resources on parcels completely or partially within the delineated areas of the four municipalities are shown on the Cultural Resources and Recreation Map. A complete list of properties is included in the Appendix.

#### **2.10. Recreational Resources**

The study area is rich in outdoor recreational resources of many kinds. The Land Use Map shows the general land areas that are currently in recreational use, and the Cultural and Recreational Resources Map shows the individual sites and their locations. Parks and fields are found in widely scattered locations in the boroughs and the township. Pedestrian and bicycle paths exist in places along the Neshaminy Creek, and are planned for other areas. Bucks County has proposed an extensive system of linked parks, but at the time of writing, much of this is yet to be implemented.

Residents enjoy using the creek and its surroundings for many different kinds of recreation. They especially prize the scenic beauty of the area, and reported in the survey that they often use the creek corridor for nature observation and bird watching. The Neshaminy is regularly used for fishing and hiking. It is also used, though less frequently, for swimming, canoeing, kayaking and other kinds of boating, and for hunting or trapping. Water levels vary throughout the year, especially on the main branch of the Neshaminy, thus limiting swimming, boating and kayaking opportunities.

Local fishermen report anecdotally that fish stocks in the Neshaminy have improved tremendously in recent years. Small mouth bass have returned in large numbers over the past decade. In addition, the river is stocked yearly with trout. In years of exceptionally high rainfall, as occurred last year, fishing improves. During years of typical rainfall, however, the fish population is quickly depleted.

#### **2.11. Local Ordinances**

Currently, all four municipalities within the study area have adopted regulations for stormwater and floodplain management. The Neshaminy Creek Watershed Stormwater Management Plan has been adopted by Bucks County and Montgomery County for the Neshaminy Basin. In some cases, even though the plan has been adopted by the municipalities, the provisions have not been implemented or enforced.

Doylestown Township has generally excellent protective ordinances; however, Doylestown Borough, Chalfont Borough and New Britain Borough do not have comprehensive regulations for protection of natural resources and are lacking site capability standards for construction.

#### **2.12. Population Profile, 1980-1990**

The entire Central Bucks County region is growing at a rapid rate. According to data from the Bucks County Planning Commission, total population increased over 17% between the censuses of 1980 and 1990, resulting in a 1990 population of 187,991. Population projections show the population increasing steadily through 2020. The number of housing units has also increased, growing 32% from 51,354 to 67,863 while average household size declined.

Chalfont Borough has seen a 9% increase in population, from 2,802 to 3,069, and a 27% increase in housing units. With a land area of only 1.65 square miles, Chalfont is expected to draw an additional 611 residents by the year 2010.\*

Doylestown Borough has seen a small drop in population (1.63%) to 8,575 but a moderate increase in population density and the number of housing units, as the average household size has fallen. The population density rose from 3,773 inhabitants per sq. mi. to 3,898/sq. mi., and housing units rose from 3,633 to 4,100. Bucks County Planning Commission has projected a slow increase in population through 2020 instead of a continuation of the decrease that occurred between 1980 and 1990.

Doylestown Township, by far the largest in area of the four municipalities, has seen a rate of population increase greater than that of the county as a whole. Between 1980 and 1990, population grew by 22.7%, to 14,510, and housing units grew by 33%, to 4,857. As in the other municipalities, these trends are expected to continue on an upswing; population projections show a total of 23,970 residents by the year 2010.

New Britain Borough, like Doylestown Borough, saw a slight drop in population between the 1980 and 1990 censuses. The 1990 population was 2,174, down from 2,519, while the number of housing units was at 828, up 16%. Projections show an expected increase to a total population of 3,090 residents by the year 2010.

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\* Data in this section assumes the middle-range projection of the Bucks County Planning Commission's demographic projections. Bucks County Continuum, pp. 76-85.

Just as important in a broad-based project like this one are the larger trends occurring throughout Bucks County. Because the Neshaminy Creek runs through many municipalities in two counties, it is affected by the greater trends, even though population may have decreased slightly along a few miles of its length. It is important to maintain enough recreation area for residents and to protect the natural resources in each municipality from extensive use by the growing numbers of people.

### **2.13. Visual Analysis**

The primary purpose of the visual analysis was to observe firsthand the land use and general management practices of the riparian corridor, the 50- to 75-foot wide strip on each side of the stream or creek corridor. These observations were compared to the resource data and mapped.

Initial information from the resource inventory indicated that flooding, erosion and siltation are primary concerns. Two general recommendations were developed from this information: to preserve or restore vegetation, and to institute more sensitive land development practices. The visual analysis corroborated the existing data and therefore focused the recommendations.

The Visual Analysis Map was developed from field observations along the Neshaminy Creek and its three tributaries. A canoe trip the length of the creek in the study area took place in September 1996. The intent of the trip was to evaluate the resources from the creek itself rather than the land. An aerial fly-over took place in early spring 1996 prior to vegetation leafing out. The remaining visual observations were made on foot along the creek and, when not accessible, by windshield surveys. Photographs were taken of significant sites for further study and inclusion in the map.

Common observations included: erosion, siltation, unvegetated banks, and extensive non-native species. The nature of the area immediately surrounding the creek is critical to its health. A vegetated, natural corridor will protect the creek, while a denuded corridor will permit pollutants and other materials to flow into the water. Anthropogenic impacts (man-made impacts) such as dumping, non-point pollution, visible pipes, and culverts were also noted during the field surveys.

Positive attributes within the corridor included scenic views, existing recreation access points, and potential future access points for fishing or for hiking trails. The areas are numbered and indicated on the Visual Analysis Map and on Table 2, Recommendations Based upon Visual Analysis and Land Use, with brief descriptions and recommendations.

### **Visual Observations**

The Neshaminy Creek and its three tributaries in the study area are generally in good natural condition and exhibit several distinct physical qualities. General qualities observed along their length are:

- Vegetation anchors the creek banks, preventing soil erosion and siltation.
- Vegetation protects the banks from solar radiation by providing shade, which maintains water temperature.
- Banks are stable and stream bottoms display the underlying soil topographies and geology.
- Base flow water levels are relatively stable, supporting fish habitat in many areas of the creek.
- Water appearance is aesthetically pleasing.

#### 2.13.1. Western Study Border to Forest Park

This segment of the Neshaminy Creek has been extensively altered from its natural state, and exhibits the symptoms of development and industrialization. There are numerous anthropogenic impacts such as dumping, poor land management practices, road runoff, and inadequate sedimentation and erosion controls during construction, resulting in siltation, scouring, slumping of banks and flooding. Discharge pipes, some of an undetermined discharge type, were observed along the creek banks.

Several bridges cross the creek at main roads, namely Route 202, Bristol Road, Upper State Road and Almshouse Road, with road runoff discharging into the creek. Some commercial land uses are located along the creeks, which in places have impacted the aesthetics of the creek, most noticeably in Chalfont Borough where the creek intersects Route 202.

The Forest Park Water Treatment plant withdraws water from the Neshaminy and from the Pine Run tributary, and discharges into Pine Run. An inflatable dam is located just north of the plant.

Like the other segments in the study area, the creek in this section runs through residential areas where the native vegetation -- woody plants and aquatic vegetation -- is picturesque. Small surface water pools are home to spatterdock and other aquatic vegetation. Typical native tree stands can be found overlooking the creek. On the north-facing slopes are hemlocks. River birch, pin oak, elm, tulip, red maple and sycamore are the predominant tree types in most other areas.

Some property owners have mowed the vegetation down to the water's edge and piled organic debris in the floodplain area. Purple loosestrife, an invasive wetland species, has taken hold in several areas, choking out the native flora. If left as is, it will overtake the wetland vegetation and a monoculture of loosestrife will develop quickly.

#### 2.13.2. Bridge Point to Castle Valley

This three to four mile stretch of the Neshaminy has no significant disturbances. The land uses are primarily residential, with the exception of a few industrial or commercial uses which appeared to have little impact when viewed from the creek corridor. The beauty of the creek can best be appreciated from the water. The banks

are almost entirely forested, thus enhancing the water quality and biodiversity. Several great blue herons were spotted the evening of the canoe trip.

Portions of this stream are "braided," incorporating more than one channel with an associated series of islands and multiple streambanks. There are riffles, pools and point bars in the creek channel which act as energy absorbers. The underlying sedimentary geology of the steeper stream banks is exposed, adding to scenic quality.

The only recreational land use that may pose a problem to development of a creek front trail is the gun club, whose property has water frontage. Loud gunshots can be heard for some distance beyond the area, especially on weekends. Warning signs are posted around the area in both directions.

This segment could be navigable by canoe with occasional points where the canoe may have to be carried past rocks or shallow water. Fishermen were seen along this segment. Hiking trails were not evident, but could be developed in the future if carefully planned to avoid the occasional steep slopes.

One unofficial access point exists at a dirt pull-off on Lower State Road, directly below the former mill dam. It is heavily used, as evidenced by the worn parking area and beaten path to the water. Bridge Point Park has another access point with formal parking and an easy walk down to the creek.

### 2.13.3. Route 611 to the Eastern Border of Doylestown Township

This segment of the creek has the most varied conditions, with many anthropogenic impacts. Public creek access points are lacking. On the banks behind the Kings Plaza Shopping Center noise from Route 611 and litter make the area unattractive. The creek is difficult to access on the southern side despite the ease of parking in the shopping center lot. There are wooded, steep slopes with a faint trail probably made by fishermen, as evidenced by the fishing debris left behind.

The trail, which is elevated above the creek, presents a picturesque view down into the creek bed and through the large old trees. There are numerous islands, riffles and pools with small drainage channels entering from the steep slopes. A few invasive, non-native species are present among the native beech, birch, tulip and pin oaks. Poison ivy, a native, covers the ground in a dense mat, which may deter people from going down to the water's edge. Access is difficult until the creek passes The Greens, a townhouse complex, where the creek is at its closest point to Almshouse Road.

As the creek meanders towards Almshouse Road, there are more anthropogenic impacts including dumping of large articles of debris such as tires, mattresses and old appliances. The Kings Plaza Wastewater Treatment Plant, which discharges into the Neshaminy Creek, is odoriferous, and the discharge pipe is aesthetically unappealing, creating a break in the forest buffer. This is true even though the plant follows standard treatment practices. The rip-rap and gabions along the creek bank,

and the invasive multiflora rose, make it difficult to continue on the path through the steep woods.

There is heavy siltation along the creek banks downstream of the discharge pipe. There is another area further downstream with an opening in the forest buffer for a stormwater discharge pipe. Invasive multiflora rose has also grown rampant.

The only sanitary sewer outfall pipe discharging directly in the Neshaminy Creek study area is at Kings Plaza. According to Glen Argu of the Bucks County Water and Sewer Authority (BCWSA), some of the flow at this plant will be diverted to the Green Street plant. At the time of this writing, the project is out to bid, and construction could be completed by December 1997. This may alleviate some of Green Street's excessive flows to the Neshaminy and the resulting erosion and siltation.

At The Greens complex some residents appear to have altered the creek bank. It is unclear whether this is on the township-owned portion of the creek. Some of the native understory plants along the banks have been removed and replaced with non-native plants, many of which are inappropriate for floodplain soils and shade, and are invasive in nature, such as yews and ivy. Paths have been created for individual access down to the water's edge. These appear to be in the Doylestown Township easement along the Neshaminy Creek.

A macadam walk with a pedestrian bridge connects the two residential developments, and appeared to be a well-used recreational trail. In this vicinity the bank is less steep and the floodplain fairly flat and wide. It appears healthy and contains an appropriate number of cut banks and point bars (normal deposition points), relative to its meandering. There are only a few riffles. After this point, the south bank again becomes very steep and is heavily wooded with limited development.

The floodplain on the north side of the Neshaminy Creek is wider and has dense woody vegetation, with the exception of the few residential properties close to the Route 611 bridge. Minor dumping of organic debris was observed on one property. It was difficult to determine the amount of vegetated buffer along the creek bank due to a lack of access.

The north side is primarily farmland between the creek and Pebble Hill Road and contains one of the larger farms in the vicinity. A few large farms abut the creek, with mixed agricultural uses from crop farming to cattle and sheep grazing.

Many ducks were lingering around a muddy, non-vegetated pond which flows into a tributary of the Neshaminy. Some of the farmed fields come close to the stream bank and there is evidence of siltation. At the same time, this agrarian landscape is attractive and adds to the aesthetics of the area.

#### **2.13.4. Pine Run**

This is one of the most scenic tributaries, with minimal impact from adjacent land uses, as it is buffered by woods. However, this area has been invaded by non-native species, which look attractive but do not provide the soil stabilization or wildlife habitat provided by native plants. The several hundred acres surrounding Pine Run Reservoir are publicly owned and are managed by Bucks County Department of Parks and Recreation. There are no formal paths or access points directing the public to the reservoir area. At this time, the county intends to leave the area untouched for flood control purposes, and the area around Old Dublin Pike and Saw Mill Road is known to flood frequently. There is a visually unattractive pump sub-station located at the intersection (Point 56 on the Visual Analysis Map).

#### **2.13.5. Cooks Run**

A sewer right-of-way runs adjacent to an extensive portion of Cooks Run. Moderate quantities of natural debris such as fallen tree limbs were evident, along with smaller quantities of man-made debris such as metal pieces and concrete chunks. Siltation is evident in areas where the stream makes several turns. Moderate to heavy vegetation is present, with the exception of several areas which are mowed by homeowners. The stream's low volume restricts recreational opportunities for fishing and boating in this area.

The BCWSA Harvey Avenue Wastewater Treatment plant discharges into the Cooks Run Creek. There are no future plans to expand the plant's capacity. Water quality monitoring is not currently performed.

#### **2.13.6. Country Club Creek**

The majority of this small creek flows through the Doylestown Country Club property. Several small ponds, one with aeration jets, are found. The creek banks are almost entirely denuded of natural vegetation, which has been replaced by closely mowed grass. The exception is a small group of large trees with the natural layers intact behind the maintenance area. In several spots the banks are crumbling or slumping into the water because of the lack of vegetation anchoring the soil. The erosion is apparent and unattractive.

Country Club personnel were queried about their golf course fertilizer and herbicide regimes, and they routinely apply significant quantities and kinds of chemicals. While water quality tests have not been performed for this phase of the RCP, it is likely that these chemicals may contribute to diminished water quality downstream.

John Miziker, the golf course superintendent, said that the chemicals being used are: on the greens, fungicide and PREM; on the fairway, fungicide and pre- and post-emergent herbicide; on the roughs, herbicide. Round-up, the least harmful of the herbicides, is occasionally used on larger areas. Grey water from the nearby wastewater treatment plant is used to water the greens (personal communication with J. Miziker, Jan. 23, 1997).

After leaving the golf course, the creek flows past the Green Street Wastewater treatment plant, through residential communities and wooded areas along the Route 611 commercial corridor, and eventually into the Neshaminy creek east of Bridge Point. It was difficult to access this area due to road construction and bridge repair at the time of field work.

BCWSA confirmed that there are several sewer outfall pipes in the study area. The Green Street plant discharges into Country Club Creek. It is expected that the increased flow of the proposed project will have impacts on both Country Club Creek and Neshaminy Creek.

#### **2.14. Water Quality**

Water quality analysis was not a part of this RCP, which focuses more specifically on issues affecting the land in the creek corridor. However, one of the goals that developed from the RCP is to institute water quality study. Because specific study is recommended, a brief overview of the factors affecting water quality is outlined below.

A review of recent past studies indicates that action should be taken to preserve and improve the creek's waters. Some information about water quality is documented in the "Neshaminy Creek Watershed Storm Management Plan" produced by the Bucks County Planning Commission and Bucks County Conservation District. The plan, published in 1992, reports that water quality within the Neshaminy Creek watershed is severely degraded, with a high nutrient level and erosion and sedimentation problems. The Watershed Storm Management Plan provides a very general description of the Neshaminy's water quality, and should be useful in identifying gaps in water quality data.

Water quality degradation is caused by many factors, which can be grouped into three types of pollution: point source pollution, non-point source pollution, and thermal pollution. Point source pollution comes from an identifiable location, or "point." It can include pollutants from industry and manufacturing processes, and landfills and other waste sites. Non-point source (NPS) pollution does not come from a single source or location but from many scattered sources. NPS pollution includes chemicals, nutrients, organic matter, and sediment. These come from agricultural fields (pesticides, fertilizers, sediment) and livestock pastures (manure, sediment), construction sites (sediment, chemicals), and urban areas such as roads, parking lots, and roofs (tar, oil, automobile chemicals).

Thermal pollution is caused by excessive warming of creek waters when shade trees are removed, and affects the dissolved oxygen capacity of the water. When creek waters become too warm, fish and other aquatic creatures are unable to obtain the oxygen they need.

Water quality degradation can cause serious damage to the ecology of the creek and can inhibit community use of the waters. Excessive pollution leads to:



- loss of aquatic habitat and fish and wildlife food sources
- loss of fishing, boating, and other recreational opportunities
- reduced aesthetic value and potential loss of property value
- risk of illness from contaminated waters and/or drinking water

#### **2.14.1. The Neshaminy Creek Watershed**

The Neshaminy Creek watershed is the land area from which water drains into the Neshaminy Creek. Instead of acting as a boundary, the creek forms the center of the watershed. Runoff from rain storms and melting snow travels over the land on its way to the creek.

Because of the way runoff travels through the watershed, it picks up non-point source pollutants that can become very harmful. The water carries with it pollutants gathered during its overland flow, which spill into the Neshaminy Creek drainage basin. It can collect pollutants from miles away. The Neshaminy Creek watershed covers about 232 square miles. It includes 26 municipalities in Bucks County and 7 in Montgomery County.

The finding of the Watershed Storm Management Plan that water quality in the Neshaminy Creek watershed is degraded reflects practices and processes taking place in both counties. Although the creekside vegetative buffer is relatively intact within the study area, damage may be caused by excessive pollution loads that can't be filtered by the current buffer width, or by pollution entering upstream from the study area, or both.

Corrective measures must take into account the fact that the creek may be degraded by practices occurring outside of the immediate vicinity of the creek. The Goals and Objectives section of this report suggests some solutions that are watershed based and some that are creek-specific. In particular, erosion and sedimentation controls and regulatory ordinances (Goals 3 and 4) can effectively improve water quality by being instituted on a watershed-wide basis.

#### **2.15. Summary of Resource Inventory and Analysis**

The analysis was performed, in part, on a GIS system by overlaying several coverages of individual resources to develop composite maps showing multiple resources. The analysis maps reveal opportunities for developing recommendations for BMPs and recreation. Some of the more critical issues relate to the management practices along the floodplain and to recreation access.

- As noted in the survey findings, the majority of respondents endorsed preservation of open space and scenic character. They want to contribute their support to conservation efforts and local oversight.
- Most of the current land uses and zoning designations are compatible with the natural and cultural resources, especially along the floodplain.

- From field observation, only specific areas of high traffic along roadways have degraded resources.
- Most of the creek is "hidden" from public view except at brief intervals as it passes near roadways. Few recreation and parking access points exist.
- There is an existing, wooded riparian buffer along much of the creek-- about 46% of the land along the floodplain. This is a very positive indication for protection of the significant resources which are congregated along the floodplain area, particularly hydric soils and steep slopes.
- The most serious threat to the health and beauty of the Neshaminy Creek is improper stormwater management in nearby housing developments. The construction of additional houses, roads, and driveways increases the amount of impervious surfaces and directs the flow of water to the creek.

Recommendations specific to each issue or stream corridor section follow. More general recommendations, with suggestions for implementation procedures, are developed in Section 5 below.

### 3.0. RESOURCE RECOMMENDATIONS

This summary of recommendations addresses each specific resource detailed above in Section 2, Resource Inventory and Analysis (pages 5-18). In this way, management plans can be developed towards resources that may be of particular concern.

Following the summary are the goals and objectives pertaining to the entire creek corridor. They are based on observed problems and the potential for problems within the stream corridor, specifically the need for more recreational opportunities, public education, and best management practices and regulations to protect and restore the creek.

#### Topography

- Minimize damage from construction activities.
- Preserve vegetation to prevent erosion and mitigate flooding, and maintain scenic views.

#### Land Use

- Preserve vegetative coverage.
- Encourage land owners to practice conservation management on their property.

#### Hydrography

##### Floodplains

- Use appropriate development and planning techniques to limit or prevent the creation of impervious surfaces.

##### Wetlands

- Preserve wetlands to prevent excessive runoff and erosion, to recharge groundwater reserves, to minimize water pollution, and to preserve animal habitat.

##### Dams and Reservoirs

- Coordinate any proposed changes in land use by Pine Run with BCEMA and county agencies.

##### Soils

- Preserve hydric soils to control flooding, prevent erosions and siltation, and generally maintain local stream and ecological health.

##### Geology

- Develop land use policies regulating impervious surfaces and the protection of wetlands and floodplains.
- Identify and protect groundwater recharge areas.

##### Threatened and Endangered Species

- Preserve wetland habitats of endangered and threatened species.

#### Cultural and Historical Resources

- Continue to pursue the registration process for federal and state recognition of important local sites.

#### Recreational Resources

- Improve public access to the creek.
- Protect vegetation, habitat, and water quality by public education campaigns.

#### Local Ordinances

- Promote implementation of the existing Neshaminy Creek Watershed Stormwater Management Plan.
- Develop additional ordinances in those municipalities where they are lacking, particularly site capability standards, and wetlands and steep slope ordinances.

#### Population Profile, 1980-1990

- Protect the Neshaminy Creek through appropriate ordinances and education efforts.
- Expand recreational areas and improve creek access points to serve an increasing population.

#### Visual Observations

##### Western Study Border to Forest Park

- Advise property owners and residents about appropriate stream bank management, including restricted mowing.
- Institute erosion management plantings along roads.

##### Bridge Point to Castle Valley

Develop boat ramps and/or hiking trails, and parking areas, to improve access.

- One unofficial access point exists at a dirt pull-off on Lower State Road, directly below the former mill dam. Improve existing informal access point to minimize erosion, and provide a small boat launch and parking area.
- At Bridge Point Park, there is already formal parking and easy access to the creek. Develop a boat ramp and minor amenities to make it more accessible.

##### Route 611 to Eastern Border of Doylestown Township

- Develop recreation access and trails near The Greens residential development.
- Consider establishing public access points and creating a trail along the wide, accessible floodplain next to the agricultural fields. It may be possible for the township to purchase a conservation easement from the farms, or to encourage sale of the development rights through Bucks County Agricultural Land Preservation Board.
- Institute better management practices in the agricultural fields to protect the water from siltation and chemical contamination.
- Advise business owners, farmers, and residents about appropriate management, especially to decrease dumping.

- Manage construction around the Green Street sewage treatment plant to minimize damage.

#### Pine Run

- Defer recreational development as long as Bucks County Emergency Management Agency restricts access to the reservoir area.
- Study the feasibility of establishing an access point to the preserve at the pump sub-station.

#### Cooks Run

- Advise property owners and residents about appropriate stream bank management, including restricted mowing.
- Develop walking/hiking paths, with access at New Britain Nature Preserve.

#### Country Club Creek

- Discuss with Doylestown Country Club the benefits of better management practices, particularly restricted mowing and creation of riparian buffers along the stream banks throughout the golf course.
- Discuss possible reduction in fertilizer and herbicide use, or other alternatives.

#### **4.0. PUBLIC COMMENT**

As part of the rivers conservation planning process, two preliminary versions of the plan and management options report were presented at open meetings to the general public, to representatives of each study area municipality, and to representatives of local public agencies. Their comments were incorporated into the final plan. Minutes from the public presentation of the draft RCP are attached in the Appendix.

Few substantive comments were received from members of the public attending the first presentation workshop. Residents were generally concerned that the creek should remain in its natural state as far as possible, and remain available for public enjoyment. Representatives from several interested groups submitted written comments for inclusion into the study. These are included in the Appendix. A summary of their concerns is outlined below.

P. D. Price, president of Friends of the Pine Run, expressed concern over any potential public access to the area surrounding Pine Run Reservoir. The area, currently restricted for flood control uses, is an undeveloped natural area that could otherwise be considered for recreational use. Ms. Price supports BCEMA's policy of restricting the area and would like to see it become a permanent flora and fauna conservation reserve.

Dr. Ann F. Rhoads, Director of the Pennsylvania Flora Project at the Morris Arboretum of the University of Pennsylvania, also responded to the draft RCP. She was concerned that water quality and quantity assessment be addressed in order to have a complete and accurate picture of the health of the Neshaminy Creek. The effects of reduced groundwater and increased runoff and sewage discharge should be evaluated in tandem with the characteristics discussed in the RCP. In addition, she had several comments regarding specific sites with invasive plant species that are harmful to the health of the creek corridor, sewage discharge, floodplains and zoning.

James Burke, Chief Landscape Architect for the Bucks County Department of Parks and Recreation asked that the discussion of the link park plan and several park sites in or near the study area be expanded. He also commented on specific areas of land use.

Chalfont, Doylestown and New Britain Boroughs reviewed the preliminary plan and reported that they were satisfied with the plan's analysis and conclusions. Doylestown Township requested several amendments to the preliminary plan. Members of the EAC responded to the preliminary findings report and management options report with these comments:

- The consultant, Heritage Conservancy, should review existing natural resources ordinances and suggest modifications. Doylestown Township sought

suggestions as to how the four municipalities might coordinate their policies to develop more consistent standards.

- The proposal for the recreational greenway and riparian buffer should be expanded and implementation procedures addressed.
- Heritage Conservancy should clarify management priorities for each individual municipality rather than for the study area as a whole.

## 5.0. GOALS AND OBJECTIVES

The goals and objectives presented in this section are based on the data obtained from public agencies and the interviews and visual analysis performed for this project. They describe a general plan of action to implement the goals based on the findings. There are six main goals that each municipality should consider implementing to a greater or lesser degree, depending on their current level of commitment. The six goals are:

- development of a recreational and protective greenway;
- development of education programs;
- implementation of best management practices to control erosion and streambank sedimentation;
- review and revision of environmental and land development ordinances and regulations;
- resource cleanup; and
- design and implementation of a water quality study.

General recommendations pertinent to all four municipalities are described first, at length. Then specific recommendations are listed for Chalfont Borough, Doylestown Borough, Doylestown Township and New Britain Borough. These are in addition to the general recommendations; the reader should refer back to the goals to develop a complete implementation plan.

These options need not be implemented in the order listed. The priority list has been developed to point out where the municipalities should focus their efforts. Many of the options are interrelated, and officials will find that a single program can bring multiple results. Public cleanup efforts and education programs can be designed together, and the development of a recreational greenway complements the adoption of a riparian buffer ordinance.

Inter-municipal cooperation should be pursued for most of these recommendations. Pooling resources and information will ease the process of implementing new strategies, and at the same time make them that much more effective. It can also be more cost-effective to share staff time and develop a single greenway plan, for instance, rather than four separate ones.



## **5.1. Goal 1. Develop a Greenway for Recreation and Creek Protection**

**Develop a greenway park that highlights significant features and allows the public to enjoy and help protect the resources.**

The establishment of a continuous recreational greenway along the Neshaminy Creek, one which is properly maintained throughout the municipalities, should be a high priority. Increasing population in the boroughs and the township means there is a greater need for recreational opportunities. Not only will a greenway provide a valuable public resource, it can also serve to increase awareness of the need for open space and environmental conservation. Informational campaigns conducted for the greenway project can inspire community residents to become involved in conservation activities. Education projects can be developed on site to help promote awareness and stewardship. Some possible projects include nature trails, signs, kiosks, and printed materials, as well as periodic outdoor classes. Education programs are discussed below in Goal 2.

The 1986 Bucks County Park and Recreation Plan recommends the creation of an extensive link park or greenway connecting 23 sites around Bucks County. The parks are divided into three categories according to priority of implementation. Sections of the link park are planned for the Neshaminy Creek around Doylestown Township. These portions are second priority parks. Doylestown Township has supported implementation of the greenway concept in its 1992 Park, Recreation and Open Space Plan. Other sections of third priority are planned for the Neshaminy and the Pine Run tributary in Chalfont and New Britain Boroughs. Another third priority link is planned to eventually connect the study area to Peace Valley and Lake Galena farther north.

The impact of the proposed Route 202 bypass on the greenway will need further investigation, depending on the option PennDOT chooses to develop.

**Objective 1. Establish cooperation among the boroughs and the township, to create a successful greenway and a consistent and coherent greenway development plan for the Neshaminy Creek.**

Coordination with municipalities outside of, but adjacent to, the study area is also an important factor. The municipalities should focus on developing a continuous greenway trail system and standardized ordinances.

**Objective 2. Develop or amend municipal ordinances to protect the greenway and the creek corridor.**

Especially important will be:

- erosion and sedimentation controls,
- development restrictions in floodplains,
- specific landscape recommendations that encourage protection and restoration of native plants, and
- development of a riparian buffer zone. This will help to strengthen the greenway proposal and shape new development around the creek.

To help ensure that these measures are effective and to gain cooperation from builders and developers, supervisory boards, zoning officials, and planning commission members should give priority attention to stream corridor projects. Subdivision ordinances may need revisions to require more sensitive construction and siting practices, including density considerations. Developers might also be asked to contribute land, or provide a fee in lieu of land, toward development of the greenway trail or riparian buffer. Outreach efforts to developers should include education about the value of local resources and the municipality's plans for their preservation and use. Ordinances are discussed further in Goal 4, below.

**Objective 3. Improve public access to the Neshaminy.**

Recreational opportunities are the primary tourist attraction in Bucks County. The tourism industry depends on preserving natural, scenic and cultural resources and providing access to these resources.

Despite being well-loved by nearby residents, the Neshaminy Creek and its tributaries are not well-publicized resources in the four municipalities. This may be due in part to the limited access to all areas of the Neshaminy Creek for boating, walking, fishing and other activities. Residents with frontage along the study corridor report that they like the area especially for its recreational value. (See survey findings, pp. 3-4.)

Paths are nonexistent through some of the most beautiful portions of the creek corridor. Fishermen appear to be the primary users of the creek, although the survey indicated that people do use the creek for nature walks. Undeveloped land and other municipal open spaces along the corridor should be connected by a greenway to create a continuous corridor of trails.

In particular, official public access points and controlled site recreation would encourage the public to enjoy the Neshaminy Creek in a sensitive manner. Greater control of recreation activities can be achieved by designing a greenway that will guide park users through areas that can support a higher level of use.

Some specific tasks related to the greenway will need to be undertaken after adoption of the Neshaminy Creek Rivers Conservation Plan. These include: a greenway feasibility study (required by PA DCNR), delineation of the precise locations of proposed trails or amenities, acquisition of land and/or negotiation of any necessary easements through private property, and development of a municipal trail system linking to the existing and proposed county-wide trail system. In Doylestown Borough and Doylestown Township, land or easements within the stream corridor must be acquired. In Chalfont and New Britain, much of the land is already under public ownership, making up several public parks and the New Britain Nature Preserve. For these, design will be particularly important, so as not to disrupt the sites' current use. The municipalities may wish to consider having developers dedicate to public ownership or public use a percentage of new developments in open space that fronts the creek or its tributaries.

The trail system, including overlooks, access points and amenities like boat launches, should be designed to make best use of the riparian corridor and cause minimal impact to the natural environment. Finally, education programs associated with the stream corridor, including signage, should be developed to educate visitors to the greenway.

Several potential access points have been identified. These are indicated on the Visual Analysis Map. The criteria used to identify suitable access points include:

Land ownership. The site should be owned by a public agency or a community service-oriented private organization such as a nature preserve or youth center.

Safety. The site should provide off-road access to the stream, away from traffic hazards, and sufficient parking for automobiles and bicycles.

Slope degree. Slopes should be gentle enough to allow easy pedestrian access and to minimize erosion. Access for individuals with disabilities may have to be addressed under the Americans with Disabilities Act.

Zoning. Public access points should not conflict with the zoned land use.

In Chalfont, two sites appear to have potential for public access. The first is along the west bank by the Volunteer Fire Department (Site 19, Visual Analysis Map), and the second is an open space to the south (Site 29). In Doylestown Borough there is an open ponded area alongside the creek (Site 36). The Bucks County Water and Sewer Authority in Doylestown Township (Site 56) is also an ideal site for stream access. Further field surveys may yield additional sites suitable for public access to the creek.

In New Britain Borough, the New Britain Nature Preserve appears to be a good site for access. Because much of the stream corridor in New Britain Borough is managed by the Bucks County Emergency Management Agency, access points will have to be approved by the Agency. A professional consultant or municipal staff member should be retained to determine the exact locations of new access points in all municipalities, and the appropriate layout of greenway trails. Other likely participants in greenway design and implementation will include various public agencies, citizen's committees and EACs, non-profit organizations, local businesses, and interested individuals.

Each municipality will need to decide whether outright purchase of property or conservation easements are more appropriate for public rights of way within their boundaries. The county itself may also buy additional park acreage along stream corridors to implement portions of its link park plan. The greenway trail system and creek access points should be managed by a public entity to resolve liability and access issues.

**Objective 4. Once the greenway land is acquired, develop promotional efforts to improve awareness of the area's natural resources and to encourage stewardship. The support of property owners is very important to this effort. Where the municipalities do not own the land within the stream corridor, property owners will be asked to support and maintain the riparian buffer. Supportive businesses and residents can also help promote awareness and stewardship, and may contribute time or services. Education and outreach programs should take advantage of this.**

## **The Municipalities**

### **Chalfont Borough**

Despite Chalfont's small size, it is endowed with significant waterfront and stream area along the Neshaminy Creek and its tributaries. Chalfont is trying to take advantage of these natural resources by developing trails along the creek. Property acquisition and greenway development are currently in the planning stages.

Chalfont has had the foresight to purchase land along the Neshaminy Creek for public recreation purposes. Much of the land is publicly owned with good access and high rates of use. These areas can add to a greenway park and trail system. The parks with waterfront access include: Oxbow Park, Krupp Park, Kelly Park and Lenape Trail Park.

A priority for Chalfont Borough is to acquire property along the creek to protect the Neshaminy and to provide recreation. A 20-acre parcel along the creek across from Oxbow Park and next to an unnamed park is currently vacant. It is owned by Imperial Nursery, which has been unable to develop the property because it is prohibitively expensive to acquire the grade crossing over the railroad from SEPTA. The only access to the property is from Sunset Avenue; it is bounded on the other side by the Neshaminy Creek.

Chalfont Borough would like to acquire this property for open space along the creek. Dedicating the property to recreational and open space use and taking it out of an industrial district will provide further protection for the Neshaminy Creek. Development of the parcel as a recreational site is expected to occur in stages. Ultimately the borough would like to build a bridge to the property from Oxbow Park, thus eliminating the need for a grade crossing from Sunset Avenue.

### **Doylestown Borough**

Doylestown Borough is an old and established municipality with a stable population. There is little development occurring, and no major subdivisions planned that would upset the management of the Neshaminy Creek.

Because only small portions of tributary creeks are located in Doylestown Borough, development of a recreational greenway will be a lower priority. Much of the waterfront land is privately owned and access is restricted. Greenway development in this area should be for natural resource protection rather than public recreation.

Creating a riparian buffer and improving stream corridor management will help protect the tributaries and the main branch of the Neshaminy Creek. The headwaters of Cooks Run should be protected, since any damage that occurs in this area will affect other areas as the water travels downstream.

#### **Doylestown Township**

Doylestown Township should seek the cooperation of Doylestown Country Club when planning the greenway and buffer. The country club is a recreational amenity that could complement a greenway along Country Club Creek, while offering its members access to nature trails. The club should be approached to see if it is willing to serve as a public access point to the creek.

#### **New Britain Borough**

Only a small portion of the main branch of the Neshaminy Creek runs through New Britain Borough. Because this land is in public ownership, at the New Britain Nature Preserve, developing greenway trails should be relatively easy. The Cooks Run tributary also flows through the borough after leaving Doylestown Township. New Britain should concentrate on preserving its natural resources by creating a riparian buffer along the Neshaminy and Cooks Run, and developing a public recreation way along the Neshaminy. A third-priority section of Bucks County's proposed greenway coincides with the streamfront area of the Neshaminy in New Britain, and the municipality may wish to design the greenway in tandem with the Bucks County Planning Commission.

New Britain has an ideal opportunity to create joint programs with the New Britain Nature Preserve, located on the Neshaminy Creek. The Nature Preserve can direct educational programs about the riparian corridor and the Neshaminy Creek watershed. In addition, it may be able to serve as a public access point, or an access point could be located just adjacent to the nature preserve.

## **5.2. Goal 2. Establish Environmental Education Programs**

**Inform residents, business owners, recreational users, and others about the need for protection.**

Widespread and increased awareness is one of the most important factors contributing to the success of natural resource protection programs. In order to be successful, education programs must include homeowners and residents, commercial land owners, developers, public agencies, and youth.

**Objective 1. Develop land management practices tailored to the users of the land.** A set of general practices should be developed for all. However, more specific residential and agricultural recommendations should be developed for those particular users.

**Objective 2. Coordinate education programs among the municipalities and school districts.**

On-site programs especially should be coordinated so that the municipalities can share staff and create a suitable design for signs and other educational materials.

For school programs, a "watershed curriculum" could draw on local creeks for field work opportunities, in conformance with middle and high school requirements. Doylestown Township and Chalfont, Doylestown and New Britain Boroughs could follow the lead of other towns and townships by pursuing a curriculum that uses the Neshaminy Creek and its tributaries for comprehensive environmental education. Field trips to healthy and degraded sites along the creek can augment existing environmental education courses. The experience of other environmental programs, such as household recycling, suggests that children will teach their parents the lessons they learned in class.

At the county level, information on implementing environmental curricula is available from the Bucks County Conservation District Environmental Education Committee, a consortium of public and private agencies who meet regularly to discuss county-wide environmental education programs.

Most local nature centers and watershed associations have established programs from which to draw. These include Honey Hollow Environmental Center in Solebury and Peace Valley Park in New Britain. Area schools can also develop independent programs.

**Objective 3. Hold frequent and well-advertised public meetings.**

Articles and editorials in local newspapers should be developed with an eye towards public relations and public stewardship of the Neshaminy Creek stream corridor.

**Objective 4. Pursue ongoing as well as periodic educational efforts.**

In addition to school curricula, ongoing efforts might include a regular environmental newsletter or a column in local newspapers. Educational signs

posted along the greenway trails or the riparian buffer can enhance the experience of using the greenway while providing information about ecology, natural history, and conservation. Stewardship or stream watch programs staffed by volunteers could survey or maintain stream corridor vegetation. Education programs involving local youths could accomplish the same objective. Members of the Doylestown Garden Club, the Doylestown Nature Club, and other interested organizations can be approached to assist in conservation education efforts.

Periodic efforts might include occasional seminars on environmental topics, including practices like lawn care and composting. An educational packet can be sent to new homeowners or businesses to encourage proper practices from the start. The packet might include brochures and fact sheets on environmentally sound lawn care practices, alternatives to pesticides and herbicides which run off into the water, regulations regarding protection of riparian buffers, maintenance of vegetation along the creek corridor and placement of structures within the buffer.

Municipal parks could serve as models demonstrating land management practices which protect natural resources. The parks could distribute informational pamphlets relating to river conservation and best management practices, or set up kiosks displaying the information.

Education leads to increased awareness and awareness leads to increased involvement. Municipalities can take advantage of the interest raised through education programs by developing subsequent stewardship programs. With coordination and oversight from public agencies, land owners and other residents can be encouraged to adopt some of the tasks recommended by the Rivers Conservation Plan.

## **The Municipalities**

### **Chalfont Borough, Doylestown Township, Doylestown Borough and New Britain Borough**

Outreach efforts should be made to improve the practices of businesses and industry along the Route 202 and Route 611 corridors. The extensive development and amount of impervious surfaces has caused erosion damage. This can be mitigated somewhat by plantings that will slow water runoff, and by building retention basins and swales and other stormwater management techniques. Educational outreach should encourage stewardship of the Neshaminy Creek corridor. A combination of education and legal requirements is the best approach to achieving the cooperation of businesses in the area of the creek.

### **5.3. Goal 3. Institute Best Management Practices to Control Erosion**

**Minimize damaging activities and development that affect the Neshaminy stream corridor and watershed.**

**A best management practice (BMP) is a structural or non-structural method applied to control or prevent a specific pollution problem, most often stormwater damage and restoration of degraded areas. Structural BMPs utilize state-of-the-art construction techniques and materials and are considered the most environmentally sensitive choices among potential practices. They can also involve bioengineering approaches, including porous paving, and manufactured products made from natural materials such as coconut fiber "Biologs" or willow reeds. Another type of BMP is the creation of wetlands to control stormwater runoff. Using state-of-the-art construction techniques and choosing the best available materials help to insure the longevity and suitability of any long-term public project. Non-structural BMPs include zoning and subdivision restrictions that limit certain types of development to allow natural processes to control runoff or preserve riparian buffer zones. Subdivision restrictions may also require the use of structural BMPs in certain situations.**

**Establishing a riparian buffer zone and resource-protective ordinances, along with public education, are critical to this initiative. Erosion control and streambank stabilization will require legal protections and up-to-date municipal ordinances to control damaging activity. These are developed in detail in Goal 4.**

**The management of land in the river corridor is presently quite good. There are only a few spots, in private ownership, that would benefit from better stewardship efforts. As expected, the natural resources are more degraded along the more developed areas such as Route 202, Route 611, and at points where wastewater or stormwater pipes routinely discharge into the creeks. BMPs should be implemented in these locations to protect the natural integrity of the Neshaminy Creek and to improve it for recreation.**

**Streambank stabilization will require public education to curb damaging practices (Goal 2) and the development of a management approach to make best use of labor and volunteer support. Local residents and businesses should be educated as to how they can help the township protect the Neshaminy. Streambank stabilization will also demand physical commitments to repair any unnaturally eroded areas of the bank and restore native plants, and to staff clean-up and maintenance efforts. The public can be involved in stabilization efforts by volunteering, under supervision, to conduct inventories or plant vegetation. Public resource cleanup is discussed in Goal 5.**

#### **Protecting the Neshaminy Creek from erosion and sedimentation may require:**

- problem area research**
- ordinance research**
- development or strengthening of ordinances**



- development or utilization of existing educational materials
- cooperation and commitment from the parties involved based on land use or land ownership
- building support
- voluntary and/or paid labor
- acquisition of materials

**Objective 1. Establish a 75-foot wide riparian buffer along the Neshaminy Creek and its tributaries to protect natural and scenic values.**

A riparian buffer, as defined by the U.S. Forest Service, is an area of vegetation along a stream or river that naturally provides protection from erosion, sedimentation and pollution. Plants and trees reduce surface runoff and absorb nutrients and chemicals to minimize degradation of the water and stream ecology. A riparian buffer employs natural materials in sensitive locations, allowing the plant processes to filter out pollution and silt before they reach the water.

Although the buffer now physically exists in many places along the creek, an ordinance defining the zone of buffer protection is necessary. This will ensure the protection of existing vegetation and promote planting in areas where the stream corridor is sparsely covered. Moreover, the establishment of a model ordinance may encourage other municipalities to pass similar protections. Recommended ordinances are presented in Goal 4.

The minimum width of a riparian buffer zone is determined by three criteria: flooding propensity, based on soil type and ground cover; the area measured in distance from the stream bank to pollutant source areas; and slope. If developing a strict buffer width based on streambank conditions, it should be recalculated from time to time as ground cover changes. However, in recognition of the difficulty of calculating specific buffers, especially over a considerable distance, and of the changing nature of the buffer over time, the Forest Service has established a recommendation for a wooded buffer with a standard width of 75 feet. This width is generally accepted as providing a sufficient level of protection.

**Objective 2. Use native plants and biotechnical BMPs for soil stabilization and aesthetics.**

- Any commercial, municipal or residential property owners who have disturbed the seventy-five foot riparian buffer should be encouraged to re-plant with only native plants in disturbed areas. This will prevent the non-native species from colonizing and further upsetting the natural ecology and beauty which is unique to the Neshaminy Creek. Larger trees, which have the most stabilizing effect on creek banks, should not be removed.
- Points along the creek and its tributaries that are subject to erosion should be stabilized with biotechnical materials and planted with native plant species. Biotechnical methods should be encouraged, since synthetic materials tend to detract from the aesthetics of the natural environment. Biotechnical mitigation

practices should be employed in lieu of conventional engineering approaches (e.g., gabions, rip-rap) as much as possible.

Other BMPs will be useful in the Neshaminy Creek study area. Buffering roadways with native vegetation will help reduce runoff. Municipalities should develop ordinances regulating impervious surfaces and steep slope development where they do not already have such ordinances. Landowners should be encouraged, through education efforts, to maintain an unmowed strip at the streamside edge of their property, the wider the better. This strip will also help to keep geese away from the creek. Some planting of vegetation or stabilization efforts may be done with volunteer labor on cleanup days.

**Objective 3. Develop methods of decreasing impervious surfaces to increase infiltration and minimize runoff to the creek and its tributaries.**

- Use porous paving for parking lots located within a defined distance of wetlands and floodplains.
- Reduce impervious surfaces in residential developments. For example, certain roads or driveways might be narrower (consult the Fire Department to develop appropriate specifications).

**Objective 4. Protect the creek corridor using planning tools and legal mechanisms.**

- Identify and map the significant resources deserving protection in municipal comprehensive plans.
- Institute performance zoning dependent upon the capacity and sensitivity of the land, especially adjacent to the creek and its tributaries.
- Institute or strengthen zoning regulations to prevent erosion, sedimentation, and stormwater runoff.
- Develop a steep slope ordinance that regulates development on slopes greater than fifteen percent along streams and creeks.
- Develop a wetland and floodplain buffer ordinance that extends protection an additional 100 feet beyond the currently regulated boundaries of these significant resources. (See Appendix for model ordinances recommending this type of buffer.)

**Objective 5. Educate and provide technical advice to property owners and residents along the creek about proper stewardship practices in the seventy-five foot riparian buffer.**

- Prepare brochures that describe techniques that property owners and residents can use to improve the creek for the benefit of everyone.
- Offer educational seminars on native plant species or practices such as composting organic debris.
- Establish a series of nature articles in local publications.
- Discourage the use of chemicals, especially herbicides, insecticides, fertilizers and other lawn or garden chemicals that could wash into the watershed.
- Store all chemicals away from the flow line of water on a site.

- Discourage removal of existing native vegetation along the creek or in the floodplain.
- Discourage alteration of the land along the floodplain.
- Limit the number and type of buildings and animals permitted in the floodplain and wetlands.
- Discourage dumping of any organic or other debris in the floodplain, wetland or riparian buffer.

**Objective 6. Work with local businesses along the creek to create uniform management practices.**

- Encourage businesses to adopt stewardship practices similar to those practiced by individual owners and residents.
- Encourage businesses to preserve the environment while maintaining property values, by practicing proper land management.

**Objective 7. Encourage municipal, county, state, and government agencies to protect the Neshaminy Creek and its watershed by following environmentally sensitive practices throughout their jurisdictions.**

- Decrease use of road salts.
- Decrease or eliminate use of pesticides or herbicides along roads.
- Plant vegetation that requires less mowing.
- Alter current mowing practices to end mowing near waterways and allow for a vegetative creek buffer.
- Plant native species to help avoid the invasion of non-natives.
- Construct stormwater systems for roads so they do not discharge directly into creeks.

## **The Municipalities**

### **Chalfont Borough**

The Neshaminy Creek along Route 202 in Chalfont Borough appears to have the most intensive runoff and erosion problems because of the large amount of impervious surfaces and the number of industrial uses. An old and established town, Chalfont is very densely developed. It should monitor the Route 202 area of the creek to keep it from deteriorating, and educate the property owners about best management practices to maintain the health of the resources. These activities will coincide with the efforts made to update the comprehensive plan and zoning ordinances.

### **Doylestown Borough**

The headwaters of Cooks Run are located in Doylestown Borough. The surrounding area is occupied by an industrial district which appears to be for relatively light uses. The industrial site and neighboring commercial areas are heavily paved, with little porous area to absorb stormwater. The borough may wish to monitor water quality downstream from these areas. Because of the developed

nature of lands along Cooks Run and Country Club Creek, erosion control should be a high priority.

During future upgrades to the Green Street Wastewater Treatment Plant, attention should be paid to the restoration of disturbed land by using native plants. This can help to maintain the sense of place that often is lost after reconstruction in natural areas.

#### **Doylestown Township**

The country club should be requested to adopt Best Management Practices for erosion, sediment, and chemical control measures. Environmentally sensitive mowing practices along the creek will help filter the runoff from the golf course and club grounds, thus minimizing the nutrient and sediment load in the creek and watershed. Vegetation should be reestablished along the banks. A riparian buffer, even a narrow one, will help to repair the eroded banks and maintain the health of the creek.

The USDA Natural Resources Conservation Services and Bucks County Conservation District can work with the grounds maintenance staff on appropriate erosion and sedimentation control techniques to manage Country Club Creek. NRCS is expected to announce a Wetlands Reserve Program by April 1997, which will provide funding to address riparian area filter planting in priority areas.

#### **5.4. Goal 4. Update Existing Ordinances and Develop New Ordinances.**

**Institute natural resource protection ordinances to enhance, restore, and maintain Neshaminy Creek.**

While it is not the purpose of this plan to develop new or amended ordinances and regulations for the municipalities, existing ordinances have been reviewed and analyzed in order to suggest natural resource regulations that may be more protective of the Neshaminy Creek than those currently in place.

A variety of regulatory ordinances can be employed to protect the Neshaminy Creek. These include ordinances for: erosion and sedimentation, floodplain, open space, riparian buffers, site capability standards, steep slopes, stormwater, streams and watercourses, wetlands, and woodlands.

The four municipalities will need to discuss their individual existing ordinances and implementation and enforcement policies. Currently, all four have floodplain and stormwater ordinances in place; only Doylestown Township requires site capability calculations for proposed development. None have stream corridor buffer regulations. Other ordinances vary by municipality and are discussed briefly below in the individual municipality sections.

Ordinance development may require consideration of the following:

- hiring of a planning consultant
- acquisition of labor and funding (for research)
- coordination with officials within the municipality and with officials from other municipalities in the Rivers Conservation Plan area
- working with Bucks County Planning Commission on available model ordinances

**Objective 1. Create a stream corridor buffer zone along Neshaminy Creek.**

A stream corridor buffer zone is a zone of protection around the creek. Special regulations apply within the zone that preserve and enhance the vegetative buffer and place limits on development and land use.

The creation of a stream corridor buffer along all areas of the stream, those within the recreational greenway and outside of it, is a critical step. The zoning is designed to regulate activity in the stream corridor in order to protect the stream and its watershed, including plant ecosystems and wildlife habitat. Restrictions on development should be based on site capability limits that consider steep slopes and the site's potential for erosion and siltation. Residential landowners should be requested to preserve stream corridor vegetation, especially trees. Stabilization or restoration practices should employ natural or biotechnical materials, for both ecological and aesthetic reasons.

Buffer ordinances can be of three types: fixed width, a separate zoning district, or an overlay district. This RCP recommends that the buffer, no matter which type is

chosen, be a minimum of 75 feet, which should be adjusted outward if areas outside of the 75-foot zone require additional protection. A seventy-five foot wide buffer is the current Forest Service standard. In places where the 100 year floodplain is greater than 75 feet, the floodplain area should constitute the buffer.

The Montgomery County Planning Commission, in its 1995 publication "Riparian Corridor Conservation District," a model ordinance, recommends a riparian buffer district based on Forest Service calculations. The conservation district protects watercourses and their adjacent lands by establishing a zoning overlay. (Another good reference document is the Stony Brook-Millstone Watershed Association's "Basis and Background for the Stream Corridor Protection Ordinance" which details support for buffers in the state of New Jersey.)

The Montgomery County riparian corridor district is made up of 2 zones. Zone One has a minimum width of 25 feet, beginning at the edge of the water. The width may be increased if steep slopes (greater than 25%) exist within 25 feet of the water. Zone Two consists of a minimum width of 50 feet, beginning at the outside edge of Zone One. The second zone permits a greater number of uses than the first, including agriculture, timber harvesting and recreational uses. The municipalities together should determine an acceptable range of uses and develop a riparian buffer ordinance, so that it is consistent throughout the study area.

**Objective 2. Develop other specific natural resource ordinances and strengthen existing ordinances to provide additional protection to the creek corridor.** The boroughs should also expand their wetlands ordinances. To expand protection, institute a buffer ordinance that extends the regulated area an additional number of feet (100 feet is suggested) beyond wetland and floodplain boundaries. Erosion and sedimentation controls should be updated and strengthened if necessary. These will contribute to protection of the watershed area and not just the creek corridor.

Model ordinances have been developed by the Bucks County Planning Commission that reflect typical ordinances in municipalities throughout the county ("Model Natural Resource Protection Standards"). These may be used to amend existing ordinances and extend protection for natural features. The Lower Delaware Wild and Scenic River Task Force is also in the process of preparing models for stormwater management and erosion and sediment control.

**Objective 3. Share information on local comprehensive plans and land use regulations, and coordinate ordinances among the four study area municipalities to yield the most coherent conservation plan and better protect the creek as a whole.** Consider how local regulations dovetail or diverge with regard to the municipalities' common concern, the Neshaminy Creek. Development plans affecting the creek should be reviewed. Discussion can help to identify shared visions, concerns, and areas of potential conflict. The ultimate objective of this inter-municipal coordination would be to establish plans or land use controls with similar strategies and goals.

Following the adoption of municipal resolutions supporting the Neshaminy Creek Rivers Conservation Plan, each municipality should consider designating a representative to coordinate implementation of the plan's goals and objectives. These representatives should arrange an introductory meeting to share information, especially regarding ordinances and model regulations, and to coordinate their actions with regard to the Neshaminy Creek stream corridor and watershed.

Coordination of municipal actions in the study area with those outside the area is necessary to ensure consistent standards and practices, and to share information about creek-related issues. The effectiveness of enforcement and land development review will depend on the commitment of each municipality. Municipal EACs can assist planning staff in designing the best package of ordinances and subdivision regulations.

## **The Municipalities**

### **Chalfont Borough**

Chalfont's ordinances and subdivision regulations should be updated. The borough is planning to update its comprehensive plan in 1997. This is a good opportunity to also update the zoning codes and develop ordinances and subdivision regulations that will provide the best protection for natural and cultural resources.

Chalfont should continue to concentrate on updating and expanding its existing ordinances to provide better protection for the Neshaminy Creek and related natural resources. Update of the ordinances should be coordinated with the comprehensive plan to reflect Chalfont's priorities for the future.

Chalfont currently has floodplain, stormwater, and erosion ordinances in place. These may need to be revised during the comprehensive plan update to provide the best protection for the creek. As with the other municipalities, Chalfont does not have a riparian buffer ordinance and should consider instituting one. The steep slopes on the southern border along New Britain Township also should be protected by a steep slope ordinance.

Because the borough has already planned for the updating of the comprehensive plan, funds have been earmarked in the upcoming year's budget. Possible approaches to expanding the task include the use of voluntary labor to perform research.

### **Doylestown Borough**

In addition to instituting a riparian buffer ordinance, Doylestown Borough should develop site capability restrictions. Steep slope ordinances are unnecessary because there are no steep slopes within the riparian corridor in the borough. The existing floodplain, stormwater and open space zoning should be kept up to date to provide the best available protection.

### **Doylestown Township**

Doylestown Township's existing ordinances are quite comprehensive and provide a significant level of protection for its natural resources. This includes site capability standards (§ 175-27), which apply to streams and watercourses; floodplains and floodplain soils; lakes, ponds and wetlands; and open space. The Doylestown Township Zoning Ordinance also restricts activities that cause soil erosion and stream sedimentation by regulating earth moving and construction, and has established standards to protect steep slopes, woodland areas and trees. Floodplain districts based on federal maps have been designated and development restrictions instituted. Requirements for percentage of open space, percentage of impervious surfaces, density, and structure size have been developed for each zoning district.

As described earlier in the Goals section for all the municipalities, Doylestown Township should consider instituting a riparian buffer ordinance to expand protection for the Neshaminy Creek stream corridor and greenway.

Because the township already has many protective ordinances in place, its priorities should lie in public environmental education and in creating and maintaining the greenway park recommended in this report. The most pressing issues of river protection policy and development have, for the most part, been addressed.

Because of Doylestown Township's ongoing commitment to keeping their ordinances complete and up to date, the Neshaminy Creek and the township's other natural resources already benefit from a high level of protection. Further commitment will be needed to monitor the existing ordinances and develop management practices to ensure that the Neshaminy is afforded the best available protection. Specific ordinances should be designed for the riparian buffer; a model has been developed by the Montgomery County Planning Commission's in the document "Riparian Corridor Conservation District, 1995."

It might also be useful for the township to share its expertise with the other municipalities as they update their own statutes for the Neshaminy. By instituting consistent ordinances the length of the creek, protection will be improved generally, and industry and developers will have a clear understanding of applicable requirements.

### **New Britain Borough**

Erosion, steep slope, floodplain, wetlands and stormwater ordinances are in place. These are rather vague (Zoning Code, § 608(I)) and may need to be strengthened in order to provide the best protection for the riparian buffer and the creek. As in Chalfont and Doylestown Boroughs, New Britain does not have a riparian buffer or site capability standards, which should be adopted as soon as feasible.



## **5.5. Goal 5. Clean Up the Creek Corridor**

The creek corridor inventory revealed that areas within the corridor are not only eroded but are also littered with trash. The trash is immediately visible both from the creek banks and from the water. It affects the scenic appeal of the Neshaminy Creek and can lessen the experience of being in a natural place. The scattered trash should be picked up on a regular basis, and prevention measures put in place.

This issue can be addressed by developing a strong public education program and cracking down on illegal dumping. Encouraging residents to use the creek responsibly, and feel a sense of ownership, will help to prevent careless littering. Placing "No Littering" signs alongside educational signs and kiosks will remind visitors to respect the Neshaminy Creek. Dumping of large items may have to be addressed by fines or other regulatory measures.

### **Objective 1. Improve the overall quality of the creek corridor.**

There are two reasons for routine cleanups and maintenance: aesthetic appeal and resource improvement. A clean creek corridor is aesthetically pleasing, scenic and attractive, and is more inviting to recreational users than a creek that is uncared for. Resource health, in particular streambank stability and water quality, can be expected to improve. The issue of water quality needs further study, but protective ordinances and regular maintenance are the most important requirements for clean stream waters. It should be kept in mind that maintenance of resource health takes precedence over aesthetic demands.

### **Objective 2. Use cleanup activities to aid educational efforts; use education programs to promote cleanup.**

Cleanup efforts involve volunteers and develop public commitment, thus stimulating future stream conservation efforts. Promotional and educational projects should be undertaken before cleanup events take place. However, these events usually have an additive effect as they educate the participants and disseminate information out into the community. Regular cleanup or planting events may raise public awareness and citizen involvement. A public relations effort will be very important to the success of such activities.

The municipalities should sponsor public river corridor cleanup days, which also provide an opportunity for education. After the more extensive initial cleanups, maintenance could be provided by regular (perhaps yearly) cleanup days, or by offering sponsorships similar to roadside maintenance programs. Businesses along Route 202 should be encouraged to sponsor creek or watershed cleanup activities in their area. The business community can spearhead the regular clean-ups by donating advertising and employee time. Special events should be planned to involve large numbers of volunteers, targeting all residents and land owners in the area.

Volunteer programs should involve an element of education, so that volunteers know what plants species are appropriate to the area and what healthy native vegetation looks like. School-based education programs should be developed, in cooperation with the RCP municipalities, school officials, and non-profit educational organizations.

Cleanup efforts should also encourage joint voluntary public-private efforts for trash removal (e.g., municipalities and landowners may work together, or commercial property owners may work with residents).

## **The Municipalities**

### **Chalfont Borough and Doylestown Township**

The commercial corridor and traffic along Route 202 have done some damage, mostly aesthetic, where the road crosses the Neshaminy Creek in Chalfont. The same is true for the Route 611 corridor near Almshouse Road in Doylestown. The creek banks behind the Kings Plaza shopping center are littered with debris. Some of the debris is such large items as tires, mattresses and old appliances; volunteers may not be sufficient to clean up this area. These parts of the corridor should be cleaned up and the local businesses encouraged to maintain the creek and the vegetation. This may mean volunteer stewardship, or it may mean simply reporting debris to the municipality when it appears.

## **5.6. Goal 6. Implement Water Quality Study**

Water quality is an integral part of a healthy and useful creek. Water quality study was not part of the Neshaminy Creek River Conservation Plan process, however, several recent studies have been performed by other agencies. These indicate that some action is warranted to improve the quality of the creek waters. Protection of the land along the stream corridor, by establishing regulatory requirements and creating a riparian buffer, will also help to improve and maintain the health of the water.

The study area municipalities should contact Bucks County Planning Commission and other agencies involved in water quality monitoring to determine if any monitoring is currently being performed. These agencies include EPA, PaDEP, Bucks County Board of Health, Bucks County Water and Sewer Authority, non-profit river and watershed organizations, area colleges such as Delaware Valley College or Widener University, and Philadelphia Suburban Water Company.

**Objective 1. Obtain long-term data for the Neshaminy Creek to augment existing data and ongoing monitoring efforts.**

Water quality monitoring should study the amount and effect of chemical and biological contaminants. Chemical contaminants include point and non-point source (NPS) pollution from agricultural, residential, municipal and industrial sources. In some cases the originators of non-point source pollution cannot be identified, but the pollution can be monitored as stormwater runoff. Biological contaminants include nutrient runoff from fertilizers, releases from sewage treatment plants, and coliform counts from livestock manure, wild deer and geese. Sedimentation from eroded creek banks and siltation from agricultural fields also contributes to degradation of water quality.

It is important for the water quality study to incorporate an appropriate area within the watershed and not simply within the RCP study area, because contaminants can travel a considerable distance. Cooperation among the Neshaminy Creek watershed municipalities and water quality agencies will help develop the most comprehensive information.

**Objective 2. Pinpoint and address sources of pollution.**

Non-point sources of pollution are likely to be the more harmful threat than point sources because they are much more widespread and difficult to identify. The pollutants tend to accumulate on land areas such as roads and agricultural fields, and travel into bodies of water as runoff during storms or snowmelt.

The composition of total pollution loads should be identified to determine whether they arise from a point source or non-point source. Once this is done, solutions can be devised to target the sources or types of pollution and minimize damage.

Several general locations within the RCP study area are likely to be sources of contaminated runoff. Shopping centers with large parking lots, such as Doylestown Center and the Kings Plaza shopping center, and residential clusters have a high percentage of paved and impervious surfaces that collect automobile contaminants. Residential developments usually have stormwater management systems, but those adjacent to the Neshaminy and its tributaries probably have a moderate amount of runoff that drains directly to the creek without being filtered. These locations should be appraised to see if they are contributing significant levels of pollutants.

A common and effective solution to non-point source pollution is to maintain vegetative cover. The plants filter pollutants and sediment in runoff and trap them before they can contaminate the water. The measures recommended in Goals 1, 3, and 4 address pollution control. Strong protective ordinances, especially restrictions on steep slope development and development of a 75-foot buffer, will help keep runoff contamination to a minimum. By dedicating creek-side land to a greenway with passive recreation, more damaging uses are limited. In addition, educational efforts (Goal 2) can have some effect on the amount of pollution being generated in the first place.

## **5.7. Funding**

Numerous sources of federal and state funding are available for environmental improvement projects. Some of those sources are discussed here to serve as a beginning point for implementing the goals in this report. Both public and private fund sources should be pursued.

Funds may be available from the Bucks County open space program if the proposed \$59 million referendum is authorized as expected in May 1997. Twenty million dollars will be distributed to townships and boroughs for natural areas acquisition and other local projects. County funds will be available for the purchase of local park land and open space areas. A community open space plan will be required for funding consideration, and the municipality must provide matching funds of twenty-five percent.

**Developing a Greenway:** Implementation grants may be available for land acquisition from the Pennsylvania Department of Conservation and Natural Resources (DCNR). The Pennsylvania Environmental Council (PEC) also provides funding to Environmental Advisory Councils for implementation projects.

**Education Programs:** Funding will be needed for program materials, including design and labor. Educational grants may be available to municipal EACs from the Pennsylvania Environmental Council. EPA Section 104(B)(3) grants award funds for projects with a public participation component. Funding may also be available from Pennsylvania DEP Environmental Education Grants.

Clean up efforts that involve public education can also pursue these grants.

**Instituting Best Management Practices:** USDA Natural Resources Conservation Services (NRCS) and Bucks County Conservation District (BCCD) provide matching funds for joint efforts.

NRCS is expected to announce a Wetlands Reserve Program by April 1997, which will provide funding to address riparian area filter planting in priority areas.

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# Gateway Study

Prepared for the  
**Gateway Committee**  
Doylestown Borough and Doylestown Township

November 2000

Prepared by:

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P.O. Box 904  
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**Boucher & James, Inc.**  
CONSULTING ENGINEERS



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## Introduction

The Gateway Committee was established in 1999 to study the “gateways” to the community and to offer suggestions and implementation guidelines for improvement to these “gateways”. The committee was formed as a joint committee of both Doylestown Borough and Doylestown Township, the two municipalities that together are known as the community of Doylestown. The members of the Gateway Committee were appointed by Doylestown Borough Council and the Doylestown Township Board of Supervisors and include the managers of each municipality, a representative of Doylestown Borough Council, a representative of the Doylestown Revitalization Board and representatives of the Doylestown Township Planning Commission. The Gateway Committee meetings have been open to the public and many business and property owners have attended the meetings and have become a part of the process of defining the “vision” for each of the corridors studied.

This “Gateway Study” is intended to serve as design standards and a guideline for the future development and redevelopment of the gateway corridors into and out of the Doylestown Community. Each of the corridors studied will be included as a separate section of this booklet. The sections devoted to each gateway corridor are intended to be independent of each other so that the recommendations for the initial gateway corridors may be adopted and become a part of the official “Gateway Study”, while other sections are still being studied and analyzed.

The “Gateway Study” has been formatted so that it can be used as a “tool” and by both the Borough and the Township. Each gateway corridor will be presented in a separate section of the study with a plan, sketches and a narrative to convey the proposed improvements to the corridor in both a visual and written form. At the end of the study, appendices have been provided to illustrate the proposed improvements in the form of design/construction details. The intent is for the Borough and the Township to use this study as the basis for making decisions about the design of the streetscape and parking areas associated with current and future subdivision and land development projects and determining which improvements should be required as a part of these projects along the gateway corridors. In addition, the Borough and the Township will also be able to use this study to target specific improvement projects that may be implemented with public funding.

This document is intended to be a working document that will be used by both Doylestown Borough and Doylestown Township in conjunction with their Comprehensive Plans, their Zoning Ordinances, their Subdivision and Land Development Ordinances, the Bike and Hike Plan and other planning documents.

### Section I North Main Street

The North Main Street Corridor is the northern most entrance or gateway into the community of Doylestown. This corridor starts at the intersection of North Main Street and Swamp Road, which is known as “Cross Keys”, and continues south on North Main Street to the intersection of North Main Street and Fonthill Drive.

The corridor functions as a major gateway into and out of the Community of Doylestown and would presently be described as a “utilitarian” roadway. The corridor functions as nothing more than a roadway to convey the traffic. The roadway is lined with concrete curbing, paved parking areas, signs, commercial buildings in various stages of use and non-use, utility poles and overhead utility lines, and cobra head lighting. Many of the improvements made to this corridor in the past were traffic-oriented and many of the business and commercial properties along the corridor lost parts of their “front yards” as the roadway was widened to accommodate the increased traffic. As a result, parking seems to be at a premium along the corridor and many businesses have found creative ways to fit in “a few extra parking spaces”.

The Gateway Committee held a series of public meetings with interested business and property owners in the vicinity of the corridor. With their input, the committee has developed a series of recommendations for this corridor. The intent is to reclaim the corridor from the traffic-oriented corridor that it is today and create the potential for a true “gateway” to the community. The recommendations include strategies to create a streetscape that would identify it as one of the “gateways” and as such, would serve to create a transition from the truly traffic-oriented corridor to the north to the more pedestrian-oriented “center of town” to the south.

These recommendations include the addition of sidewalks and pedestrian pathways, additional street trees, specific soil mixes to sustain the street trees in an urban environment, transitional lighting and the relocation and/or reconfiguration of some parking areas. The intent is to reclaim some of the odd bits of remnant paving that have remained in the corridor and use the opportunity to create more opportunities for safe and comfortable pedestrian traffic along the corridor. The goal is to create more opportunities to “green up” the corridor and develop a vocabulary of improvements such as the repetition of street trees and transitional lighting that will serve to identify this as one of the Gateway Corridors, much as the center of Doylestown has come to be identified by its signature light standards and hanging baskets.

The Gateway Committee has identified building setbacks and signage as features that are integral to the streetscape and therefore, would affect the character of the North Main Street Corridor. Building setbacks could control how close (and sometimes how far) proposed buildings could be located to the street right-of-way and would dictate the width and feel of the corridor. Sign regulations could

limit the types, locations, sizes and materials of proposed signs. However, since both Doylestown Borough and Doylestown Township each have adopted Zoning Ordinances that specifically address building setbacks and signage issues, the Committee has recommended that these issues should be the responsibility of the individual municipalities.



## Before

View looking North on North Main Street toward Buckman's and the Cross Keys Intersection of Route 611 and Route 313.

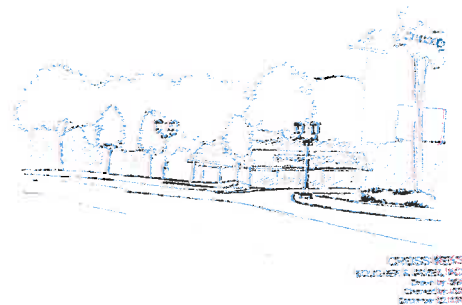


## After



## Before

View looking south on North Main Street toward Burger King and Sunoco.



## After



**Before**

View looking South on North Main Street toward the existing Hardware and Barb Lin Carpet Store.



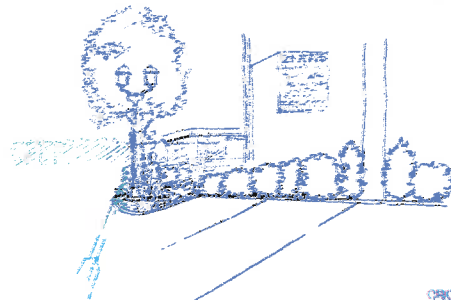
CROSS KEYS  
BOUCHER & JAMES, P.C.  
Drawn by: BJK  
Checked by: JSC  
December 22, 1999

**After**



**Before**

View looking North on North Main Street toward Tom Adams and intersection of Route 611 and Route 313.



CROSS KEYS  
BOUCHER & JAMES, P.C.  
Drawn by: BJK  
Checked by: JSC  
December 22, 1999

**After**

## Recommendations

### Sidewalks / Pedestrian Pathways

Sidewalks and pedestrian pathways were one of the major issues studied by the Gateway Committee along the North Main Street / Easton Road Corridor. Some pedestrian system already exists along the corridor, but it is fragmented and is not easily used. In many portions of the corridor, pedestrians have created their own pathways by simply walking constantly over the same grass areas until a hard "path" the width of their feet was worn into the dirt. In other areas, pedestrians are forced to walk through parking areas with haphazard traffic patterns.

The recommendation of the committee is that a sidewalk and/or pedestrian pathway should be provided along the corridor from the intersection with Chapman Road to frontage of the current Barb-Lin property. This was established as the extent of the corridor that would be developed for pedestrian use.

A sidewalk should be constructed across the front of the existing Burger King property to connect with the existing sidewalk along the frontage of Mercer Square in the vicinity of Fonthill Drive and would lead to the existing sidewalk in front of the existing Sunoco Station. Proposed sidewalk would then continue north along the frontage of the properties that formerly housed the bus station and Cross Keys Hardware and would terminate at the existing Barb-Lin building.

Pedestrians would be able to cross safely at the intersection of North Main Street and Fonthill Drive, which currently is signalized and includes a push button for a pedestrian crossing. The addition of these sidewalks will enable patrons of the Courthouse Motor Inn and residents of the Fonthill Apartments and surrounding areas to walk safely to and from the Mercer Square Shopping Center, the motel, Poco's Restaurant, and Burger King.

### Street Trees

The committee recommends that street trees be planted at regular intervals (40 to 50 feet on center) along the entire corridor, wherever space permits. The trees will visually enhance the corridor and will help to create the "sense of place" for this corridor as a gateway into the Community of Doylestown, as the Borough is known for its many tree-lined streets. The trees will create more opportunities for shade along the corridor and lessen the impact of the heat generated from the sun beating down on the extensive amounts of asphalt currently existing along the corridor. In addition, a regular pattern of street trees will help to lessen the scale and the perceived width of North Main Street / Easton Road and visually bring it back down to a more people-oriented and pedestrian scale.

It is recommended that the street trees be planted in continuous "trenches" that will run parallel to the curb and street and will visually read as a "green corridor" along the edge of the street. Where space permits, it is recommended that the trench and the street trees be located between the curb and the sidewalk. The trees and green corridor will create an added layer of "buffering" between the pedestrians and the fast moving traffic along the corridor and will add to their perceived sense of safety and comfort.

The placement of street trees must be coordinated with the placement of the proposed transitional lighting. Trees should not be located closer than fifteen (15) feet to any proposed light pole, and the

required utility connections should be placed to one side of the proposed tree trenches.

After locations have been set for the street tree planting, the tree trenches must be dug. Urban trees grow best in larger areas, such as a tree trench, rather than a constricted tree pit. These tree trenches are proposed to be continuous which will permit the tree roots to grow along the surface of the soil rather than twining around and eventually strangling in a traditional tree pit. The trenches are also proposed to permit a greater area of uncompacted soil around the roots so the tree can have better access to a larger area for water and nutrients.

The top of the root ball or base of the tree should be planted flush with the proposed top of grade, and the planting depth will be determined by the size of root ball. After setting the trees at the proper height, clean back fill should be used to fill the trenches. The soil should then be tamped lightly enough to allow for oxygen between the tiny particles of soils, but firm enough to hold the tree stable after settling. Each tree should be watered thoroughly immediately after planting.

The committee recommends native, urban tolerant trees be planted along the gateways, including the following:

- Gleditsia Triacanthos (Thornless Honeylocust)
- Pyrus Calleryana 'Aristocrat' (Aristocrat Callery Pear)
- Quercus Rubra (Red Oak)
- Quercus Phellos (Willow Oak)

### Soil Mix

The committee recognizes that the street trees will not grow and flourish under adverse conditions. Therefore, the soil mix to be used in the tree trenches will be a vital part of the corridor improvements. Urban Soil is typically nutrient deficient and full of debris and foreign matter. Therefore, the existing soil should be removed from the proposed tree trenches and should be discarded rather than amended.

The mixture used to back fill the tree trenches should be high quality topsoil that is clean and free of foreign objects. This soil can be mixed 1 part peat moss and 3 parts topsoil to aid in water retention and overall acidity of the soil (ideal for native tree species). After setting the trees in the proper locations and proper heights, back fill the trenches, tamp lightly and saturate with water. This will cause the soil to settle further; therefore, add additional soil and tamp lightly.

### Lighting

The Gateway Committee recommends that the North Main Street Corridor contain both the typical Doylestown Borough light fixture and a “Transitional” lighting fixture. The traditional Doylestown Borough fixture is recommended to be used along the southern portion of the North Main Street corridor. It is recommended that the new “transitional Lighting” fixture be used from the existing Barb-Lin Carpet property and north to the northern end of the corridor at the Cross Keys intersection. (Refer to the attached North Main Street Corridor Conceptual Plan)

The Borough lighting fixture is more pedestrian-oriented than the proposed transitional lighting. It contains one light on a black pole and is found throughout the downtown area. It has become a symbol of the downtown area, and is often adorned with seasonal decorations or flower baskets. A detail of the Doylestown Borough lighting fixture is included as an appendix to this study.

The committee recommends that a standard lighting fixture be used in each of the “gateways” in the transitional areas between the more densely developed and more pedestrian-oriented areas of the Borough and the more open and vehicular-oriented areas of the Township. The base, shaft, and fixture arm of the proposed lighting is specified to be black and the fixture is proposed to have two lights. The proposed fixture is intended to visually complement the existing Borough fixtures, except that they will be taller and have two lights per pole, rather than one. It is recommended that these lighting fixtures be spaced approximately 100 to 120 linear feet apart. This lighting will be referred to as the “Transitional Lighting” and a detail of the proposed lighting is included as an appendix to this study.

Doylestown Township’s Board of Supervisors has already endorsed the “Transitional Lighting” and has established a policy in which applicants seeking Subdivision and/or Land Development approval along the gateway corridors would be responsible for providing the type of lighting recommended by the Gateway Committee. It is recommended that the Borough adopt a similar policy so that the “Gateway Lighting”, which may be either the traditional Borough lighting or the transitional lighting depending upon the site’s location, would be required to be installed along the frontage of a property for which subdivision and/or land development approval is requested.

It is also recommended that both the Borough and the Township establish a policy in which any existing street lights within the transitional areas of the gateway corridors that need to be replaced would be replaced with the appropriate lighting fixture, based upon the North Main Street Corridor Conceptual Plan.



### Parking

The parking lots and areas along the North Main Street / Easton Road corridor appear to have taken “center stage” over the years and currently dominate the streetscape. The Gateway Committee has studied this area in great detail and recommends that the current parking areas be cleaned up and redefined; that traffic patterns into, out of, and through the parking areas be redefined, and that some of the remnant areas currently in paving be reclaimed for use as green space.

There is an opportunity, as the properties come before the Borough Council and the Board of Supervisors for land development approval for the reuse and redevelopment of various sites, to work with the applicants to “clean up” the parking areas. This could be achieved by requiring that parking areas on adjacent parcels be reconfigured to permit interconnection of the parking lots and limiting (and in some cases defining) the curb cuts for the driveways onto North Main Street / Easton Road.

Individual property owners could also be encouraged to reevaluate their parking areas and possibly join together with their neighbors in this endeavor. It is quite possible that some of the properties will actually be able to provide more parking if their lots are striped and the parking and driveway areas are better defined. The benefit to the community would be in the creation of better-defined and safer traffic patterns along the corridor.

Many parts of the corridor still have bits and pieces of paving (most of which are being used to park cars wherever they may fit) that appear to be remnant pieces of former parking areas that were partially taken by the Pennsylvania Department of Transportation (PADOT) when the roadway was widened to accommodate the increased traffic over the years. The committee recommends that these bits of paving be removed and returned to “green area”. By removing these bits of paving, the opportunity would be created to establish the proposed street trees in the continuous tree trenches as described above. It appears that some of these areas are providing parking for only one or two cars that may be able to be relocated to the rear of the buildings.

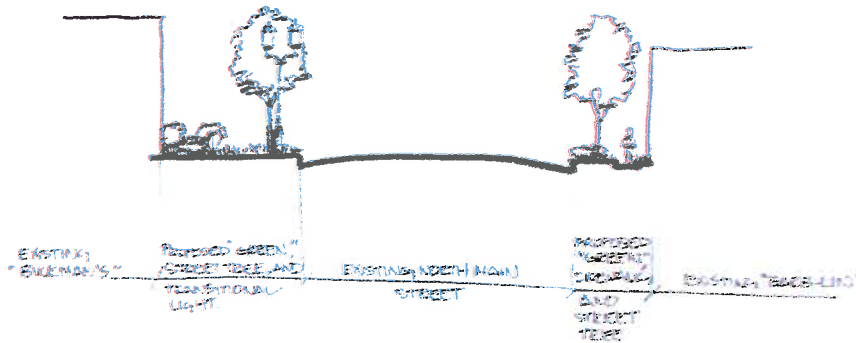
As an example, the limited parking currently existing at the front of the Barb-Lin building is very difficult to maneuver into and out of and actually serves to partially hide and obstruct the showroom. If this parking were moved to the rear of the site, and the driveway were interconnected to the adjoining parking lot, the area would be “cleaned up”, traffic patterns would be safer, an area could be returned to green space, street trees could be planted and better access could be provided to pedestrians.

The intent is not to completely eliminate parking in front of all buildings along the corridor. The intent is to relocate some of the parking to the rear of the buildings or behind a green strip, which

would serve as the continuous trenches for the proposed street trees. This green strip would help to create an aesthetically pleasing corridor by screening the few cars remaining in the front of the buildings. Additional green areas should be designed to aid in controlling the traffic circulation, limit and define the curb cuts needed to access the businesses, reduce sun glare, provide a physical “buffer” between the street and the proposed pedestrian pathways, and provide limited screening for the parking lots.

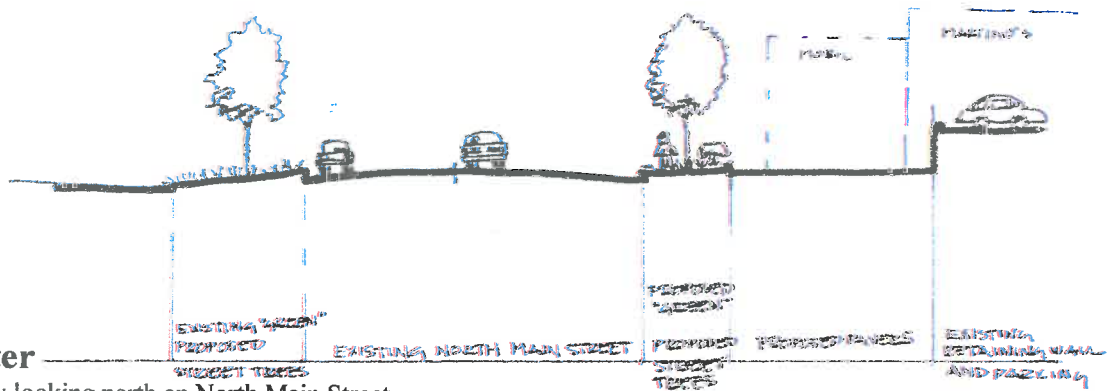
## Utilities

The committee recommends that all existing and proposed utilities within the corridor be placed underground. This would create a much more aesthetically pleasing streetscape and would create the opportunity to “clean up” the corridor and remove the visual “litter” of utility poles and overhead wires.



### After

View looking south on North Main Street



### After

View looking north on North Main Street.

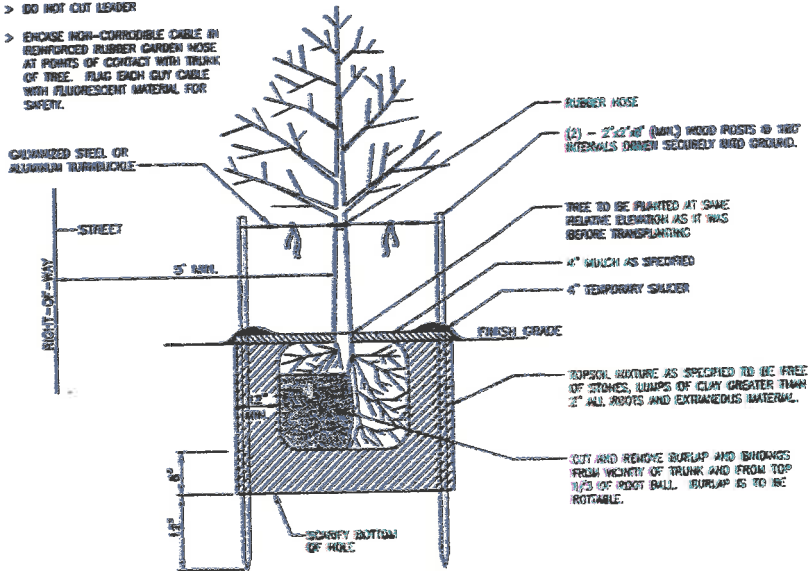
**NORTH MAIN STREET / EASTON ROAD CORRIDOR PLAN**

**Appendices**

- A.1 Street Tree Planting Detail
- A.2 Lighting Detail
- A.3 Sidewalk Detail
- A.4 Paving Detail
- A.5 Shrub Planting Detail
- A.6 Tree Protection Detail
- A.7 Borough Lighting Detail

**NOTES :**

- > PRUNE DEAD AND DAMAGED BRANCHES IN ACCORDANCE WITH RECOGNIZED HORTICULTURAL PRACTICES.
- > DO NOT CUT LEADER
- > ENCASE HIGH-CORRODIBLE CABLE IN REINFORCED RUBBER GARDEN HOSE AT POINTS OF CONTACT WITH TRUNK OF TREE. PLUG EACH CABLE WITH FLUORESCENT MATERIAL FOR SAFETY.



**TREE PLANTING DETAIL**

N.T.S.

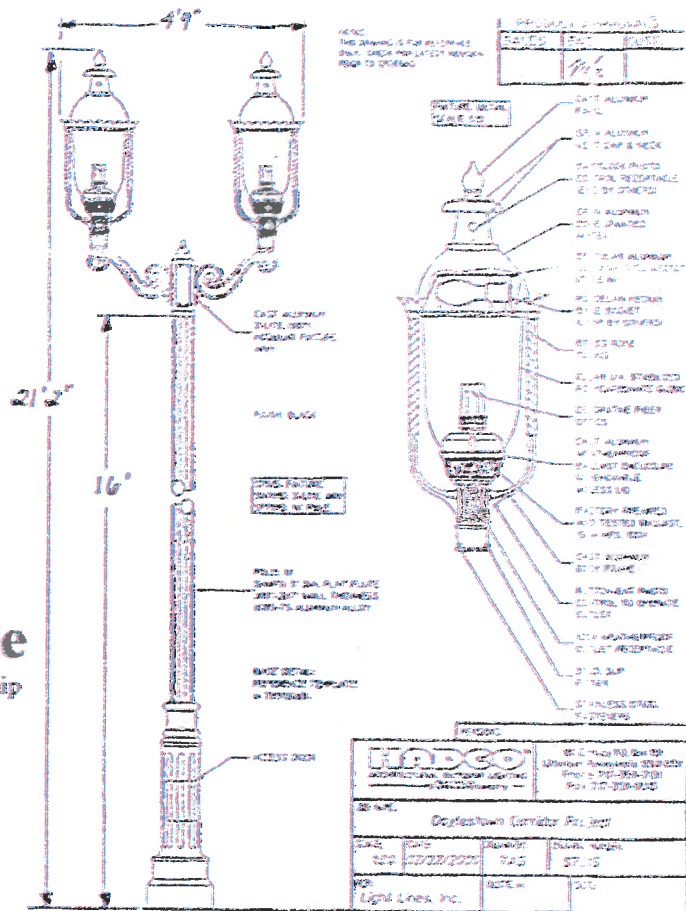
**Gateway Committee**  
 Doylestown Borough and Doylestown Township

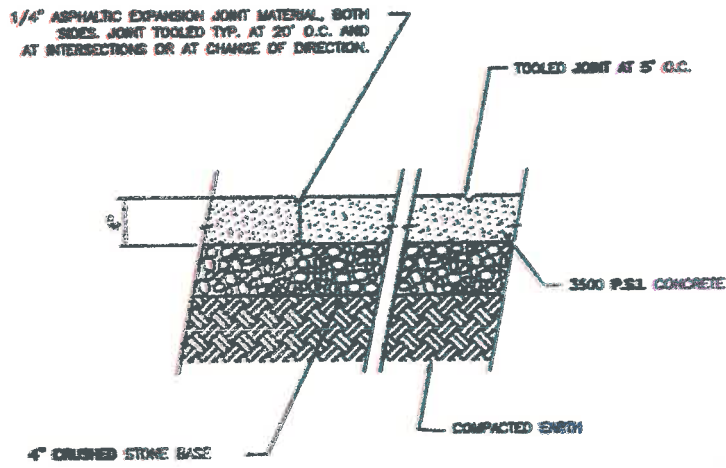
**Street Tree Planting Detail**

**Gateway Committee**

Doylestown Borough and Doylestown Township

**Transitional Lighting Detail**





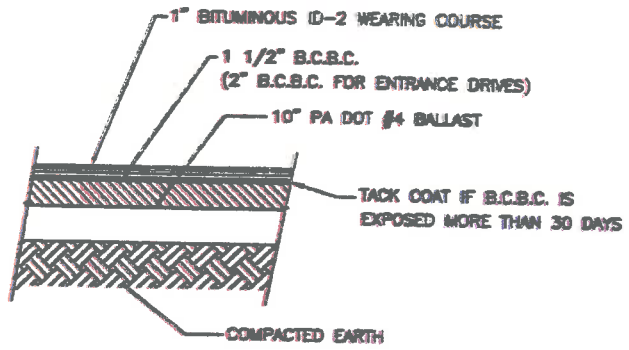
- NOTE:**
1. TOOL ALL EDGES
  2. 3/8" PER. FT. CROSS SLOPE
  3. BROOM OR BURLAP FINISH
  4. SIDEWALK TO BE 4'-0" WIDE

## SIDEWALK DETAIL

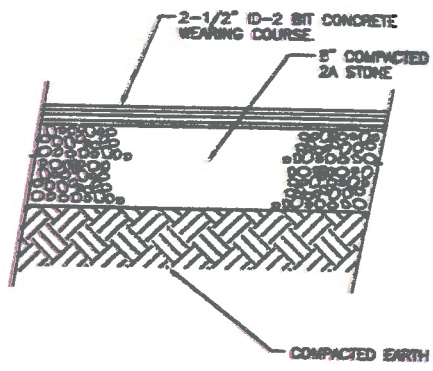
NOT TO SCALE

**Gateway Committee**  
Doylestown Borough and Doylestown Township

**Sidewalk Detail**



(COMMERCIAL AREA OUTSIDE OF PA DOT ROW)  
TYPICAL PAVING DETAIL  
N.T.S.



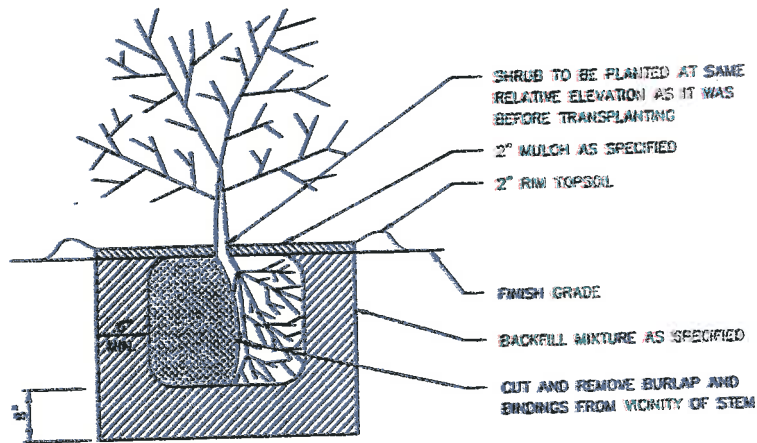
TYPICAL PARKING AREA PAVING DETAIL  
N.T.S.

## Gateway Committee

Doylestown Borough and Doylestown Township

### Paving Detail





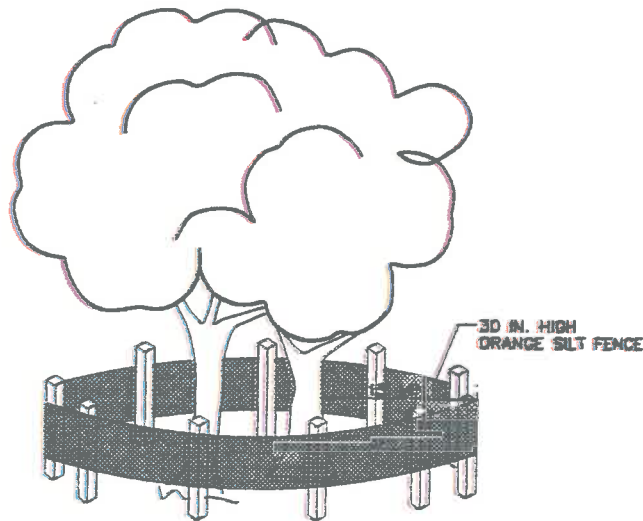
**SHRUB PLANTING DETAIL**

N.T.S.

**Gateway Committee**

Doylestown Borough and Doylestown Township

**Shrub Detail**



**NOTES:**

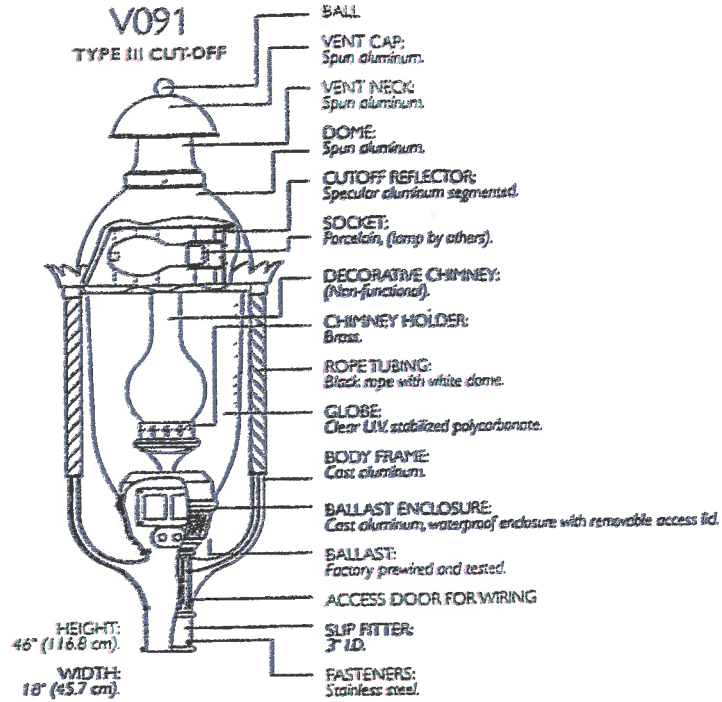
1. TREE PROTECTION FENCE TO BE LOCATED AT A MINIMUM OF 15' FROM TRUNK, OR AT EDGE OF DRIP LINE, WHICHEVER IS GREATER TO PREVENT INJURY TO TREE.
2. BOARDS SHALL NOT BE NAILED TO TREES DURING BUILDING OPERATIONS.
3. NO MORE THAN 1/3 OF FEEDER ROOTS SHALL BE CUT IN AN AREA INSIDE THE DRIP LINE OF THE TREE.
4. DAMAGED TRUNKS OR EXPOSED ROOTS SHALL BE PRESCRIBED BY A PROFESSIONAL FORESTER OR LICENSED TREE EXPERT.
5. TREE LIMB REMOVAL, WHERE NECESSARY, SHALL BE CUT FLUSH TO TRUNK OR MAIN BRANCH OF THAT STUB. TREES SHALL BE PRUNED AFTER PLANTING, OR BY THE NURSERYMAN AT THE TIME OF DIGGING, TO BALANCE TOP GROWTH WITH ROOTS AND TO PRESERVE THEIR NATURAL CHARACTER AND SHAPE. PRUNING SHALL BE RESTRICTED IN GENERAL TO THE SECONDARY BRANCHES AND SOFT SUCKER GROWTH.

## **TREE PROTECTION DURING CONSTRUCTION**

N.T.S.

**Gateway Committee**  
Doylestown Borough and Doylestown Township

**Tree Protection Detail**



## Gateway Committee

Doylestown Borough and Doylestown Township

### Borough Lighting Detail

# Gateway/Corridor Study

Prepared for the  
**Gateway Committee**  
Doylestown Borough and Doylestown Township

October 2005

Prepared by:

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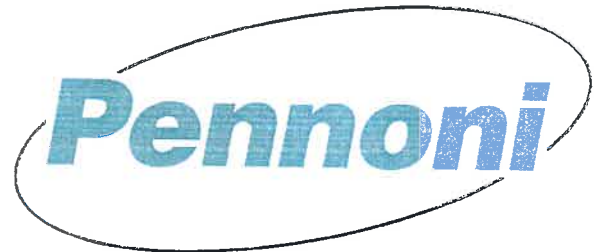


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### Introduction

The Gateway Committee was established in 1999 to study the “gateways” to the community and to offer suggestions and implementation guidelines for improvement to these “gateways”. The committee was formed as a joint committee of both Doylestown Borough and Doylestown Township, the two municipalities that together are known as the community of Doylestown. The members of the Gateway Committee were appointed by Doylestown Borough Council and the Doylestown Township Board of Supervisors and include the managers of each municipality, a representative of Doylestown Borough Council, a representative of the Doylestown Revitalization Board and representatives of the Doylestown Township Planning Commission. The Gateway Committee meetings have been open to the public and many business and property owners have attended the meetings and have become a part of the process of defining the “vision” for each of the corridors studied.

This “Gateway Study” is intended to serve as design standards and a guideline for the future development and redevelopment of the gateway corridors into and out of the Doylestown Community. Each of the corridors studied will be included as a separate section of this booklet. The sections devoted to each gateway corridor are intended to be independent of each other so that the recommendations for the initial gateway corridors may be adopted and become a part of the official “Gateway Study”, while other sections are still being studied and analyzed.

The “Gateway Study” has been formatted so that it can be used as a “tool” by both the Borough and the Township. Each gateway corridor will be presented in a separate section of the study with a plan, sketches and a narrative to convey the proposed improvements to the corridor in both a visual and written form. At the end of the study, appendices have been provided to illustrate the proposed improvements in the form of design/construction details. The intent is for the Borough and the Township to use this study as the basis for making decisions about the design of the streetscape and parking areas associated with current and future subdivision and land development projects and determining which improvements should be required as a part of these projects along the gateway corridors. In addition, the Borough and the Township will also be able to use this study to target specific improvement projects that may be implemented with public funding.

This document is intended to be a working document that will be used by both Doylestown Borough and Doylestown Township in conjunction with their Comprehensive Plans, their Zoning Ordinances, their Subdivision and Land Development Ordinances, the Bike and Hike Plan and other planning documents.

### Section V South Easton Road

The South Easton Road Corridor is the southern most entrance or gateway into the community of Doylestown. This corridor starts where Route 611 crosses the Neshaminy Creek and continues north on South Easton Road to the Doylestown Township/Borough Municipal boundary line, just north of the Route 202 Overpass.

Due to the length and the distinctly different areas that exist along the corridor, this study will be divided into two portions. Portion A will concentrate on the area between the Neshaminy Creek and New Britain Road. Portion B will concentrate on the area between New Britain Road and the municipal boundary line.

Portion A of the South Easton Road Corridor functions as a major gateway into and out of the Community of Doylestown and would presently be described as a “utilitarian” roadway. The corridor functions as nothing more than a roadway to convey the traffic. The roadway is lined with concrete curbing, paved parking areas, signs, commercial buildings in various stages of use and non-use, utility poles with overhead utility lines, and cobra head lighting. Many of the improvements made to this corridor in the past were traffic-oriented and many of the business and commercial properties along the corridor lost part of their “front yards” as the roadway was widened to accommodate the increased traffic. As a result, parking seems to be at a premium along the corridor and many businesses have found creative ways to fit in “a few extra parking spaces”.

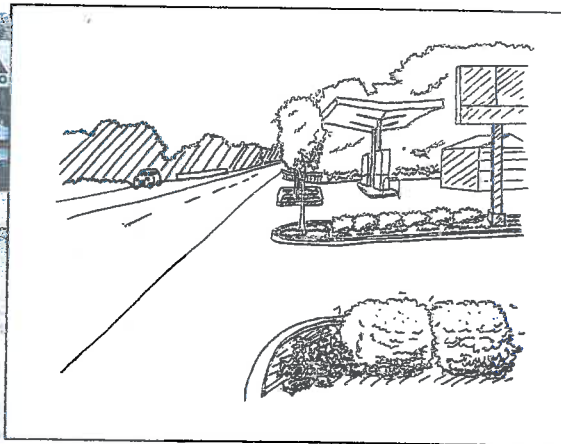
Portion B of the corridor functions as a major gateway into and out of the Community of Doylestown and is presently used as a primary access into Doylestown Borough. The roadway is lined with above ground utilities, cobra head lighting and street trees, but remains extremely wide and overwhelming. Due to this, the corridor acts primarily as a vehicular thoroughfare.

The Gateway Committee, in cooperation with the community’s input, has developed a series of recommendations for this corridor. The intent is to reclaim the corridor from the traffic-oriented roadway that it is today and create the potential for a true “gateway” to the community. The recommendations include strategies to create a streetscape that would identify it as one of the “gateways” and as such, would serve to create a transition from the truly traffic-oriented corridor to the south to the more pedestrian-oriented “center of town” to the north.

These recommendations include the addition of a new access road along the rear of the properties that have frontage on Route 611 with limited access points to these properties from Route 611, the addition of sidewalks and pedestrian pathways, additional street trees, specific soil mixes to sustain the street trees in an urban environment, planters along the bridge, transitional lighting and Borough lighting as well as the relocation and/or reconfiguration of some parking areas. The intent is to reclaim some of the odd bits of remnant paving that have remained in the corridor and use the opportunity to create more opportunities for safe and comfortable pedestrian and vehicular traffic

along the corridor. The goal is to create more opportunities to “green up” the corridor and develop improvements such as the repetition of street trees and transitional lighting that will serve to identify this as one of the Gateway Corridors, much as the center of Doylestown has come to be identified by its signature light standards and hanging baskets.

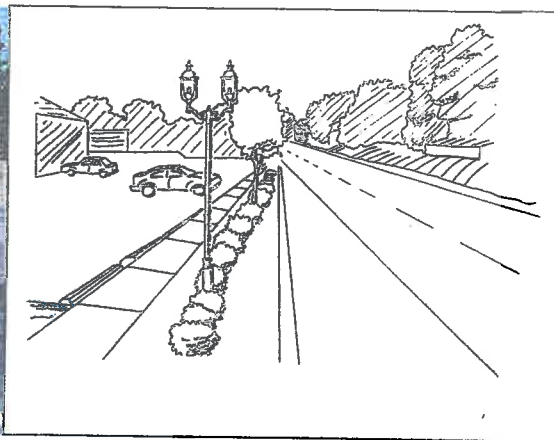
For Portion A of the Corridor Area, we have identified vehicular access, building setbacks and signage as features that are integral to the streetscape and therefore, would affect the overall character of the corridor. Vehicular access could control how existing and proposed buildings are accessed from existing and/or proposed roads. Building setbacks could control how close (and sometimes how far) proposed buildings could be located to the street right-of-way and would dictate the width and feel of the corridor. Sign regulations could establish a standard for the types, locations, sizes and materials of proposed signs.



**Before**

**After**

View looking south on Route 611 near bridge over Neshaminy Creek.

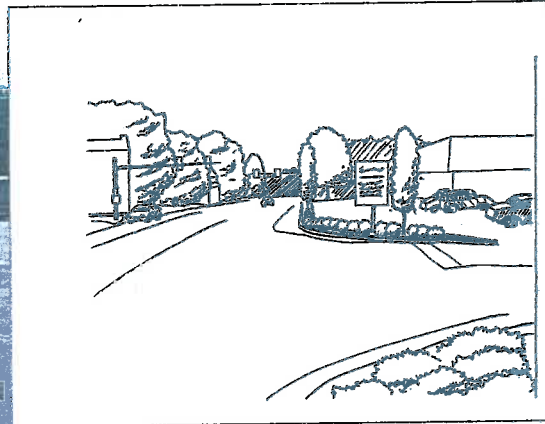


**Before**

**After**

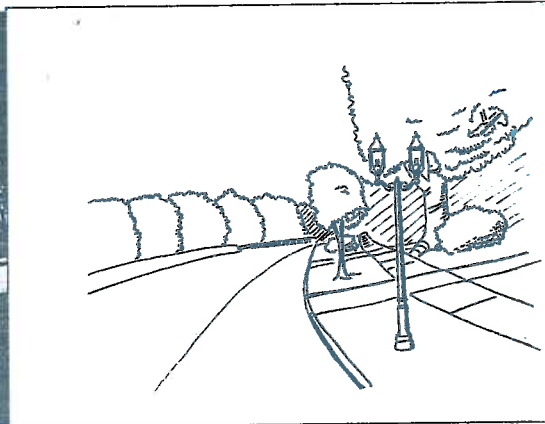
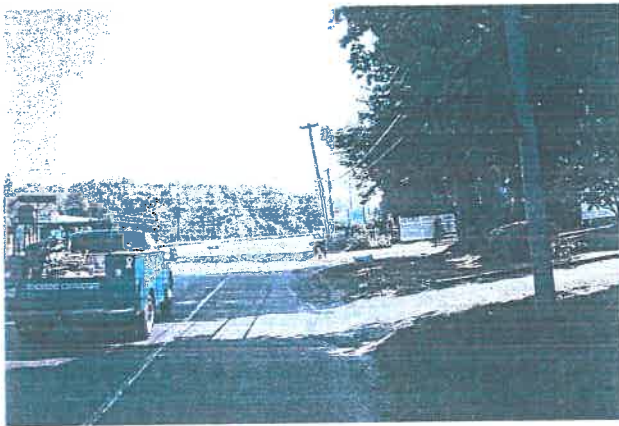
View looking north on Route 611 south of intersection with Edison Furlong Road.





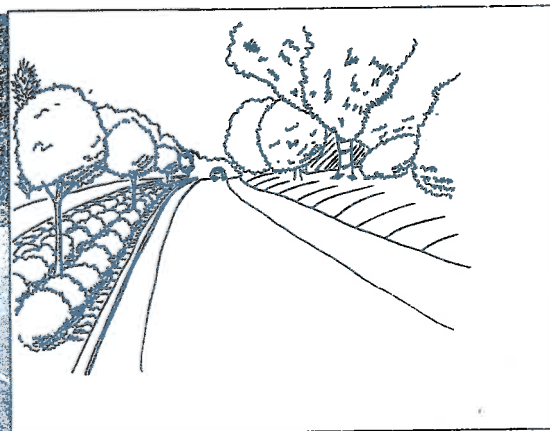
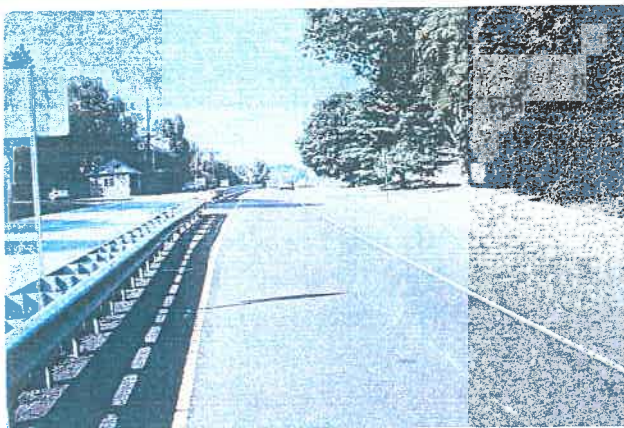
**Before**  
View looking south on Route 611 at the intersection with Quarry Road.

**After**



**Before**  
View looking south on Route 611 toward Buckman's Garden Center.

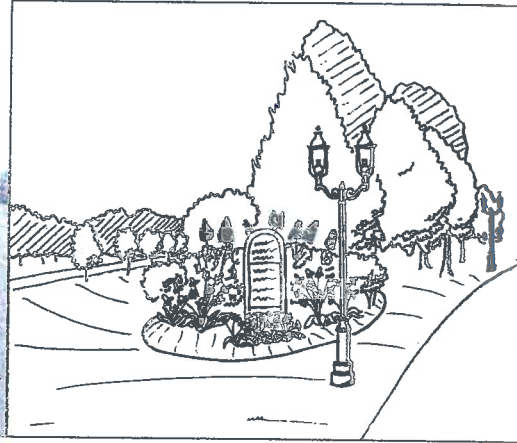
**After**



**Before**

**After**

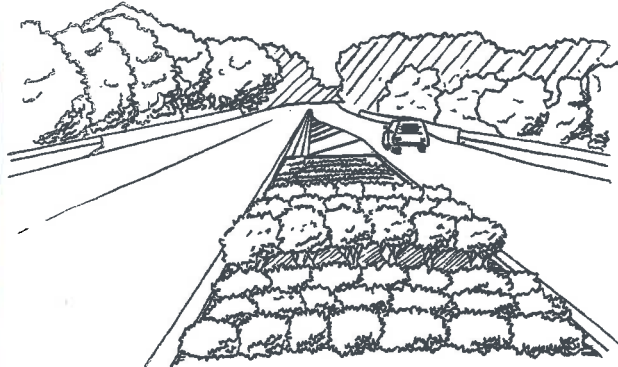
View looking north on South Easton Road toward intersection with New Britain Road.



Before

After

View looking south on South Easton Road toward proposed Triangle Park at New Britain Road.



Before

After

View looking south on South Easton Road toward Route 202 Bypass bridge.

### Recommendations

#### Sidewalks/Pedestrian Pathways

Sidewalks and pedestrian pathways were one of the major issues studied along the South Easton Road Corridor. Some pedestrian systems already exist along the corridor, but it is fragmented and is not easily accessible. In many portions of the corridor, pedestrians are forced to walk through parking areas with haphazard traffic patterns or along the shoulder of the busy roads.

The recommendation is that a sidewalk and/or pedestrian pathway should be provided along the corridor from the sidewalks in the Borough, along the western side of South Easton Road and continue along the frontages of the commercial businesses along Route 611. At all proposed intersections, pedestrian cross walks should be constructed to help facilitate the safety of the area's residents. Additional sidewalks and/or pedestrian pathways could be added along any proposed access roads to provide a link from the commercial areas along Route 611 to the Township Park and adjoining residential neighborhoods. This was established as the extent of the corridor that would be developed for pedestrian use.

#### Street Trees

The committee recommends that street trees be planted at regular intervals (40 to 50 feet on center) along the entire corridor in areas where there is a lack of street trees and wherever space permits. The trees will visually enhance the corridor and will help to create the "sense of place" for this corridor as a gateway into the Community of Doylestown, as the Borough is known for its many tree-lined streets. The trees will create more opportunities for shade along the corridor and lessen the impact of the heat generated from the sun beating down on the extensive amounts of asphalt currently existing along the corridor. In addition, a regular pattern of street trees will help to lessen the scale and the perceived width of South Easton Road and visually bring it back down to a more people-oriented and pedestrian scale.

It is recommended that the street trees be planted in continuous "trenches" that will run parallel to the curb and street and will visually read as a "green corridor" along the edge of the street. Where space permits, it is recommended that the trench and the street trees be located between the curb and the sidewalk. The trees and green corridor will create an added layer of "buffering" between the pedestrians and the fast moving traffic along the corridor and will add to their perceived sense of safety and comfort.

The placement of street trees must be coordinated with the placement of the proposed transitional lighting. Trees should not be located closer than fifteen (15) feet to any proposed light pole, and the required utility connections should be placed to one side of the proposed tree trenches.

After locations have been set for the street tree planting, the tree trenches must be dug. Urban trees grow best in larger areas, such as a tree trench, rather than a constricted tree pit. These tree trenches are proposed to be continuous which will permit the tree roots to grow along the surface of the soil rather than twining around and eventually strangling in a traditional tree pit. The trenches are also proposed to permit a greater area of uncompacted soil around the roots so the tree can have better access to a larger area for water and nutrients.

The top of the root ball or base of the tree should be planted flush with the proposed top of grade, and the planting depth will be determined by the size of the root ball. After setting the trees at the proper height, clean back fill should be used to fill the trenches. The soil should then be tamped lightly enough to allow for oxygen between the tiny particles of soils, but firm enough to hold the tree stable after settling. Each tree should be watered thoroughly immediately after planting.

The committee recommends native, urban tolerant trees be planted along the gateways, including the following:

- Gleditsia Triacanthos (Thornless Honeylocust)
- Pyrus Calleryana 'Aristocrat' (Aristocrat Callery Pear)
- Quercus Rubra (Red Oak)
- Quercus Phellos (Willow Oak)

### **Soil Mix**

The committee recognizes that the street trees will not grow and flourish under adverse conditions. Therefore, the soil mix to be used in the tree trenches will be a vital part of the corridor improvements. Urban Soil is typically nutrient deficient and full of debris and foreign matter. Therefore, the existing soil should be removed from the proposed tree trenches and should be discarded rather than amended.

The mixture used to back fill the tree trenches should be high quality topsoil that is clean and free of foreign objects. This soil can be mixed 1 part peat moss and 3 parts topsoil to aid in water retention and overall acidity of the soil (ideal for native tree species). After setting the trees in the proper locations and proper heights, back fill the trenches, tamp lightly and saturate with water. This will cause the soil to settle further; therefore, add additional soil and tamp lightly.

### **Lighting**

The Gateway Committee recommends that the South Easton Road Corridor contain both the typical Doylestown Borough light fixture and a Transitional Lighting fixture. It is recommended that the Transitional Lighting fixture be used from where Route 611 crosses the Neshaminy Creek to the Route 202 Bypass bridge. The traditional Doylestown Borough fixture is recommended to be used

along the northern portion of the South Easton Road corridor, from the Route 202 Bypass bridge to the municipal boundary line (Portion B).

The Borough lighting fixture is more pedestrian-oriented than the proposed transitional lighting. It contains one light on a black pole and is found throughout the downtown area. It has become a symbol of the downtown area, and is often adorned with seasonal decorations or flower baskets. A detail of the Doylestown Borough lighting fixture is included as an appendix to this study.

The committee has recommended that a standard lighting fixture be used in each of the “gateways” in the transitional areas between the more densely developed and more pedestrian-oriented areas of the Borough and the more open and vehicular-oriented areas of the Township. The base, shaft, and fixture arm of the proposed lighting is specified to be black and the fixture is proposed to have two lights. The proposed fixture is intended to visually complement the existing Borough fixtures, except that they will be taller and have two lights per pole, rather than one. It is recommended that these lighting fixtures be spaced approximately 250 linear feet apart. This lighting will be referred to as the “Transitional Lighting” and a detail of the proposed lighting is included as an appendix to this study.

Doylestown Township’s Board of Supervisors has already endorsed the Transitional Lighting and has established a policy in which applicants seeking Subdivision and/or Land Development approval along the gateway corridors would be responsible for providing the type of lighting recommended by the Gateway Committee.

### **Parking/Street Width**

The parking lots and areas along the southern portion of the South Easton Road corridor appear to have taken “center stage” over the years and currently dominate the streetscape. This area has been studied in great detail. It is recommended that the current parking areas be cleaned up and redefined; that traffic patterns into, out of, and through the parking areas be redefined; and that some of the remnant areas currently in paving be reclaimed for use as green space.

There is an opportunity, as the properties come before the Board of Supervisors for land development approval for the reuse and redevelopment of various sites, to work with the applicants to “clean up” the parking areas. This could be achieved by requiring that parking areas on adjacent parcels be reconfigured to permit interconnection of the parking lots and limiting (and in some cases defining) the curb cuts for the driveways onto South Easton Road.

Individual property owners could also be encouraged to reevaluate their parking areas and possibly join together with their neighbors in this endeavor. It is quite possible that some of the properties will actually be able to provide more parking if their lots are striped and the parking and driveway areas are better defined. The benefit to the community would be in the creation of better-defined and

safer traffic patterns along the corridor.

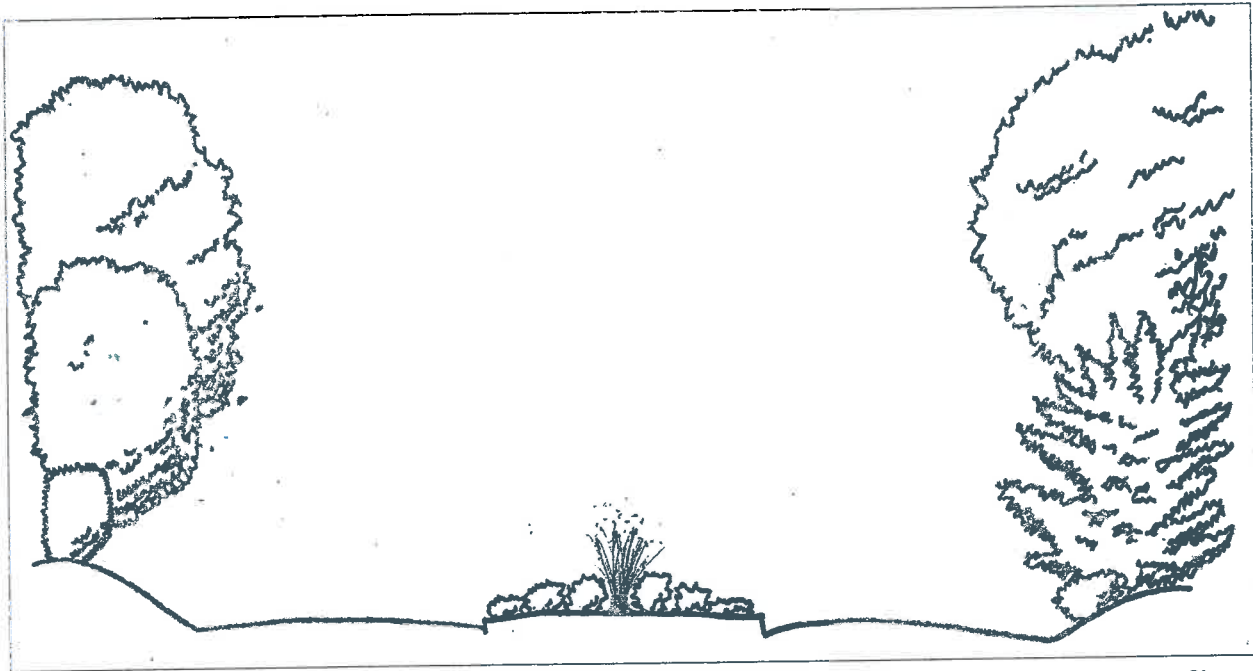
The addition of an access road along the rear of the commercial and residential properties would also provide an opportunity to limit the number of access points onto Route 611 as well as limit the vehicular turning movements. These improvements could ultimately provide additional green areas along this portion of the South Easton Road Corridor.

The intent is not to completely eliminate parking in front of all buildings along the corridor. The intent is to relocate some of the parking to the rear of the buildings or behind a green strip, which would serve as the continuous trenches for the proposed street trees. This green strip would help to create an aesthetically pleasing corridor by screening the few cars remaining in the front of the buildings. Additional green areas should be designed to aid in controlling the traffic circulation, limit and define the curb cuts needed to access the businesses, reduce sun glare, provide a physical “buffer” between the street and the proposed pedestrian pathways, and provide limited screening for the parking lots.

As noted above, the northern portion of this corridor (Portion B) is defined by the excessive width of the roadway. It is recommended that a portion of the roadway be reclaimed by reducing the width of the shoulders as well as providing planting areas along the center median. This would provide additional green areas to create more opportunities for shade along the corridor and lessen the impact of the heat generated from the sun beating down on the extensive amounts of asphalt currently existing along this area of the corridor. This will help to lessen the scale and the perceived width of South Easton Road and visually bring it back down to a more people-oriented and pedestrian scale.



**Before - View looking south on South Easton Road. Excessive paving width across roadway.**



**After - View looking south on South Easton Road. Proposed planting island in center median.**

### **Utilities**

The committee recommends that all existing and proposed utilities within the corridor be placed underground. This would create a much more aesthetically pleasing streetscape and would create the opportunity to “clean up” the corridor and remove the visual “litter” of utility poles and overhead wires.

### **Village of Edison Traffic Evaluation and Proposed Access Road**

As requested by Doylestown Township Board of Supervisor and under the direction of the Doylestown Township Planning Commission, Pennoni Associates Inc. evaluated the Village of Edison regarding exiting traffic operations. The study primarily included the area bordered by Route 611 to the east and north, Turk Road to the west and Quarry and Edison Roads to the south, illustrated in the attached South Easton Road Gateway/Corridor Plan, Portion A. As part of the evaluation exiting traffic counts taken at the following intersections to determine the movement of traffic through the study area.

- Turk Road and Quarry Road
- Quarry Road and Edison Road

Existing traffic counts obtained from a private developer were used at the intersection of Route 611 and Edison-Furlong Road. The Village of Edison is primarily a residential area mixed with commercial businesses built around the operation of the Edison Quarry.

### **Existing Roadway Conditions**

Quarry Road – is a local road the primarily runs in an east-west direction connecting Turk Road to Easton Road. The lane widths vary from 10 to 12 feet in width. There are no or limited shoulders along the section between Turk Road and Edison Road. There are minimal shoulders along the section from Edison Road to Route 611 due to the existence of driveway and adjacent parking area along this section. The posted speed limit for Quarry Road is 25 mile per hour.

Edison Road – is a local road that primarily runs in a north south direction forming a loop connecting Easton Road to Quarry Road and then back to Easton Road. The section of Edison Road from Easton Road to Quarry Road is curbed and the travel lanes are approximately 11 feet in width. The section of Edison Road from Quarry Road to Easton Road the lanes vary in with measuring approximately 9.5 feet in width with no shoulders. The posted speed limit on Edison Road is 25 miles per hour.

Both Quarry Road and Edison Road primarily access for residents and business within the village. However, due to the increased development with in the area, more and more traffic has been using these roads as a short cut to and from Turk Road and Easton Road.

### **Preliminary Access Road Design and Recommendations**

The information contained in the Village of Edison Traffic Evaluation was presented to the Planning Commission, local residents and business owners within the study area. Base upon comments received, the Planning Commission directed Pennoni Associates to prepare a “conceptual” plan to address the following issues:

- Alternative means of access to the adjacent properties along Easton Road, Route 611 and the Village of Edison.
- Address traffic and speeds southbound on Route 611 expressway.
- Improve traffic circulation entering and exiting the Village of Edison.

The “conceptual” plan to improve access to the Village of Edison is illustrated in South Easton Road Gateway/Corridor Plan, Portion A. The proposed improvements include a new signalized intersection along Route 611 creating a point to provide for a new access road which will run behind the exiting residential and commercial properties on the western side of Route 611. The access road would connect Route 611 and Edison Road. An additional access road is proposed to connect to Turk Road.

The proposed signalized intersection along with the access roads would provide a more effective means for residents, businesses and patrons to enter and exit the Village of Edison.



**SOUTH EASTON ROAD CORRIDOR PLAN**

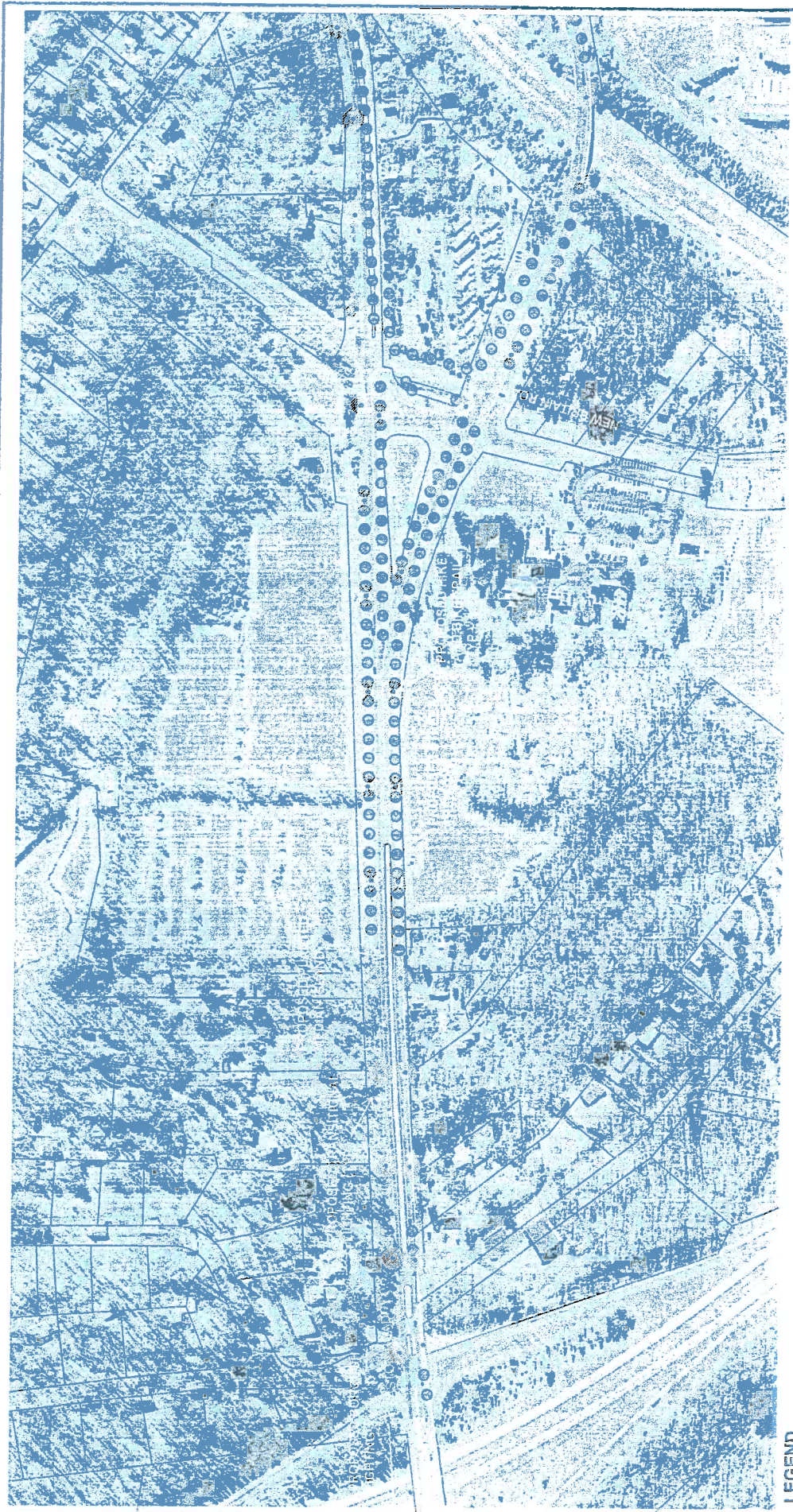


**South Easton Road Gateway / Corridor Plan  
Portion A**

- LEGEND**
- Proposed Transitional Light
  - Proposed Street Tree
  - Proposed Hike and Bike Trail/Sidewalk
  - Proposed Roadway Improvement

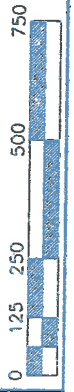


Drawn By: KWK  
 Checked By: JSG  
 Scale: 1" = 250'  
 September 20, 2005



**LEGEND**

- Proposed Transitional Light
- Proposed Street Tree
- Proposed Hike and Bike Trail/Sidewalk
- Proposed Planted Island



**South Easton Road Gateway / Corridor Plan  
Portion B**

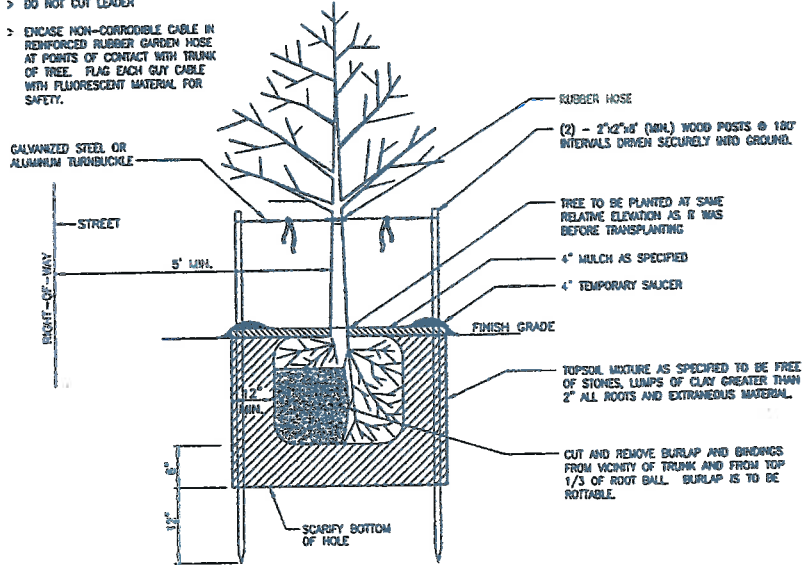
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 Checked By: JSG  
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 September 20, 2009

**Appendices**

- A.1 Street Tree Planting Detail
- A.2 Lighting Detail
- A.3 Sidewalk Detail
- A.4 Paving Detail
- A.5 Shrub Planting Detail
- A.6 Tree Protection Detail
- A.7 Borough Lighting Detail

NOTES :

- > PRUNE DEAD AND DAMAGED BRANCHES IN ACCORDANCE WITH RECOGNIZED HORTICULTURAL PRACTICES.
- > DO NOT CUT LEADER
- > ENCASE NON-CORRODIBLE CABLE IN REINFORCED RUBBER GARDEN HOSE AT POINTS OF CONTACT WITH TRUNK OF TREE. FLAG EACH GUY CABLE WITH FLUORESCENT MATERIAL FOR SAFETY.



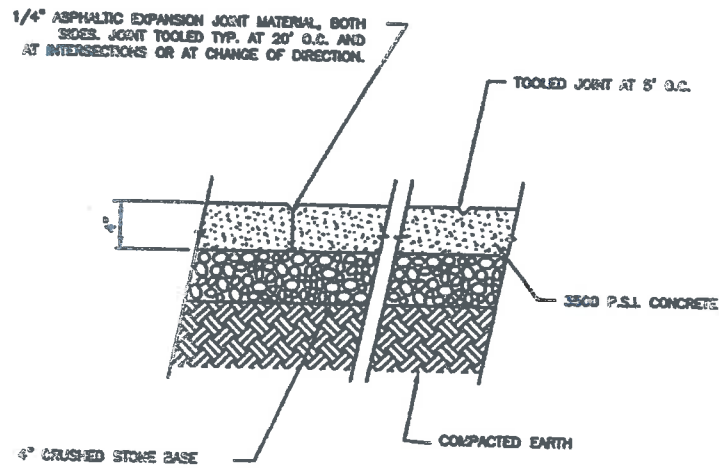
**TREE PLANTING DETAIL**

N.T.S.

**Gateway Committee**  
 Doylestown Borough and Doylestown Township  
**Street Tree Planting Detail**







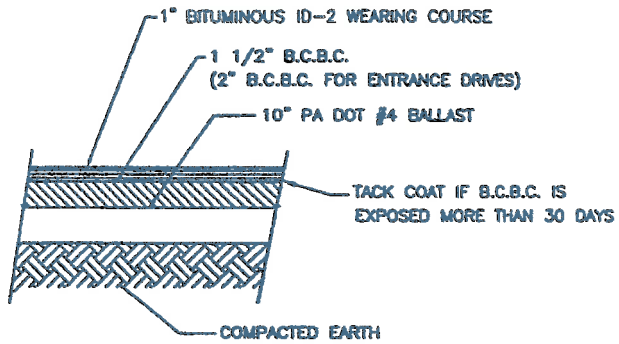
- NOTE:**
1. TOOL ALL EDGES
  2. 3/8" PER. FT. CROSS SLOPE
  3. BROOM OR BURLAP FINISH
  4. SIDEWALK TO BE 4'-0" WIDE

SIDEWALK DETAIL  
NOT TO SCALE

Gateway Committee  
Doylestown Borough and Doylestown Township

Sidewalk Detail

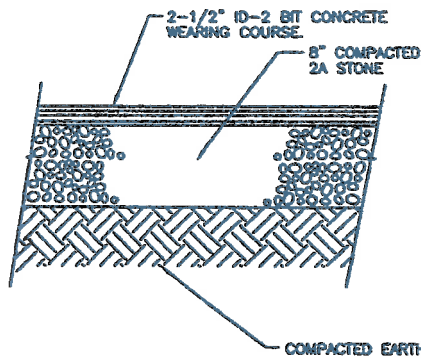




(COMMERCIAL AREA OUTSIDE OF PA DOT ROW)

TYPICAL PAVING DETAIL

N.T.S.



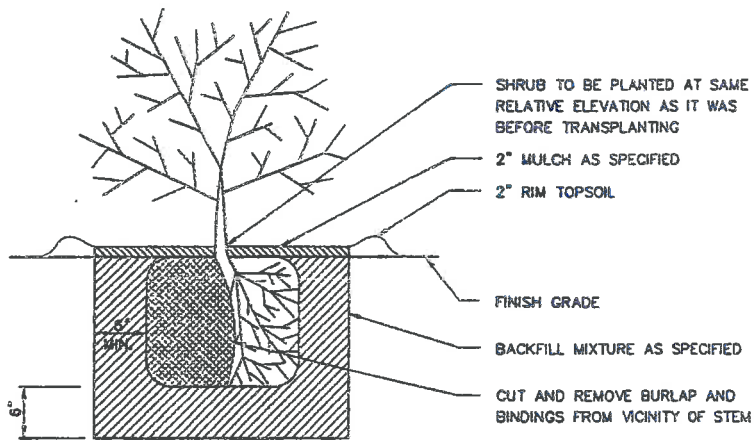
TYPICAL PARKING AREA PAVING DETAIL

N.T.S.

Gateway Committee

Doylestown Borough and Doylestown Township

Paving Detail

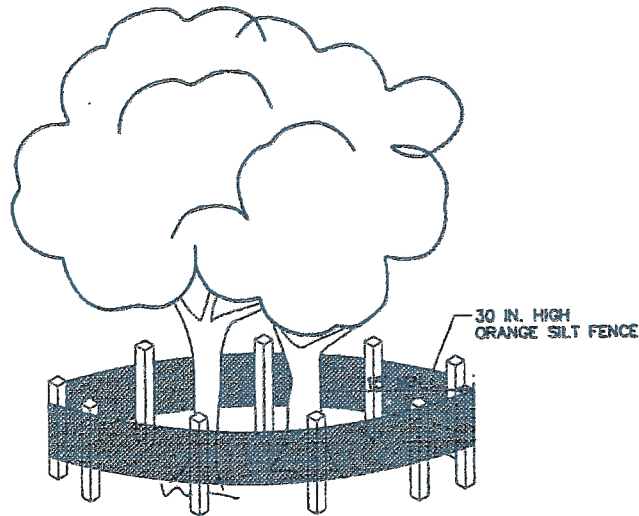


**SHRUB PLANTING DETAIL**

N.T.S.

Gateway Committee  
Doylestown Borough and Doylestown Township

Shrub Detail



**NOTES:**

1. TREE PROTECTION FENCE TO BE LOCATED AT A MINIMUM OF 15' FROM TRUNK, OR AT EDGE OF DRIP LINE, WHICHEVER IS GREATER TO PREVENT INJURY TO TREE.
2. BOARDS SHALL NOT BE NAILED TO TREES DURING BUILDING OPERATIONS.
3. NO MORE THAN 1/3 OF FEEDER ROOTS SHALL BE CUT IN AN AREA INSIDE THE DRIP LINE OF THE TREE.
4. DAMAGED TRUNKS OR EXPOSED ROOTS SHALL BE PRESCRIBED BY A PROFESSIONAL FORESTER OR LICENSED TREE EXPERT.
5. TREE LIMB REMOVAL, WHERE NECESSARY, SHALL BE CUT FLUSH TO TRUNK OR MAIN BRANCH OF THAT STUB. TREES SHALL BE PRUNED AFTER PLANTING, OR BY THE NURSERYMAN AT THE TIME OF DIGGING, TO BALANCE TOP GROWTH WITH ROOTS AND TO PRESERVE THEIR NATURAL CHARACTER AND SHAPE. PRUNING SHALL BE RESTRICTED IN GENERAL TO THE SECONDARY BRANCHES AND SOFT SUCKER GROWTH.

**TREE PROTECTION  
DURING CONSTRUCTION**

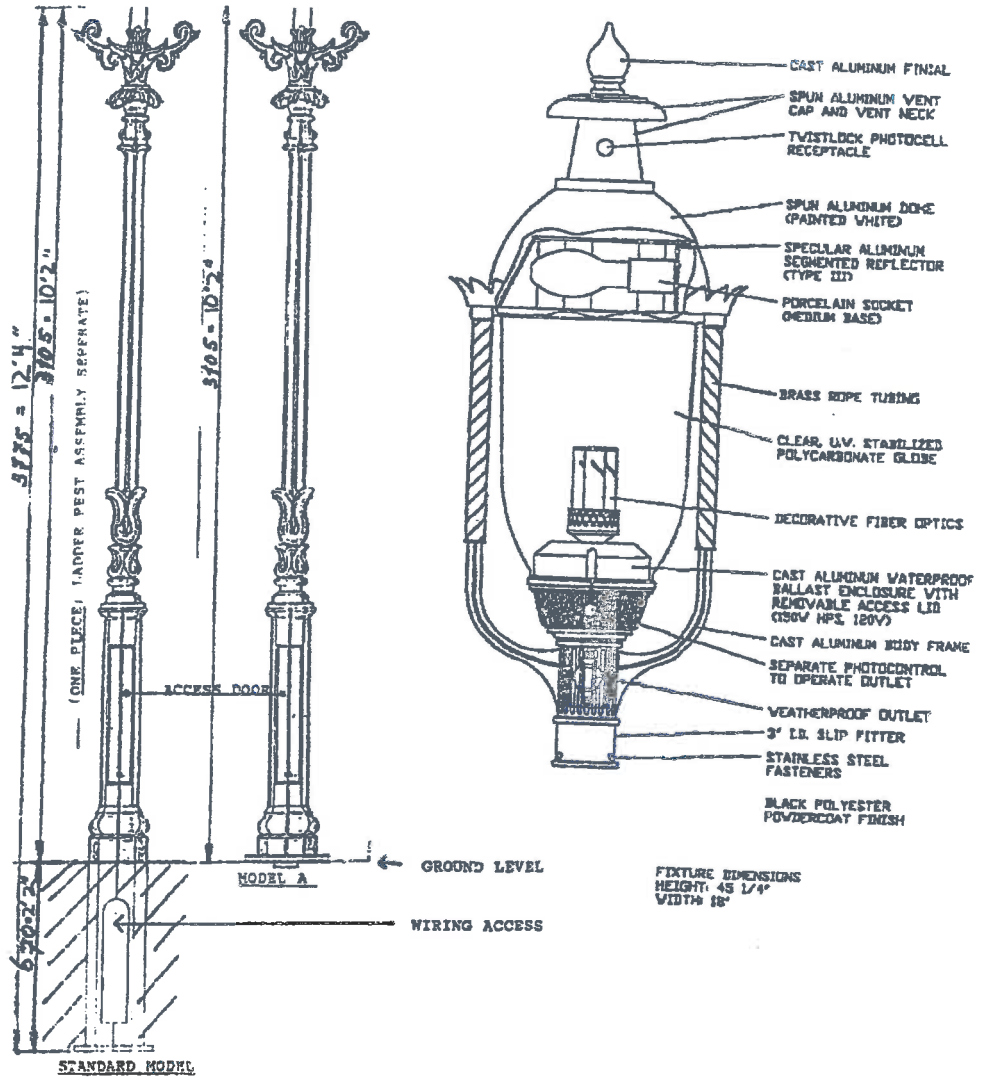
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N.T.S.

Gateway Committee  
Doylestown Borough and Doylestown Township

Tree Protection Detail

# Gateway Study



Gateway Committee  
 Doylestown Borough and Doylestown Township  
 Borough Lighting Detail



**DESIGN REQUIREMENTS  
and  
CONSTRUCTION STANDARDS**

for

**DOYLESTOWN TOWNSHIP**  
**PEDESTRIAN AND BICYCLE FACILITIES**

Prepared by

**PICKERING, CORTS & SUMMERSON, INC.**  
126 South State Street  
Newtown, PA 18940

April 1996

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Signing	31-34



## INTRODUCTION

Doylestown Borough and Doylestown Township in 1992, formed a joint committee to study the concept of developing a multi-use path system that would surround the Borough and establish a network of path systems through the Township. The activities of that committee resulted in the publication of the "Doylestown Community Joint Comprehensive Pedestrian/Bicycle Transportation Plan" first published in Draft form in June 1994.

This document presents guidelines for the design and construction of the bike path facilities along with the procedures for Bikeway Occupancy Permits involving facilities located within Pennsylvania Department of Transportation (PaDOT) Rights-of-Way. This document is meant to be a companion to the Transportation Plan and is to be used on all segments of the system by the Borough, the Township, and by land developers as roads and adjoining properties are developed and improved.

The development and design of bikeways in Doylestown Township shall conform to the criteria presented in the 1991 American Association of State Highway and Transportation Officials (AASHTO) "Guide for the Development of New Bicycle Facilities" and as set forth in PaDOT's Design Manual. One important factor that must be considered in the design, especially when attempting to utilize existing roadways and streets, is the safety of bicyclists, pedestrians and motorists. Safety must not be compromised.

## SECTION I. DESIGN STANDARDS

### BICYCLE PATHS

Bike paths represent facilities located on exclusive rights-of-way and with minimal cross flow by motor vehicles. Bike paths should be thought of as extensions of the highway system that are intended for the exclusive or preferential use of bicycles in much the same way as freeways are intended for the exclusive or preferential use of motor vehicles. Figure 1 indicates a typical bike path cross section on a separate right-of-way or easement.

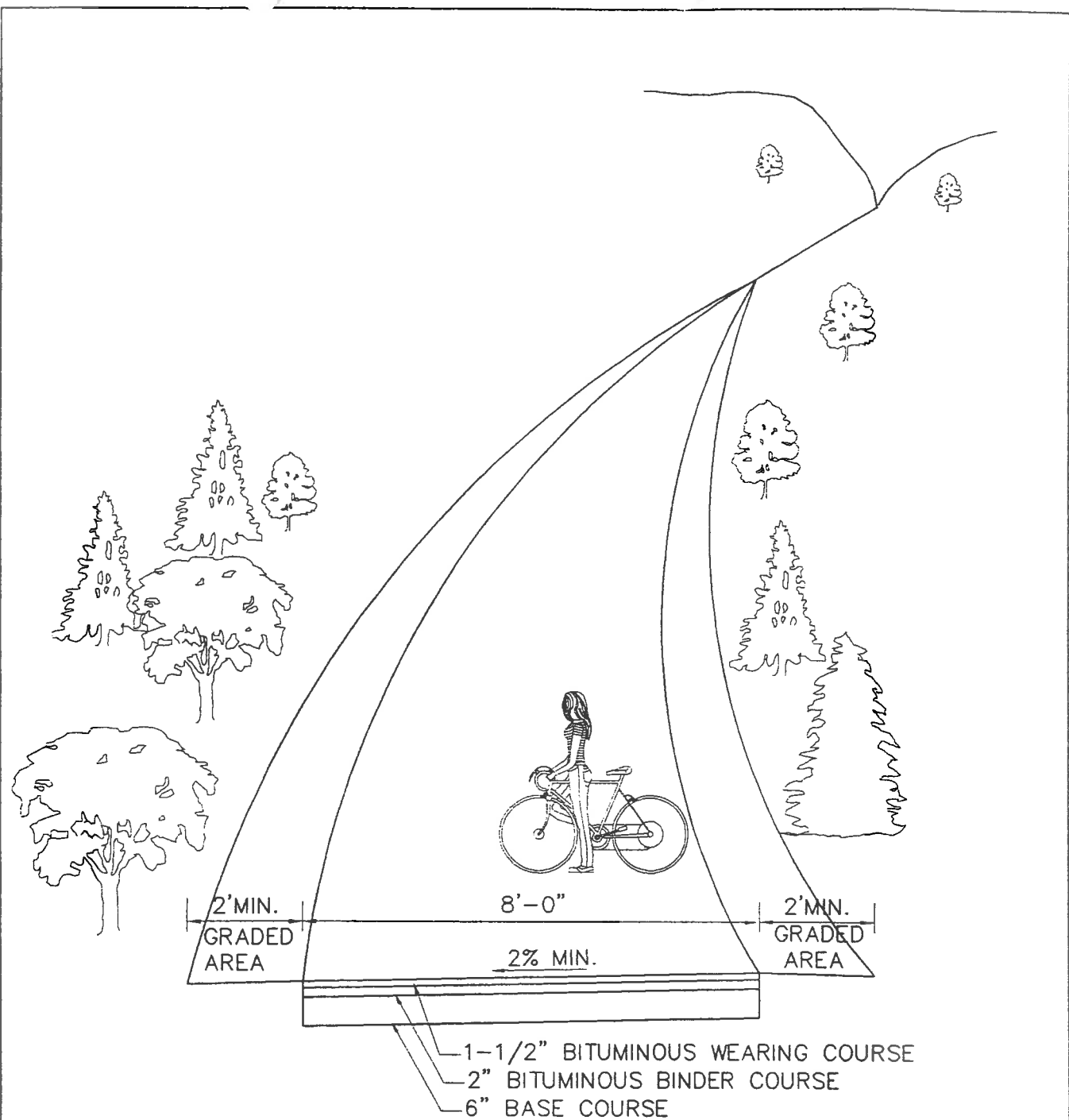
The following general design elements, design controls and other elements should be considered to provide an adequate and safe bike path facility.

- A. Paved width, operating width and vertical clearance to obstructions.
- B. Design speed of bicyclists.
- C. Horizontal alignment and superelevation.
- D. Grades on bike paths.
- E. Adequate stopping sight distances.
- F. Intersection design considerations.
- G. Adequate signing and marking.
- H. Pavement structure.
- I. Structures required to provide continuity.
- J. Drainage of pavement and adjacent areas.
- K. Fixed-source lighting luminaries and standards.
- L. Restriction of motor vehicle traffic.
- M. Multi-use bike paths.

### PAVEMENT SURFACE QUALITY

Bikeways must be free of bumps, holes and other surface irregularities if they are to attract and satisfy the needs of bicyclists. Utility covers and drainage grates should be at grade and, if possible, outside the expected area of travel. Approaches to railroad crossings should be improved as necessary to provide for safe bicycle crossings.





BIKE PATH CROSS SECTION  
IN SEPARATE RIGHT-OF-WAY

DOYLESTOWN COMMUNITY  
PEDESTRIAN AND BICYCLE CONSTRUCTION STANDARDS

FIGURE 1 - BIKE PATH CROSS SECTION

A minimum 5' foot separation between a bicycle path and an adjacent highway is desirable to confirm to both the bicyclist and the motorist that the bicycle path functions as an independent highway for bicycles. When this is not possible and the distance between the edge of the roadway and the bicycle path is less than 5 feet (1.5m), a suitable physical divider, such as a fence, dense shrubs or other barrier will be constructed.

See figure 2 for a typical cross-section parallel to a roadway.

Bicycle paths should be designed for a selected speed that is at least as high as the preferred speed of the faster bicyclists. In general, a minimum design speed of 20 mph (32km/h) should be used. When the grade exceeds 4 percent, or where strong prevailing tailwinds exist, a design speed of 30 mph (48km/h) is advisable.

On unpaved paths, where bicyclists tend to ride slower, a lower design speed of 15 mph (24km/h) can be used. Similarly, where the grades or the prevailing winds dictate, a higher design speed of 25 mph (40km/h) can be used. Since bicycles have a higher tendency to skid on unpaved surfaces, horizontal curvature design should take into account lower coefficients of friction.

#### HORIZONTAL ALIGNMENT AND SUPERELEVATION

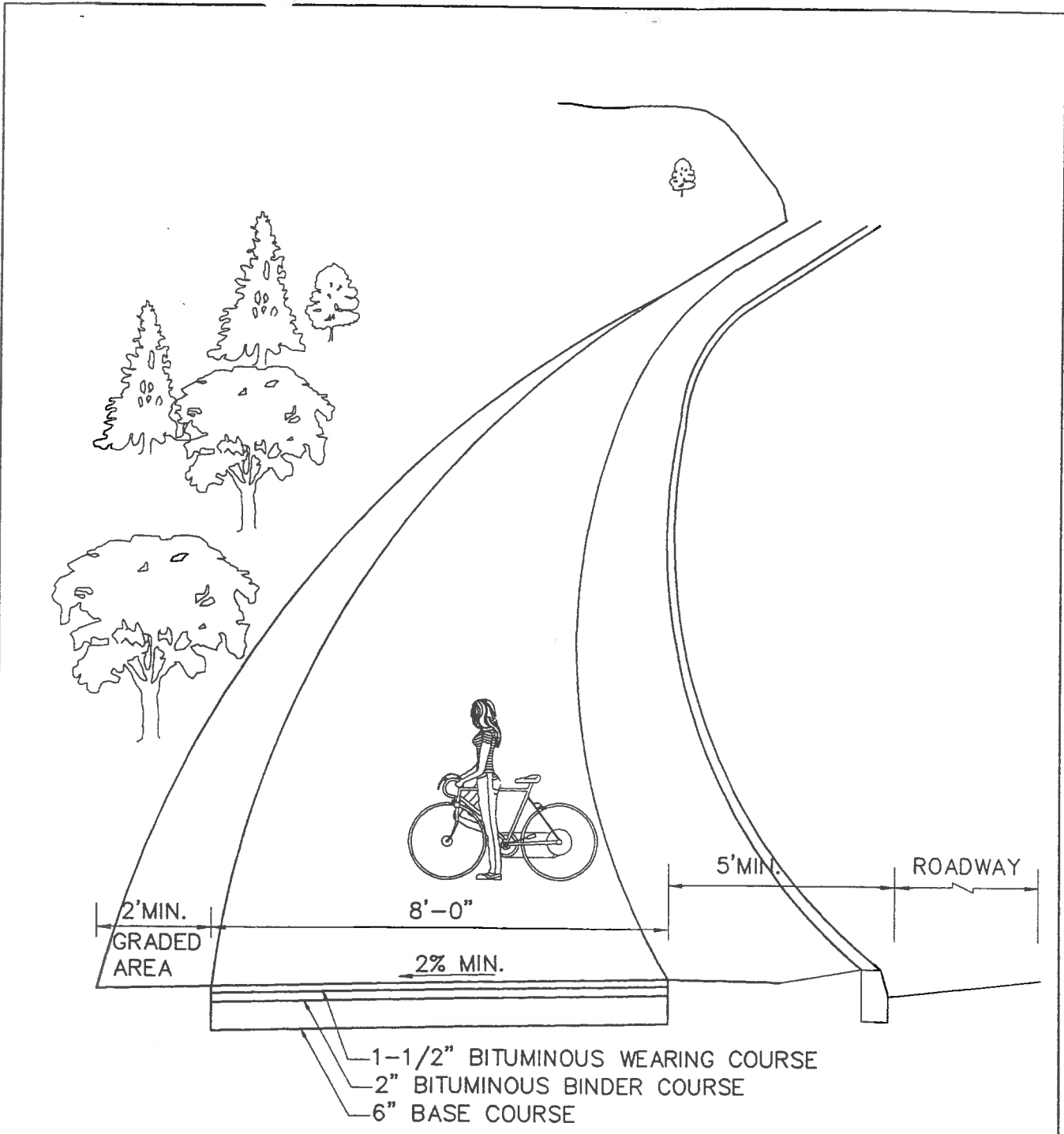
The minimum radius of curvature negotiable by a bicycle is a function of the superelevation rate of the bicycle path surface, the coefficient of friction between the bicycle tires and the bicycle path surface, and the speed of the bicycle. The minimum design radius of curvature can be derived from the following formula:

$$R = \frac{V^2}{15 (e+f)}$$

Where R = Minimum radius of curvature (ft),  
 V = Design speed (mph),  
 e = Rate of superelevation,  
 f = coefficient

TABLE 1 - DESIGN RADII FOR PAVED BICYCLE PATHS

Design Speed (mph) (1 mph = 1.6/km/hr)	Design Radius (feet) (1 ft. = 0.3m)
20	95
25	155
30	250
35	390
40	565



**BIKE PATH CROSS SECTION  
PARALLEL TO ROADWAY**

**DOYLESTOWN COMMUNITY  
PEDESTRIAN AND BICYCLE CONSTRUCTION STANDARDS**

**FIGURE 2 - BIKE PATH CROSS SECTION**

## VERTICAL GRADES

Grades on bicycle paths should be kept to a minimum, especially on long inclines. Grades greater than 5 percent are undesirable because the ascents are difficult for many bicyclists to climb and the descents cause some bicyclist to exceed the speeds at which they are competent. Where terrain dictates, grades over 5 percent and less than 500 feet (150m) long are acceptable when a higher design speed is used and additional width is provided.

Refer to information in Figure 3, Minimum Stopping Distances, Figure 4, Minimum Length-Vertical Curves and Figure 5, Minimum Lateral Clearance on Horizontal Curves, when designing a bicycle path.

## PAVEMENT STRUCTURE

While loads on bicycle paths will be substantially less than highway loads, paths should be designed to sustain without damage wheel loads of occasional emergency, patrol, maintenance and other motor vehicles that are expected to use or cross the path.

Construct and maintain a smooth riding surface on bicycle paths. Soil sterilants should be used where necessary to prevent vegetation from erupting through the pavement; and on portland cement concrete pavements, transverse joints, necessary to control cracking, should be saw cut to provide a smooth ride. Skid resistance qualities should not be sacrificed for the sake of smoothness. Broom finish or burlap drag concrete surfaces. See Figure 1 for Minimum Pavement Structure.

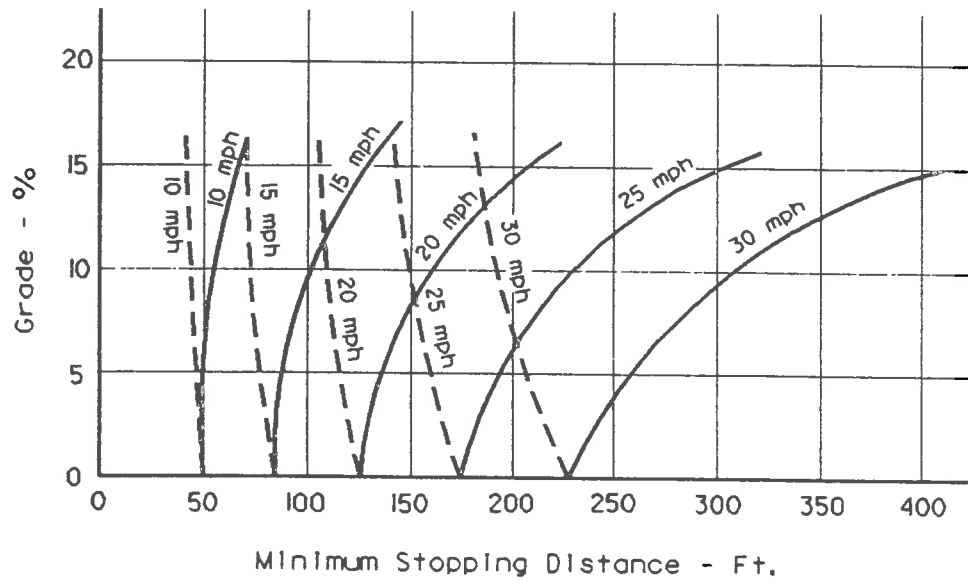
## BICYCLE LANES

Bicycle lanes can be considered when it is desirable to delineate available road space for preferential use by bicyclists and motorists, and to provide for more predictable movements by each. Any reconstruction to existing shoulder or roadway areas designated as a Bicycle Lane will be in accordance to the Doylestown Township construction regulations and approved by the Township engineer. Figure 6 indicates the usual locations for bike lanes relative to the roadway.

## STRUCTURES

Railings, fences, or barriers on both sides of a bicycle path bridge should be a minimum of 4.5 feet (1.4m) high. Smooth rub rails should be attached to the barriers at a handlebar height of 3.5 feet (1.1m).

On all new bridge decks, bicycle-safe expansion joints are required.



$$S = \frac{v^2}{30(f \pm G)} + 3.67 v$$

Where: S = Minimum Sight Distance, Ft.  
 V = Velocity, mph  
 f = Coefficient of Friction (use 0.25)  
 G = Grade Ft./Ft. (rise/run)

Descend (-G) ———  
 Ascend (+G) - - - -

(Metric Conversion: 1 Ft. = 0.3 m, 1 mph = 1.6 km/h)

Figure 3 Minimum Stopping Sight Distances.

$$L = 2S - \frac{200(\sqrt{h_1} + \sqrt{h_2})^2}{A} \text{ When } S > L$$

$$L = \frac{AS^2}{100(\sqrt{2h_1} + \sqrt{2h_2})^2} \text{ When } S < L$$

$$L_{MIN} = 2V$$

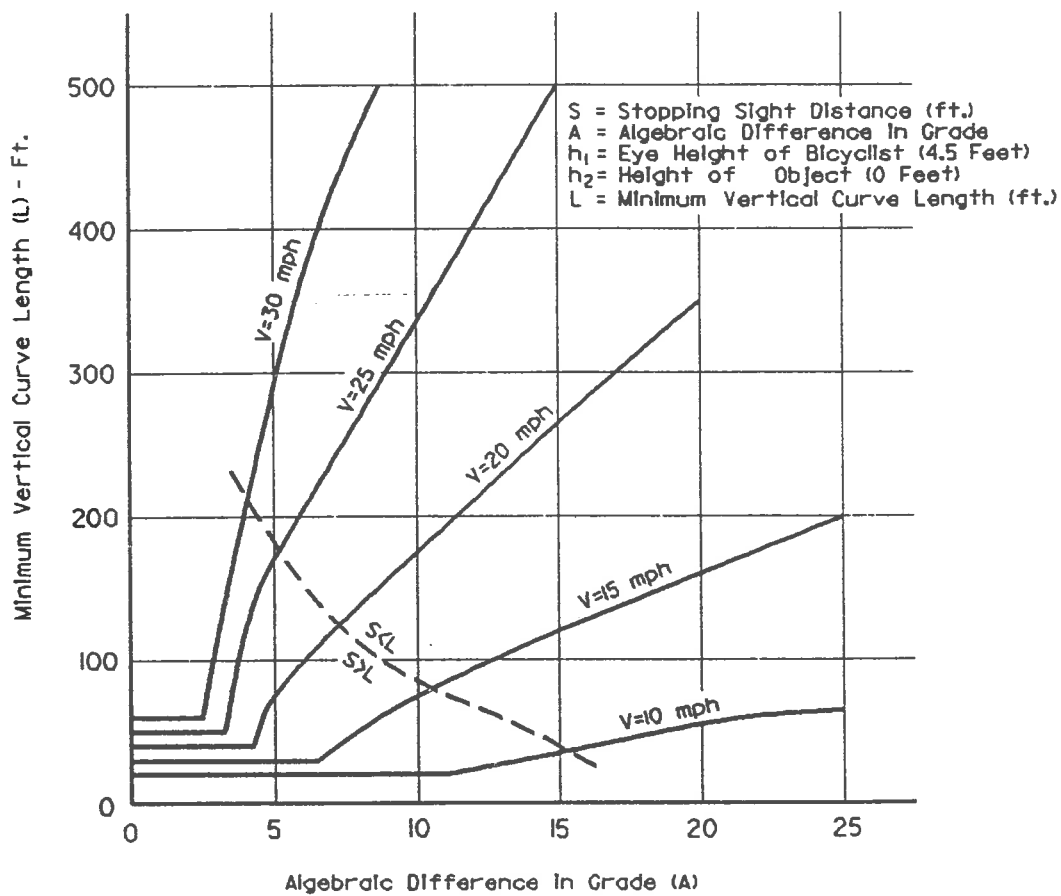
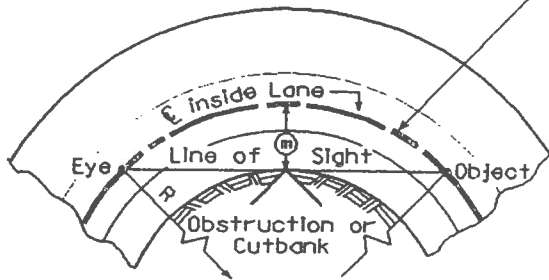


Figure 4 Minimum Length of Vertical Curves.

Sight distance (S) measured along this line



Line of sight is 2.0' above  $\mathcal{C}$  inside lane at point of obstruction.

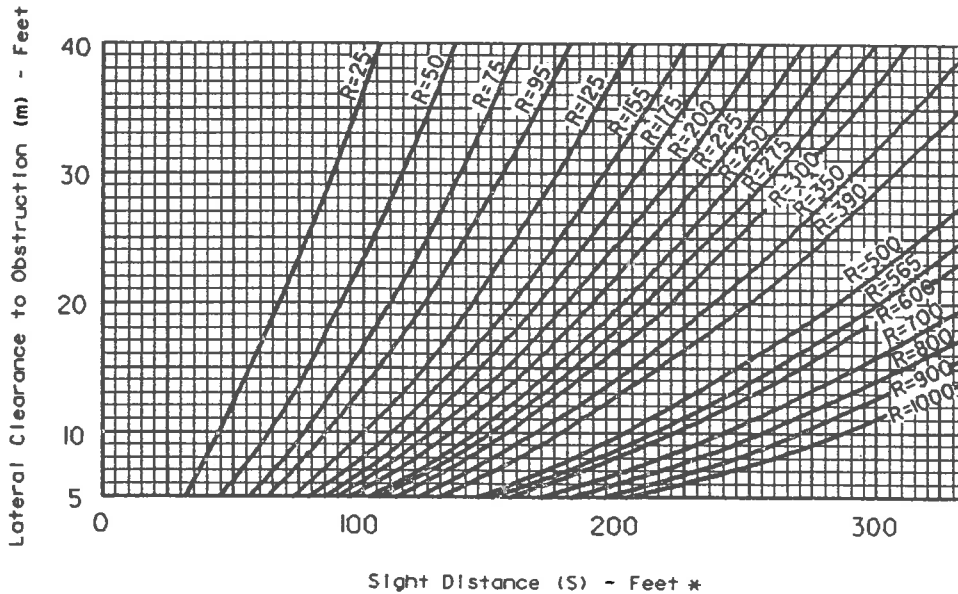
S = Sight distance in feet.  
 R = Radius of  $\mathcal{C}$  inside lane in feet.  
 m = Distance from  $\mathcal{C}$  inside lane in feet.  
 V = Design speed for S in mph

Angle is expressed in degrees

$$m = R \left[ \text{vers} \left( \frac{28.65S}{R} \right) \right]$$

$$S = \frac{R}{28.65} \left[ \cos^{-1} \left( \frac{R-m}{R} \right) \right]$$

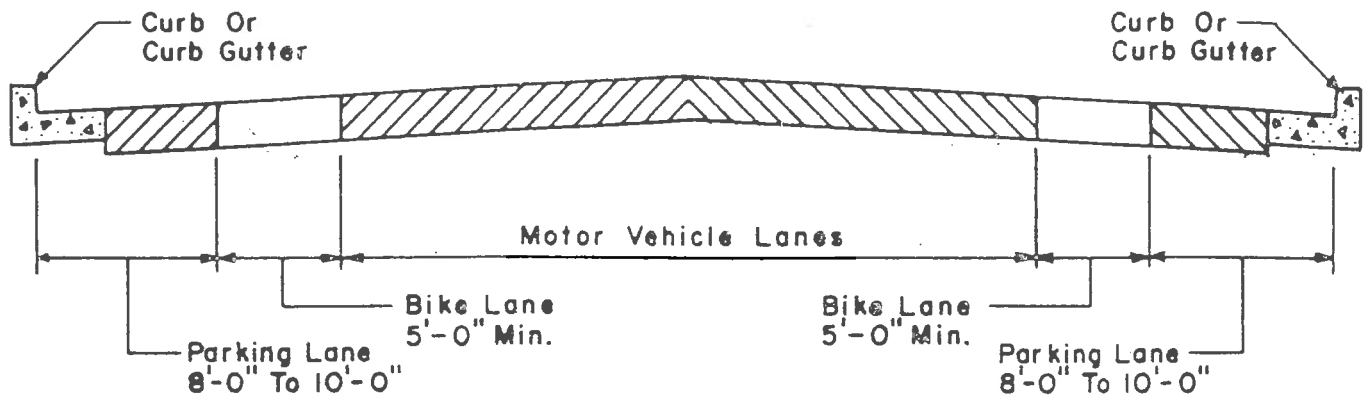
Formula applies only when S is equal to or less than length of curve.



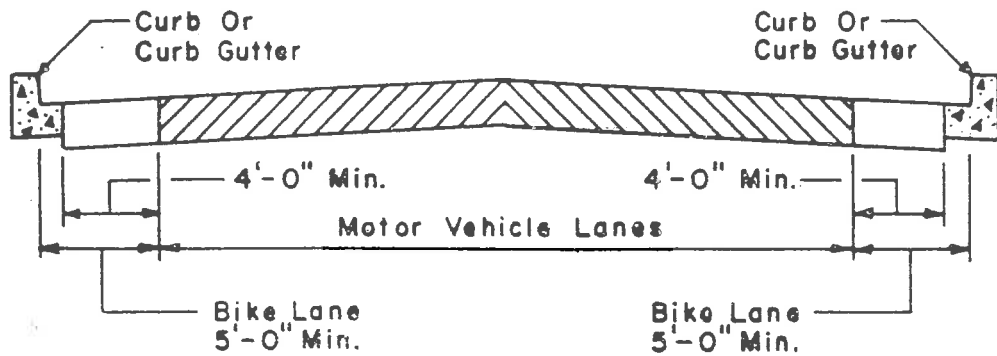
(Metric Conversion: 1 Ft. = 0.3 m.)

\* Lateral clearances on horizontal curves should be calculated based on the sum of the stopping sight distances for bicyclists travelling in opposite directions around the curve. See text for additional discussion.

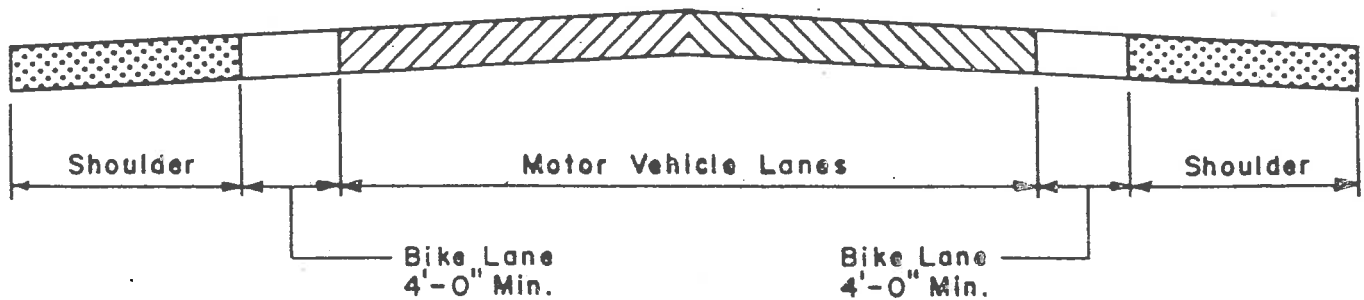
Figure 5 Minimum Lateral Clearances on Horizontal Curves.



CURBED STREET WITH PARKING



CURBED STREET WITHOUT PARKING



STREET OR HIGHWAY WITHOUT CURB OR GUTTER

FIGURE 6  
TYPICAL BIKE LANE CROSS SECTIONS



Expansion dams in all existing structures, where a bicycle lane is incorporated into the existing roadway shoulder, will be reviewed for retrofit of bicycle friendly expansion joints.

Where it is necessary to fit a bicycle path onto an existing highway bridge, use existing sidewalks or shoulder as one-way or two-way facilities.

### DRAINAGE

The recommended minimum pavement cross slope of 2 percent adequately provides for drainage. Sloping in one direction instead of crowning is preferred. Where a bicycle path is constructed on the side of a hill, a swale of suitable dimensions should be placed on the uphill side to intercept the hillside drainage. Drainage grates and manhole covers should be located outside of the travel path of bicyclists. Seeding, mulching and sodding of adjacent slopes, swales and other erodible areas should be included in the design plans.

### LIGHTING

Lighting allows the bicyclist to see the bicycle path direction, surface conditions, and obstacles. Bicycle paths utilized by children walking to and from school should be illuminated. Lighting should also be considered when nighttime security could be a problem on bike paths anticipated for non-daylight hour usage. Average maintained horizontal illumination levels of 0.5 foot-candle (5 lux) to 2 foot-candles (22 lux) should be used.

### RESTRICTION OF MOTOR VEHICLE TRAFFIC

Provisions can be made for a lockable, removable post to permit entrance by authorized vehicles. The post should be permanently reflectorized for nighttime visibility and painted a bright color for improved daytime visibility. When more than one post is used, a 5-foot (1.5m) spacing is desirable.

### SUPPLEMENTAL FACILITIES

Long-term bicycle parking is needed at locations such as employment centers, transit stations, and multifamily dwellings. Bike racks should be provided which secure the frame, both wheels and accessories and which offer protection from the weather. Short-term bicycle parking is needed at locations such as shopping centers, libraries, recreation areas, and post offices. Bike racks should be very convenient and be near building entrances or other highly visible areas which are self-policing.

Bicycle racks should be able to accommodate a wide range of bicycle shapes and sizes including tricycles and trailers.

## TRAFFIC CONTROL DEVICES

At intersections where bicycle traffic exists or is anticipated, bicycles should be considered in the timing of the traffic signal cycle, as well as the traffic detection device. A bicyclist can cross an intersection under the same signal phasing arrangement as motor vehicles; however, on multi-lane streets an all-red clearance interval should be used. Any revision to existing traffic signal timing or construction of a new traffic signal shall conform to Doylestown Township construction standards. The proposed traffic signal plans will be reviewed and approved by the Doylestown Township engineer and PennDOT.

To determine the clearance interval, a bicyclist's speed of 10 mph (16m/h) and a perception/reaction/braking time of 2.5 seconds should be used. Detectors for traffic-actuated signals should be sensitive to bicycles and should be located in the bicyclist's expected path, including left turn lanes. The use of pedestrian buttons are a preferred alternative to the use of detectors providing the cyclist does not have to dismount or make an unsafe leaning movement. Where programmed visibility signal heads are used, they should be maintained to ensure that they are visible to bicyclists who are properly positioned on the road.

## SIGNING AND PAVEMENT MARKING

All bikeway facilities should be properly signed and marked for identification and to convey instructions to either bicyclists, motorists, or both, in accordance with the Manual for Uniform Traffic Devices (MUTCD). The uniform application of traffic control devices should be used to encourage proper bicyclist behavior.

Guide signing, such as to indicate directions, destinations, distances, route numbers, and names of crossing streets, should be used in the same manner as they are used on highways.

Use a 4-inch (10m) wide yellow skid resistant centerline stripe to separate opposite directions of travel on all bicycle paths that anticipate high bicycle traffic usage.

Use a 4" inch (10m) wide white skid resistant stripe as an edge line on all bicycle paths where definition of path width is appropriate.

Figure 7 presents examples of details on pavement markings for bicycle lanes approaching motorist right-turn only lanes. Where there are numerous left-turning bicyclists, a separate turning lane should be constructed. The design of bicycle lanes should also include appropriate signing at intersections to reduce the number of conflicts. General guidance for pavement marking of bicycle lanes is contained in the MUTCD.

It may be advantageous to sign some roadways as bicycle routes. For long bicycle routes, a standard bicycle route marker with a numerical designation in accordance with Part IX of the Manual on Uniform Traffic Control Devices (MUTCD) can be used in place of a bicycle route sign. The number may correspond to a parallel highway, indicating the route is a preferred alternate route for bicyclists. Use supplemental plaques with bicycle route signs or markers to furnish additional information, such as direction changes in the route and intermediate range distance and destination information. Bicycle route signing should not end at a barrier. Information directing the bicyclist around the barrier should be provided.

## MAINTENANCE

Signs and pavement markings should be inspected regularly and kept in good condition. For bike paths, attention should be given to maintaining the full paved width. Trees, shrubs and other vegetation should be controlled by trimming or removal to provide adequate clearances and sight distances. When snow removal is required, it should be in the form of plowing since deicing agents and abrasives can damage bicycles. The Township or Borough should be responsible for the control, maintenance and policing of the bicycle facilities.

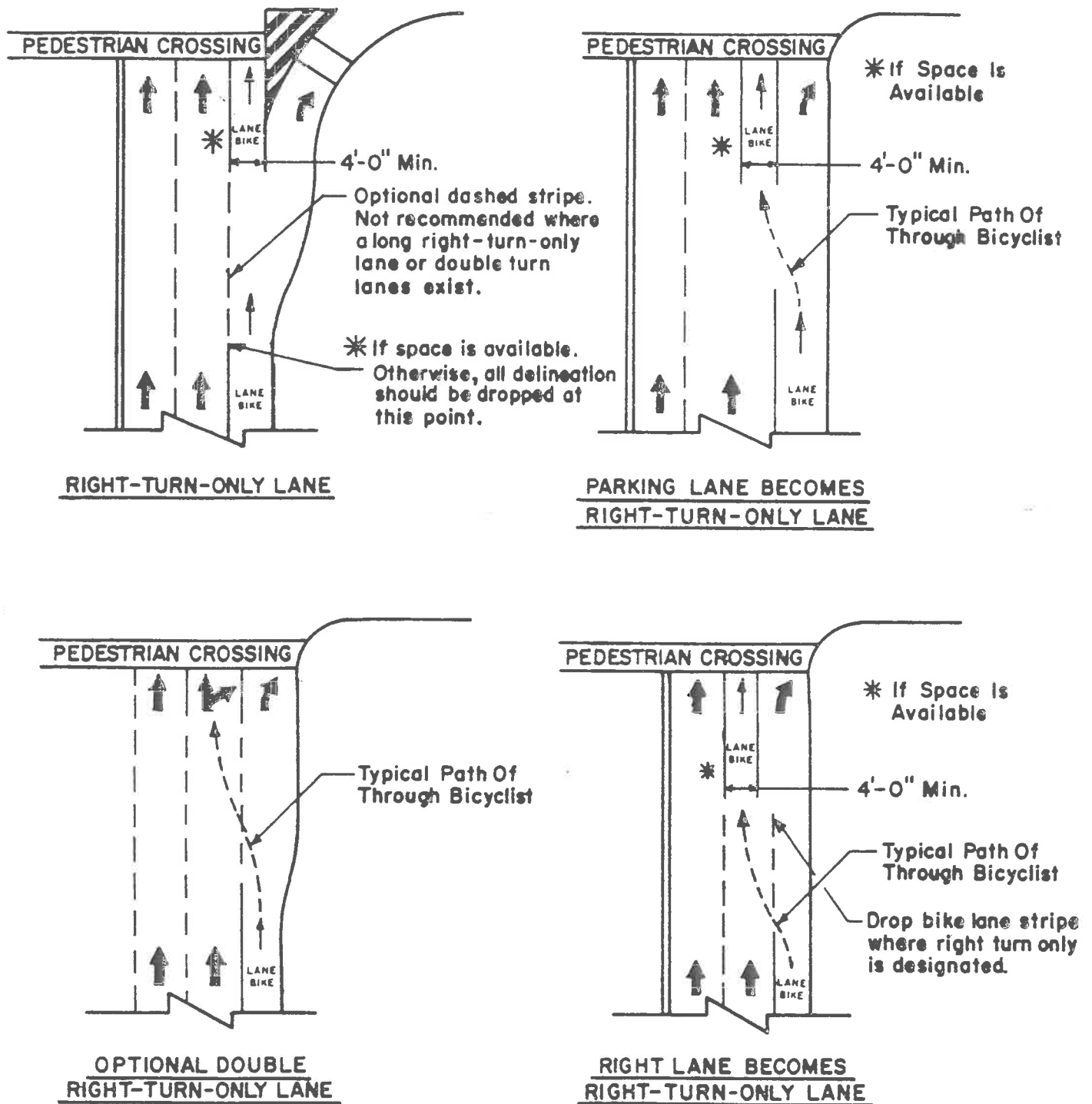


FIGURE 7  
BIKE LANES APPROACHING MOTOR VEHICLE  
RIGHT-TURN-ONLY LANES

## REQUIRED PERMITS

All bikeways located within the PaDOT's right-of-way should have a Bikeway Occupancy permit (Form TE-700) as shown in Figure 9-10 and should meet the requirements of the AASHTO Bikeway Guide. Bikeway Occupancy Permits for the establishment of bikeways within the Department's right-of-way, except Interstate and Limited Access right-of-way, shall be issued by the District Engineer. For those bikeway projects occupying Interstate or Limited Access right-of-way, approval from the Bureau of Design and the FHWA will be required prior to issuing the permit. The Bikeway Occupancy Permit should be modified accordingly to fit the needs of each bikeway construction project.


Plans for all bikeways subject to PennDOT review and approval shall contain the programming related document items outlined on the following chart. (Figure 8)

**FIGURE 8**  
**PROGRAMMING-RELATED DOCUMENTS**  
**REQUIRED FOR BIKEWAY CONSTRUCTION PROJECTS**

PROGRAMMING-RELATED DOCUMENT ITEMS	TYPES OF BIKEWAY PROJECTS			
	BIKE PATH ON NEW OR EXISTING R/W	BIKE LANE REQUIRING ADDITIONAL R/W	BIKE LANE WITHIN EXISTING R/W	SHARED ROADWAY
(A) Location Map	X	X	X	(1)
(B) Strip Map, 200 Scale	X	X	X	(1)
(C) Detail Map, 50 Scale Or Larger For Areas Of Required R/W, Intersections, Points Of Conflict (Hazards)	X	X	X	(1)
(D) Cost And Quantities	X	X	X	X
(E) Present And Future Expected Use	X	X	X	X
(F) Support Facilities	X	—	—	—
(G) Analysis Of Turning Movements And Capacity At Intersections	(2)	X	X	X
(H) Bikeway Profile And Typical Sections	X	X	(1)	(1)
(I) Consideration Of: 1. Drainage (Hazard Or Requirement) 2. Auto On Street Parking Requirement 3. Mass Transit Operation Effects 4. Alternative Locations	X — — X	X X X —	X X X —	(2) — X —
(J) Maintenance Agreements	X	X	X	(2)
(K) Overall Plan Relating Bikeway Project Existing Or Proposed Areawide System With Due Consideration To Contiguous Routes	X	X	X	X

X = Required item.  
(1) = Use latest highway plans.  
(2) = If applicable.

**FIGURE 9  
BIKEWAY OCCUPANCY PERMIT**

<p><b>TE-700 (10/88)</b> (Reproduced Locally)</p> 	<p><b>BIKEWAY OCCUPANCY PERMIT</b></p>	<p>PERMIT NO. _____</p>												
<p>WHEREAS, It is desired to designate Bikeways on or along certain Highways as shown on the sketch attached hereto and made a part hereof, and</p> <p>WHEREAS, It is desired to have such Bikeways established and marked in accordance with the standards, rules and regulations of the Pennsylvania Department of Transportation.</p> <p>NOW THEREFORE, BE IT RESOLVED;</p> <p>That the following routes are hereby established for Bikeways:</p> <table border="1" style="width:100%; border-collapse: collapse; margin-top: 10px;"> <thead> <tr> <th style="width: 30%;">ROUTE VIA _____</th> <th style="width: 10%;">FROM _____</th> <th style="width: 10%;">TO _____</th> <th style="width: 10%;">TYPE OF BIKEWAY</th> <th style="width: 20%;">DESCRIPTIVE LOCATION</th> <th style="width: 10%;">TYPE OF SEPARATION (IF ANY)</th> </tr> </thead> <tbody> <tr> <td colspan="6" style="height: 100px;"> <p>Said Bikeway to be established and maintained under and subject to the following items and conditions:</p> <p>(a) The _____ of _____ county of _____ shall be responsible for the policing*, maintenance (including snow removal), and proper traffic signing and marking of the bikeway.</p> <p>*Including the enactment of a local ordinance to ban all motorized vehicles other than maintenance vehicles and snowmobiles when snow conditions and local ordinances permit.</p> <p>(b) The Department maintains the right to cancel this permit upon thirty (30) day written notification to the permittee.</p> <p>(c) Shall provide and annually repair the necessary signs and markings in accordance with the standards as prescribed by the Secretary of Transportation</p> <p>(d) The Bikeway hereby established shall be discontinued and all signs and markings thereon shall be removed therefrom if changes in physical or traffic conditions make such Bikeway impracticable or hazardous in the judgement of the Secretary of Transportation.</p> </td> </tr> </tbody> </table>			ROUTE VIA _____	FROM _____	TO _____	TYPE OF BIKEWAY	DESCRIPTIVE LOCATION	TYPE OF SEPARATION (IF ANY)	<p>Said Bikeway to be established and maintained under and subject to the following items and conditions:</p> <p>(a) The _____ of _____ county of _____ shall be responsible for the policing*, maintenance (including snow removal), and proper traffic signing and marking of the bikeway.</p> <p>*Including the enactment of a local ordinance to ban all motorized vehicles other than maintenance vehicles and snowmobiles when snow conditions and local ordinances permit.</p> <p>(b) The Department maintains the right to cancel this permit upon thirty (30) day written notification to the permittee.</p> <p>(c) Shall provide and annually repair the necessary signs and markings in accordance with the standards as prescribed by the Secretary of Transportation</p> <p>(d) The Bikeway hereby established shall be discontinued and all signs and markings thereon shall be removed therefrom if changes in physical or traffic conditions make such Bikeway impracticable or hazardous in the judgement of the Secretary of Transportation.</p>					
ROUTE VIA _____	FROM _____	TO _____	TYPE OF BIKEWAY	DESCRIPTIVE LOCATION	TYPE OF SEPARATION (IF ANY)									
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**FIGURE 10  
BIKEWAY OCCUPANCY PERMIT  
(Continued)**

SPECIAL CONDITIONS OF APPROVAL

A certified copy of this resolution shall be sent to the Deputy Secretary for Highway Administration, and upon his approval, the aforesaid Bikeway shall be deemed to have been authorized in accordance with the terms thereof.

ATTEST:

\_\_\_\_\_  
Chief Clerk

\_\_\_\_\_  
Mayor

\_\_\_\_\_  
Secretary

I hereby certify the foregoing to be a true and correct copy of resolution of the  
of \_\_\_\_\_, 19\_\_\_\_\_.  
the \_\_\_\_\_ day of \_\_\_\_\_, 19\_\_\_\_\_.

\_\_\_\_\_  
Chief Clerk

(SEAL)

The establishment of the aforesaid Bikeway is hereby approved in accordance with the terms and conditions expressed in the foregoing resolution.

Date: \_\_\_\_\_, 19\_\_\_\_\_

\_\_\_\_\_  
District Engineer  
Engineering District \_\_\_\_\_

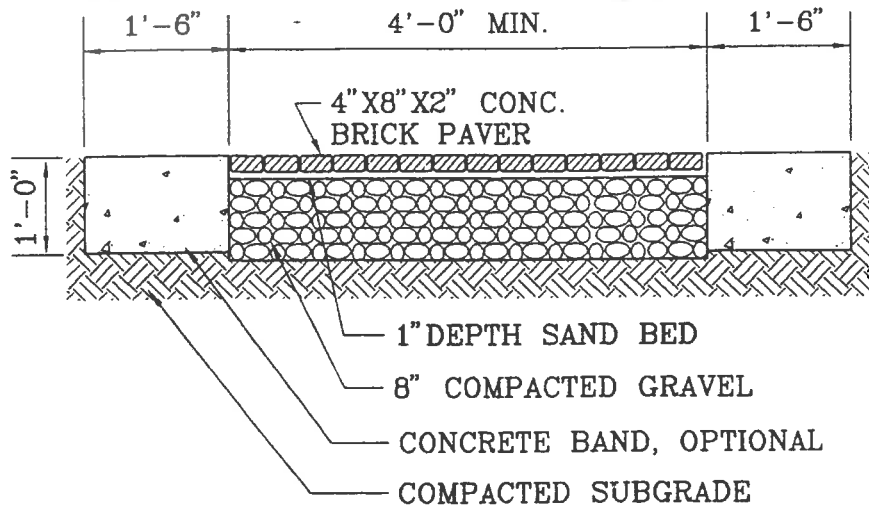
\_\_\_\_\_  
Deputy Secretary for Highway Administration



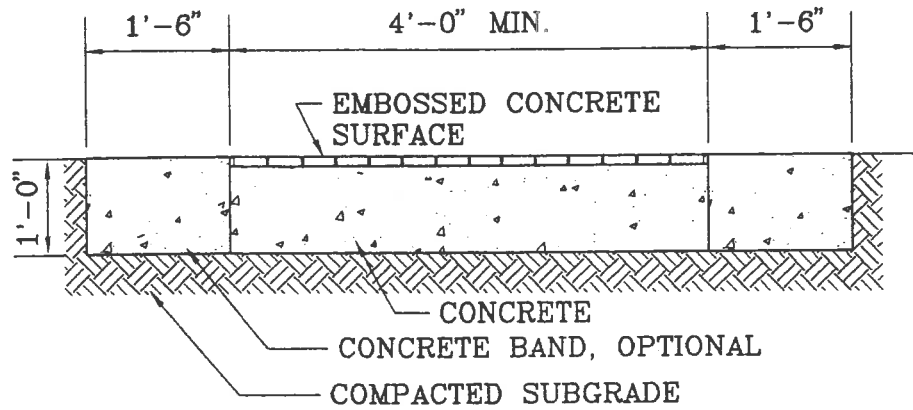
## **SECTION II CONSTRUCTION DETAILS**

The following are construction details adopted by Doylestown Township for the construction of a Pedestrian and Bicycle Facilities within the Township.

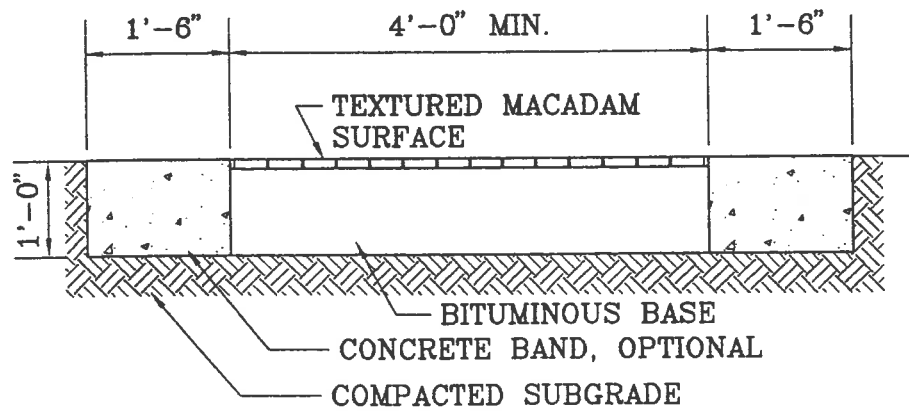
Any construction items not contain within these construction details will require review and approval by the Doylestown Township Engineer and the Doylestown Township Board of Supervisors.



### BRICK PAVER WALK



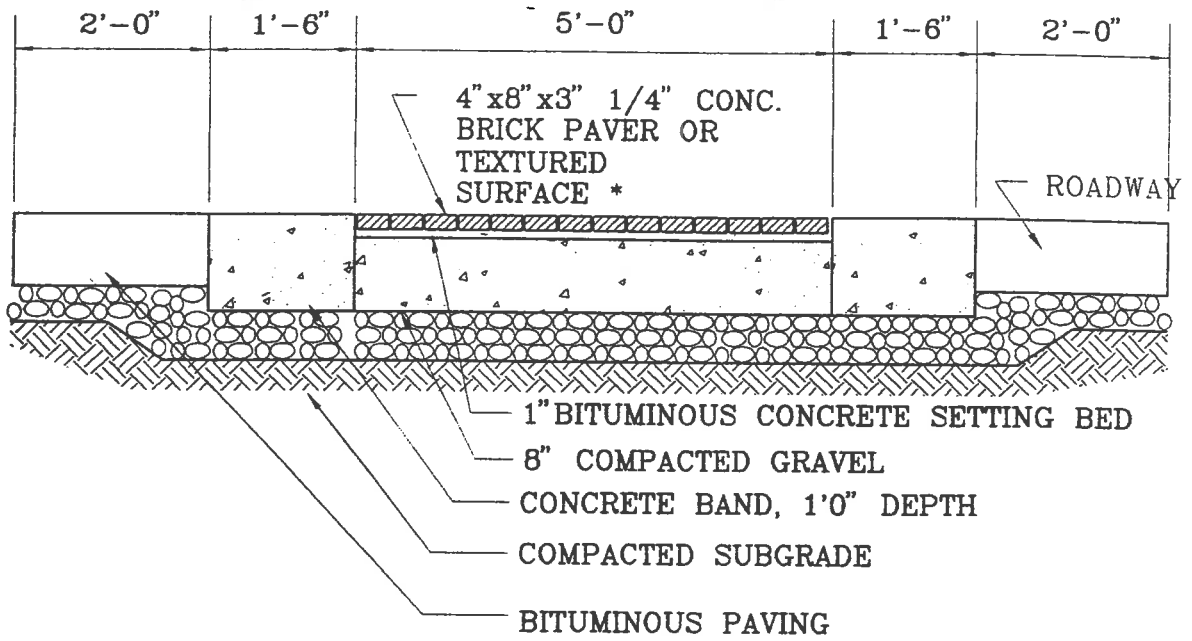
### EMBOSSSED CONCRETE WALK



### TEXTURED MACADAM WALK

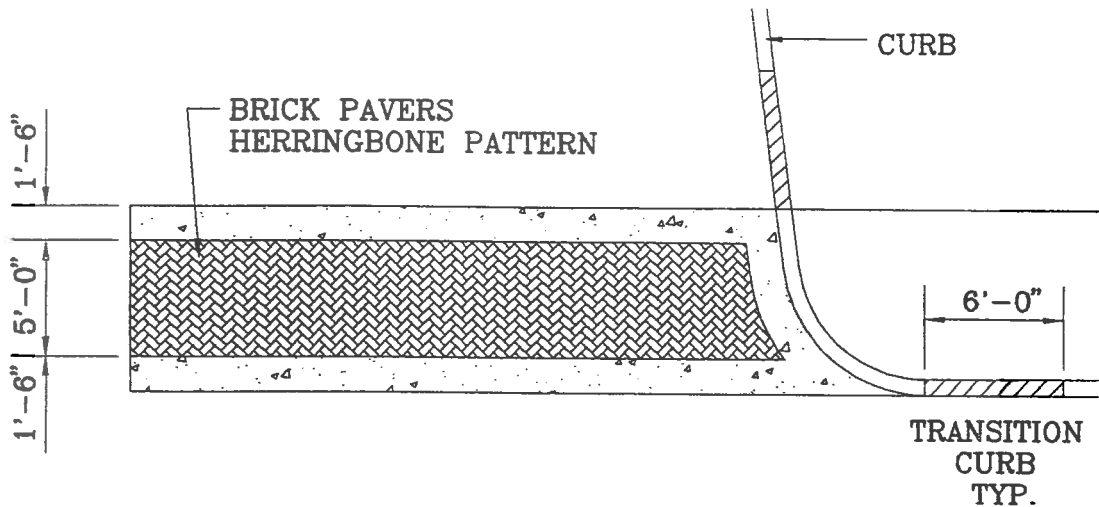
## DOYLESTOWN COMMUNITY PEDESTRIAN AND BICYCLE CONSTRUCTION STANDARDS

### SIDEWALK



### BRICK PAVER SECTION

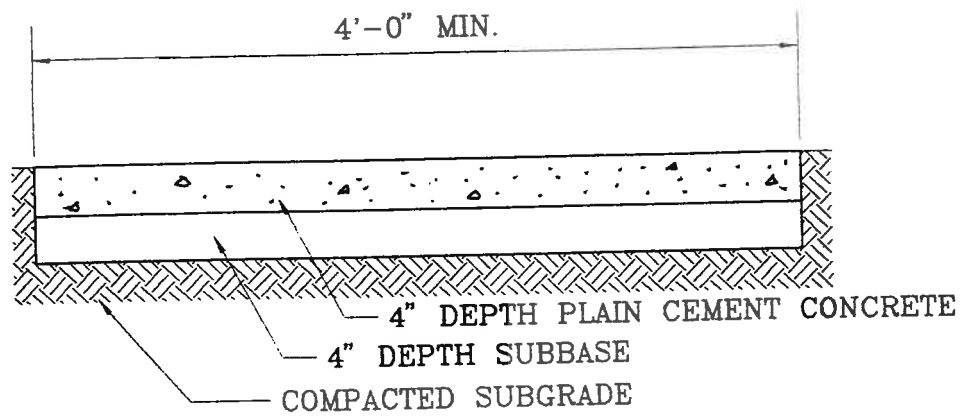
\*SEE TEXTURED CONCRETE OR MACADAM DETAIL



### BRICK PAVER WALK - PLAN

PREFERRED TREATMENT AT ALL ROADWAY CROSSINGS

DOYLESTOWN COMMUNITY  
PEDESTRIAN AND BICYCLE CONSTRUCTION STANDARDS  
INTERSECTION DETAIL



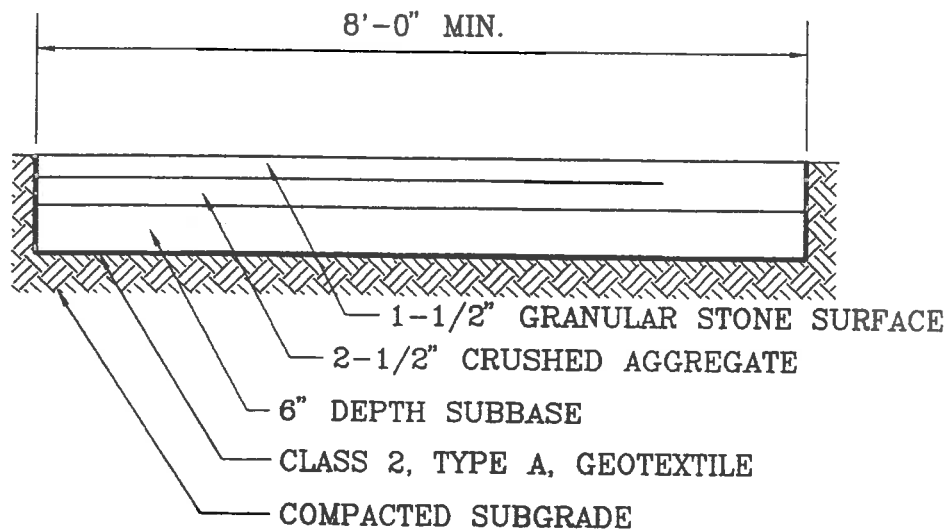
CONCRETE WALK — CROSS SECTION

DOYLESTOWN COMMUNITY  
 PEDESTRIAN AND BICYCLE CONSTRUCTION STANDARDS

CONCRETE SIDEWALK — CROSS SECTION

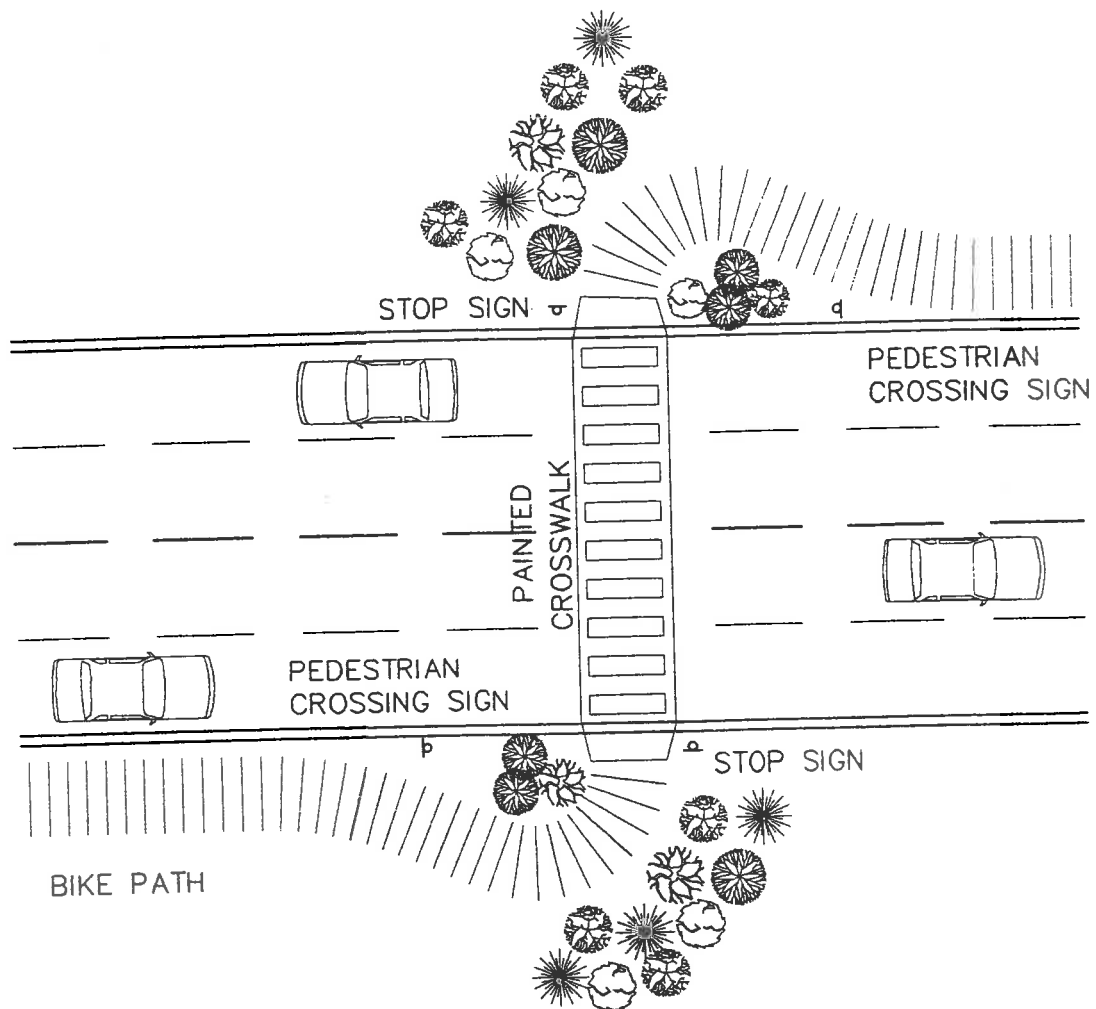
Prepared By: PICKERING, CORTS & SUMMERSON, INC.

APRIL, 1996



UNPAVED PATH - CROSS SECTION

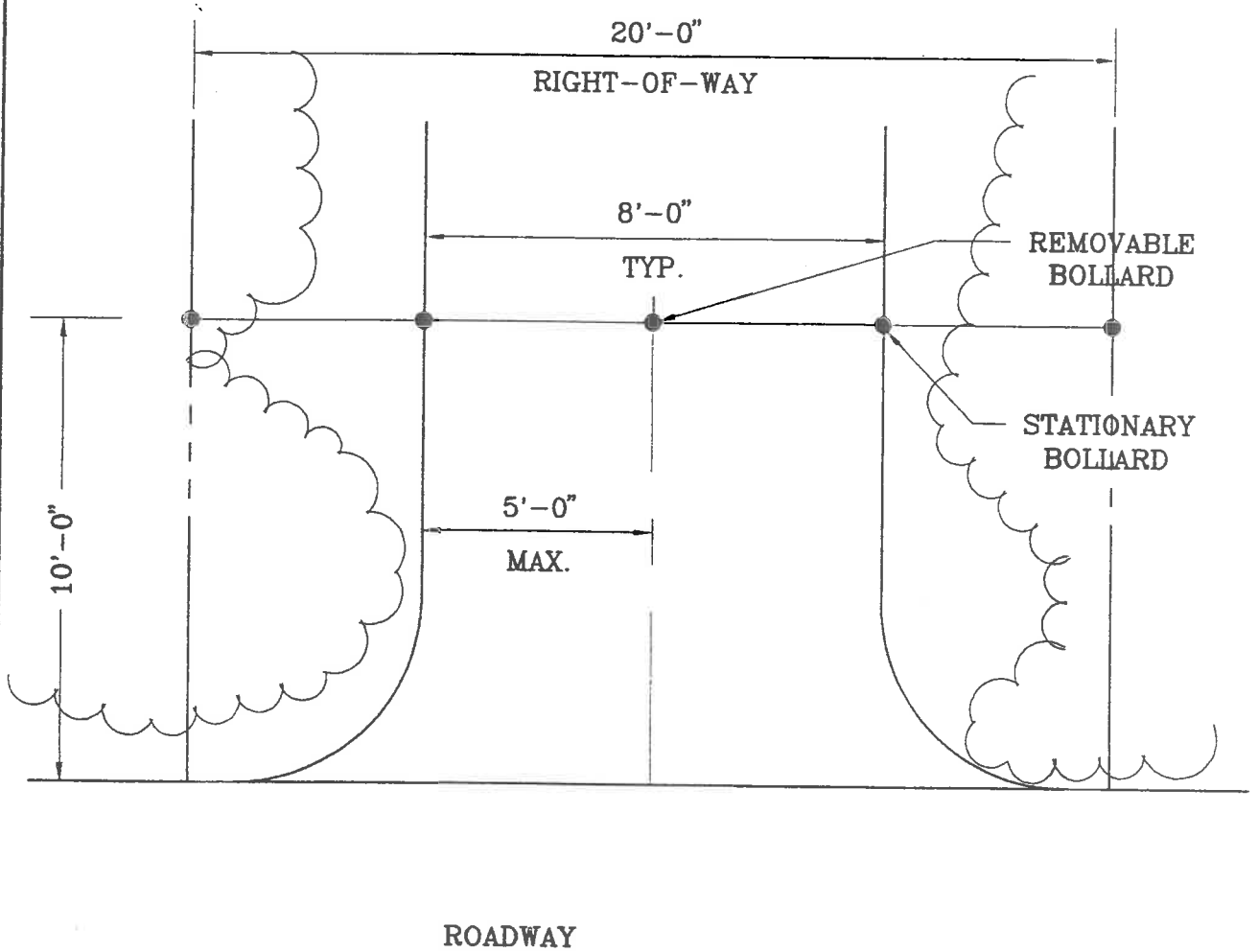
DOYLESTOWN COMMUNITY  
 PEDESTRIAN AND BICYCLE CONSTRUCTION STANDARDS  
 UNPAVED WALK - CROSS SECTION



DOYLESTOWN COMMUNITY  
 PEDESTRIAN AND BICYCLE CONSTRUCTION STANDARDS  
 MID - BLOCK CROSSWALK

Prepared By: PICKERING, CORTS & SUMMERSON, INC.

APRIL, 1996

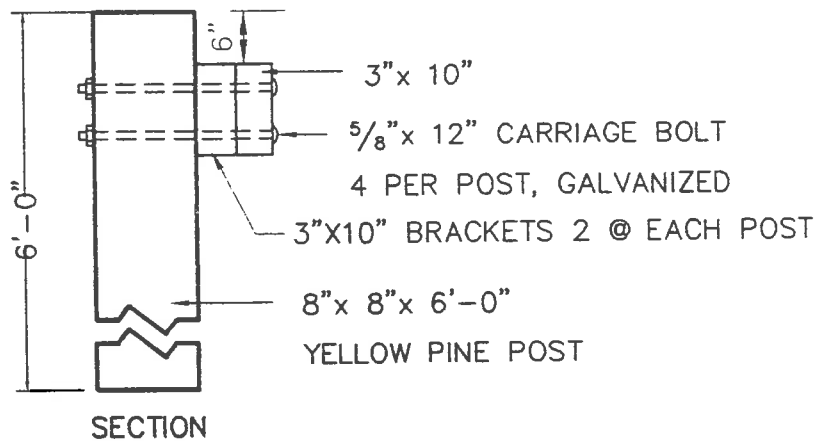
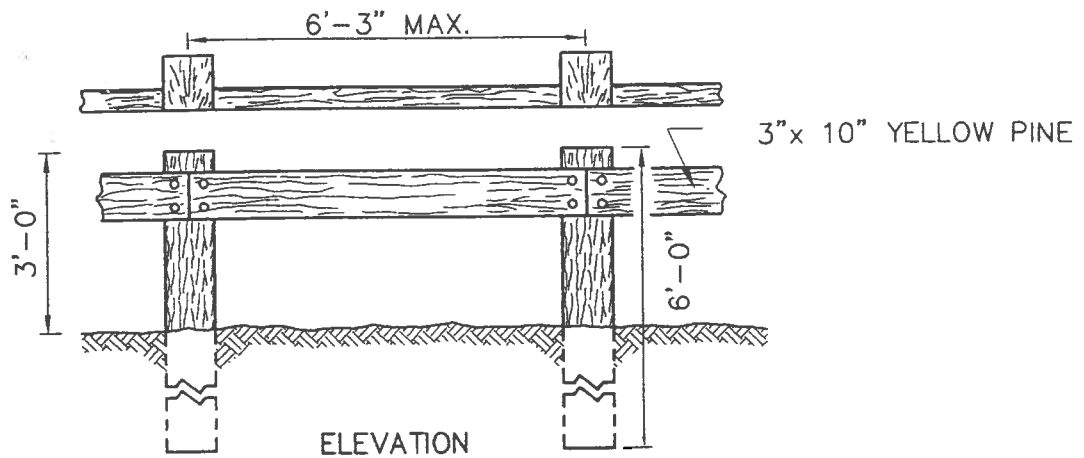


NOTE:  
BOLLARDS TO BE PLACED AT BIKE PATH AND STREET INTERSECTIONS WHERE POSSIBLE VEHICULAR TRAFFIC ENTERING THE PEDESTRIAN\BIKE PATH IS ANTICIPATED.

DOYLESTOWN COMMUNITY  
PEDESTRIAN AND BICYCLE CONSTRUCTION STANDARDS  
BOLLARD PLACEMENT

Prepared By: PICKERING, CORTS & SUMMERSON, INC.

APRIL, 1996



TIMBER GUIDE RAIL  
NTS

1. POST AND RAILS SHALL BE PRESSURE TREATED WITH WATER-BORNE PRESERVATIVES, CCA TREATMENT (LP-22) @ .4 PCF. (40 YEAR)
2. ALL MOUNTING HARDWARE SHALL BE IN ACCORDANCE WITH ASTM-A307 AND GALVANIZED IN ACCORDANCE WITH ASTM-A153 OR ASTM-B454.

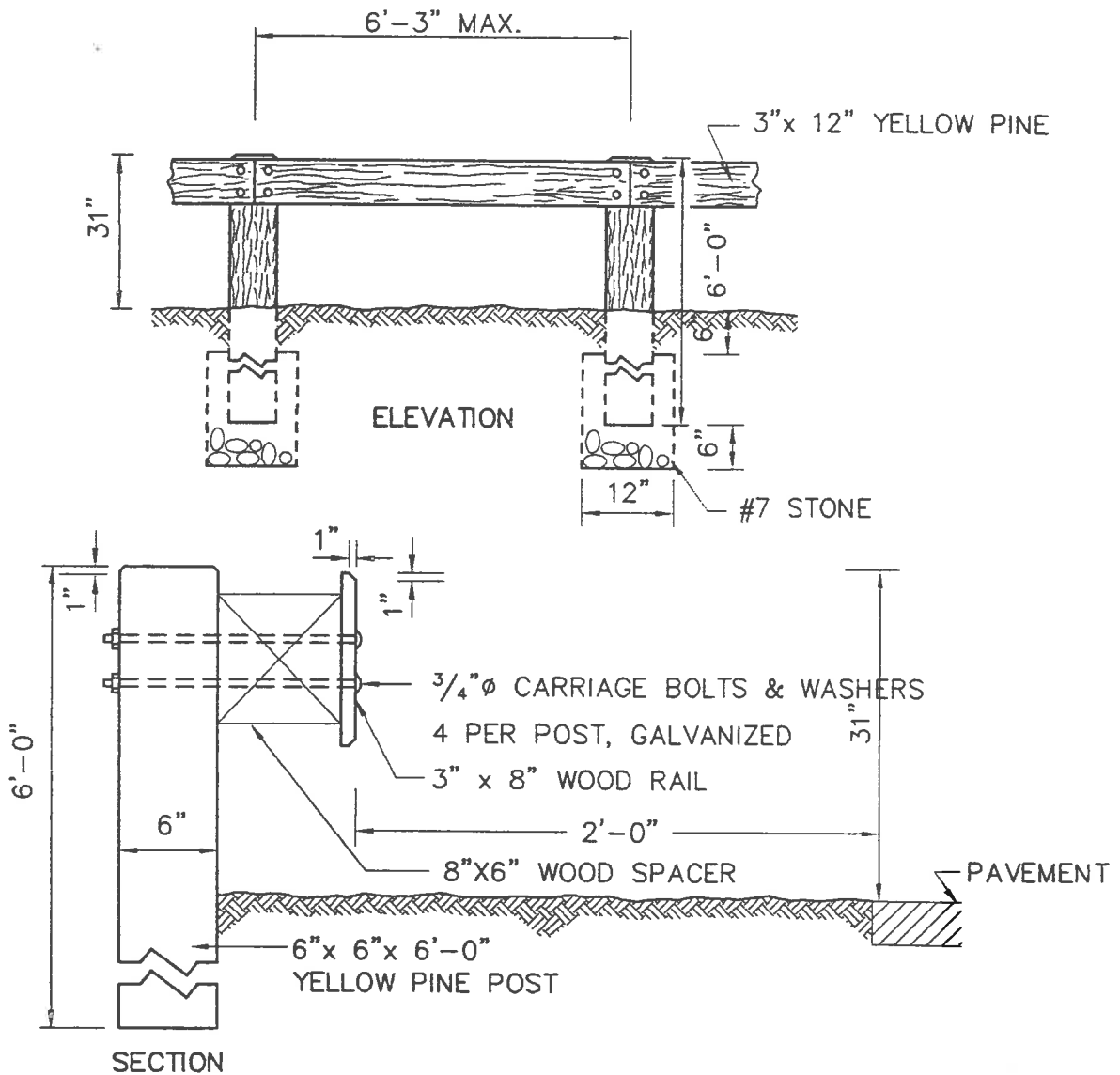
DOYLESTOWN COMMUNITY  
PEDESTRIAN AND BICYCLE CONSTRUCTION STANDARDS

TIMBER GUIDE RAIL

Prepared By: PICKERING, CORTS & SUMMERSON, INC.

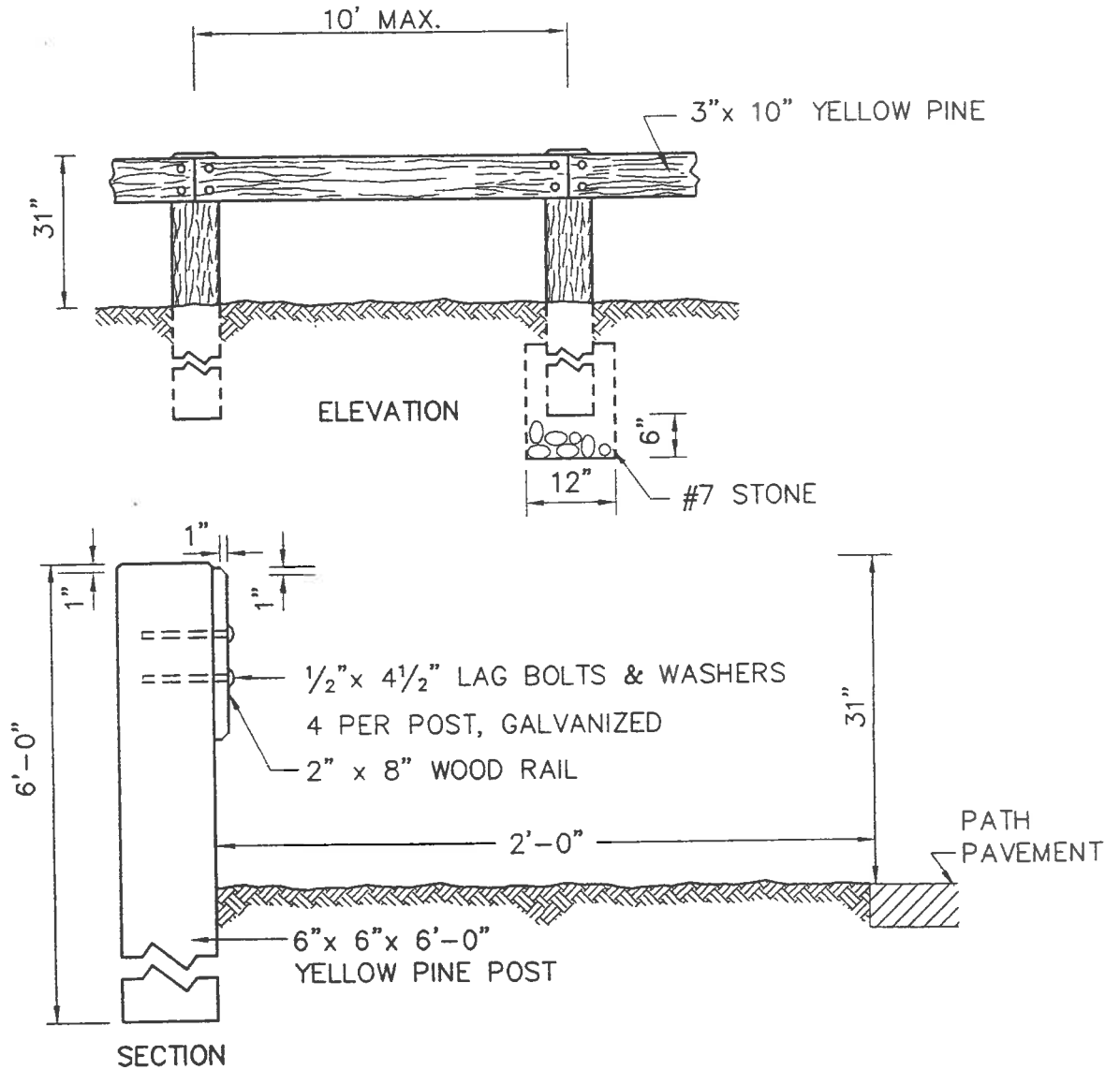
APRIL, 1996





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**DOYLESTOWN COMMUNITY  
PEDESTRIAN AND BICYCLE CONSTRUCTION STANDARDS  
TRAFFIC BARRIER**

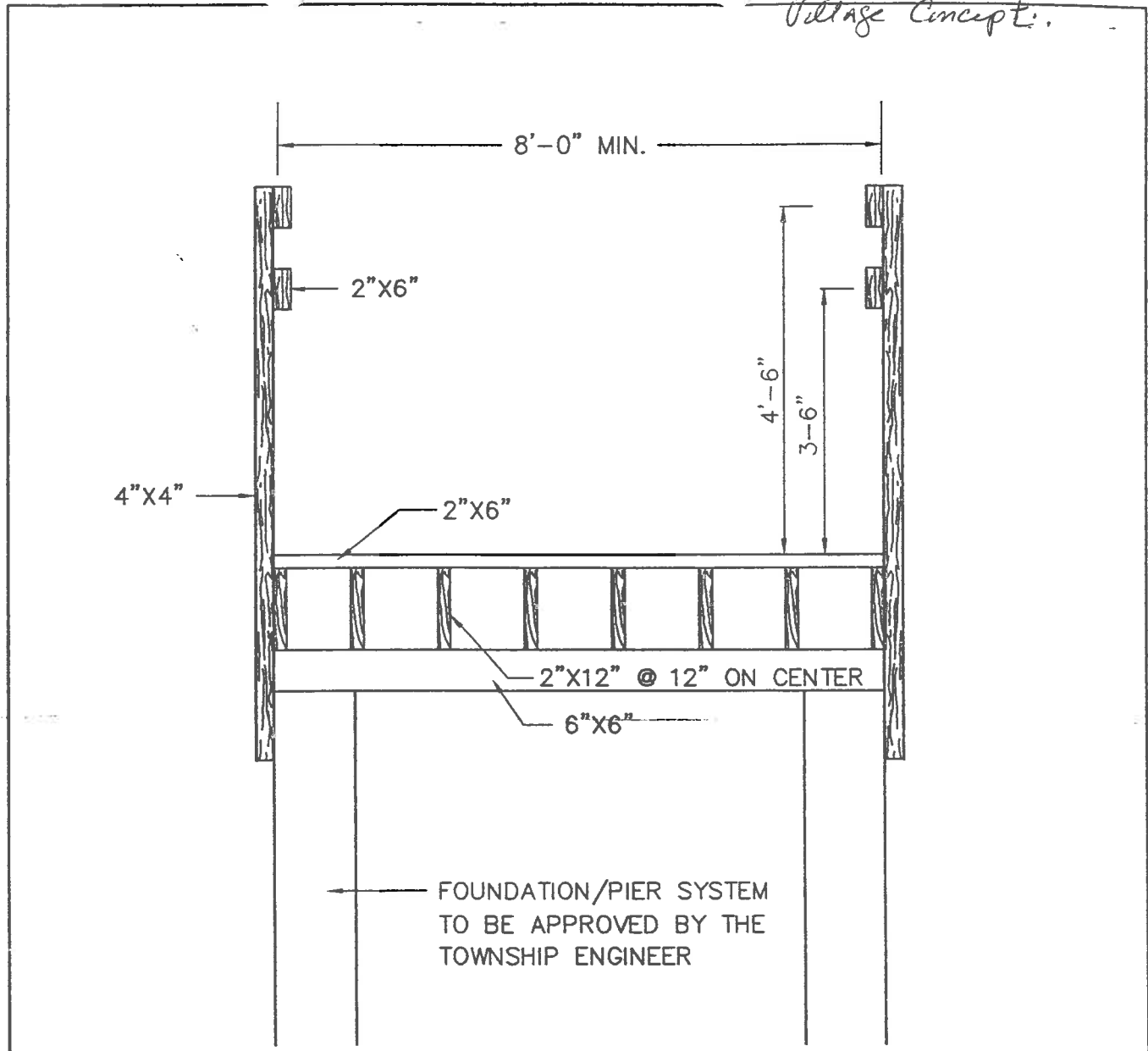


1. POST AND RAILS SHALL BE PRESSURE TREATED WITH WATER-BORNE PRESERVATIVES, CCA TREATMENT (LP-22) @ .4 PCF. (40 YEAR)
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**DOYLESTOWN COMMUNITY  
PEDESTRIAN AND BICYCLE CONSTRUCTION STANDARDS**

**BICYCLE AND PEDESTRIAN BARRIER**

\* Need Summer Hill  
Voltage Concept.



NOTE: ELEVATED STRUCTURE TO BE CONSIDERED WHEN BIKE PATH  
CROSSES ENVIRONMENTALLY SENSITIVE AREAS, SUCH AS WATER  
COURSES OR LOW LIEING DRAINAGE AREAS, WETLANDS, OR AREAS WITH  
EXTREME GRADE CHANGES.

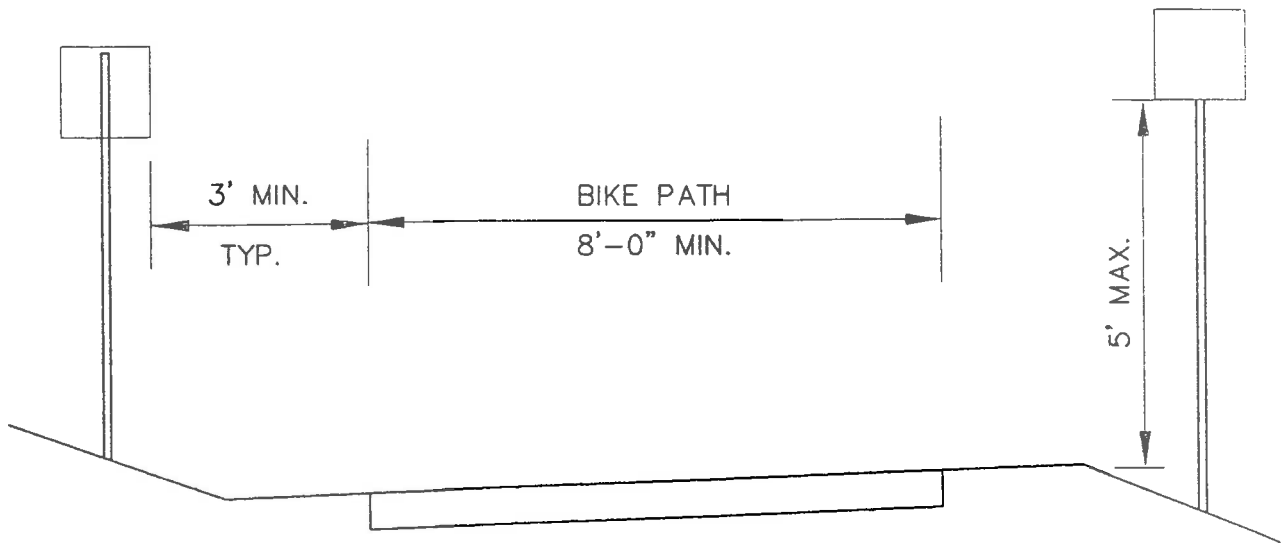
1. POST AND RAILS SHALL BE PRESSURE TREATED WITH WATER-BORNE PRESERVATIVES, CCA TREATMENT (LP-22) @ .4 PCF. (40 YEAR)
2. ALL MOUNTING HARDWARE SHALL BE IN ACCORDANCE WITH ASTM-A307 AND GALVANIZED IN ACCORDANCE WITH ASTM-A153 OR ASTM-B454.

DOYLESTOWN COMMUNITY  
PEDESTRIAN AND BICYCLE CONSTRUCTION STANDARDS

ELEVATED STRUCTURE

Prepared By: PICKERING, CORTS & SUMMERSON, INC.

APRIL, 1996



SIGN PLACEMENT ON BIKE PATH

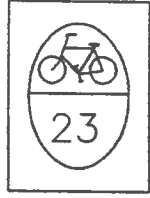
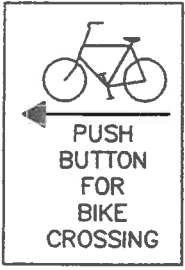
DOYLESTOWN COMMUNITY  
PEDESTRIAN AND BICYCLE CONSTRUCTION STANDARDS

SIGN PLACEMENT



BICYCLES  
YIELD TO  
PEDESTRIANS

BICYCLISTS  
THIS IS A  
MULTI-USE PATH  
REDUCE SPEED  
WATCH FOR  
PEDESTRIANS



MUTCD  
ROUTE  
SIGN

NOTE:  
SIGNS TO BE LOCATED WHERE APPROPRIATE IN ACCORDANCE  
WITH THE DESIGN STANDARDS.

DOYLESTOWN COMMUNITY  
PEDESTRIAN AND BICYCLE CONSTRUCTION STANDARDS

MISCELLANEOUS SIGNS



W5-24



W7-5



W1-2R



W1-1R



W1-5R



W1-3R



W11-1



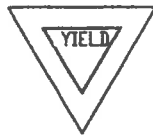
W11-2

DOYLESTOWN COMMUNITY  
PEDESTRIAN AND BICYCLE CONSTRUCTION STANDARDS

WARNING SIGNS



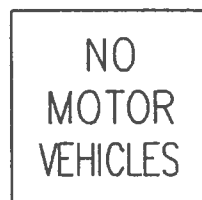
R-5-3



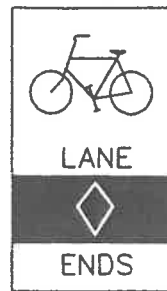
R1-2



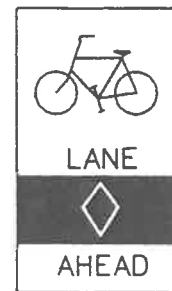
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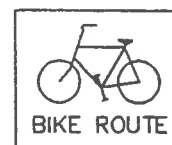
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R3-16



R3-16



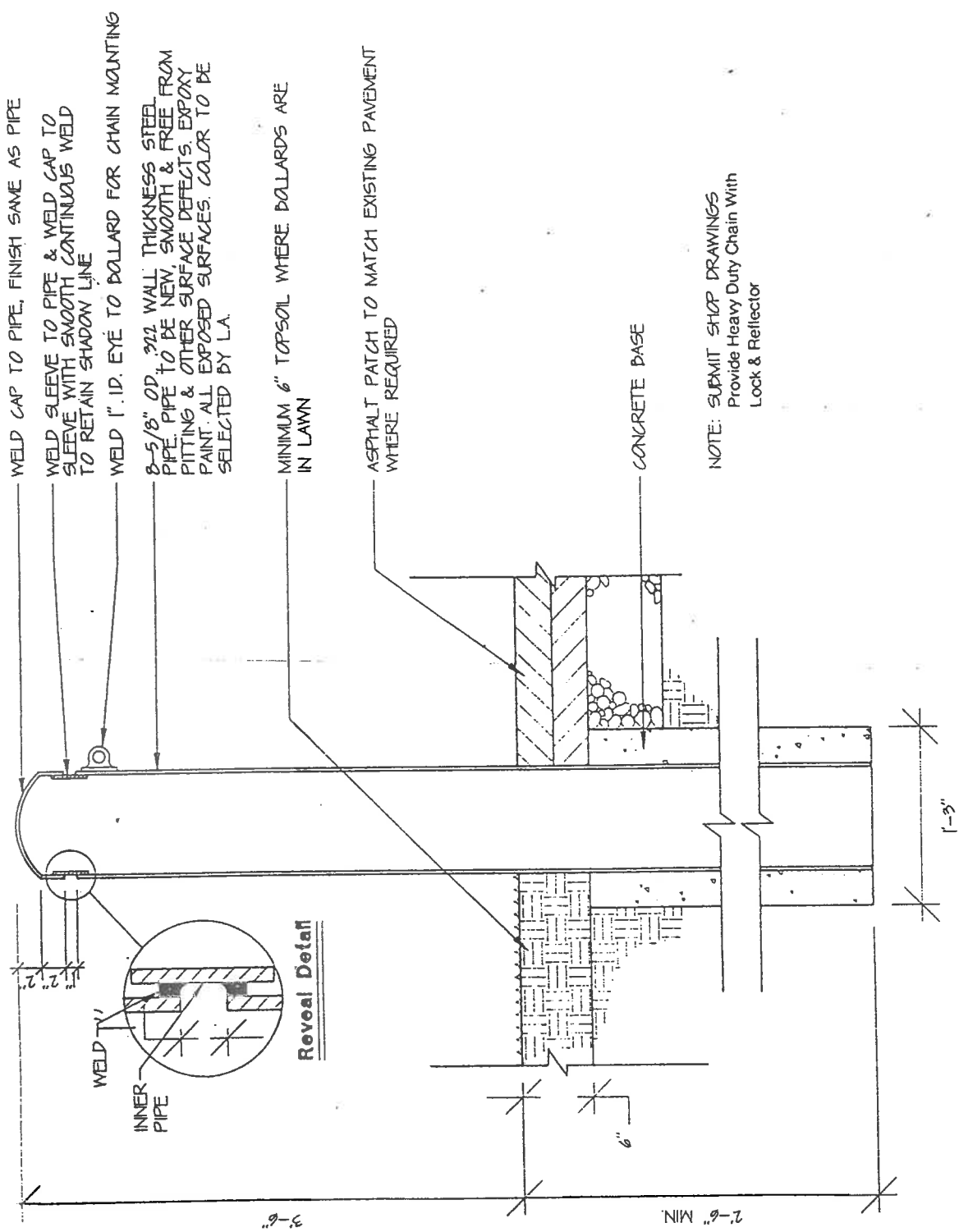
I-11-1

D-11-1

DOYLESTOWN COMMUNITY  
PEDESTRIAN AND BICYCLE CONSTRUCTION STANDARDS  
INFORMATION & REGULATORY SIGNS

THE EXAMPLES ON THE FOLLOWING SHEETS OF BICYCLE RACKS, BENCHES, PICNIC TABLES, TRASH RECEPTACLES, OUTDOOR LIGHTS, DRINKING FOUNTAINS, FENCES AND PAVING SURFACES ARE FOR REVIEW AND CONSENSUS BY DOYLESTOWN TOWNSHIP AND DOYLESTOWN BOROUGH. FINAL DETERMINATION OF SPECIFIC ITEMS AGREED UPON BY THE TOWNSHIP AND/OR THE BOROUGH WILL BE INCLUDED IN THE FINAL PEDESTRIAN/BIKE PATHWAYS CONSTRUCTION REQUIREMENTS BOOKLET TO STANDARDIZE THE LONG TERM OVERALL FACILITIES.

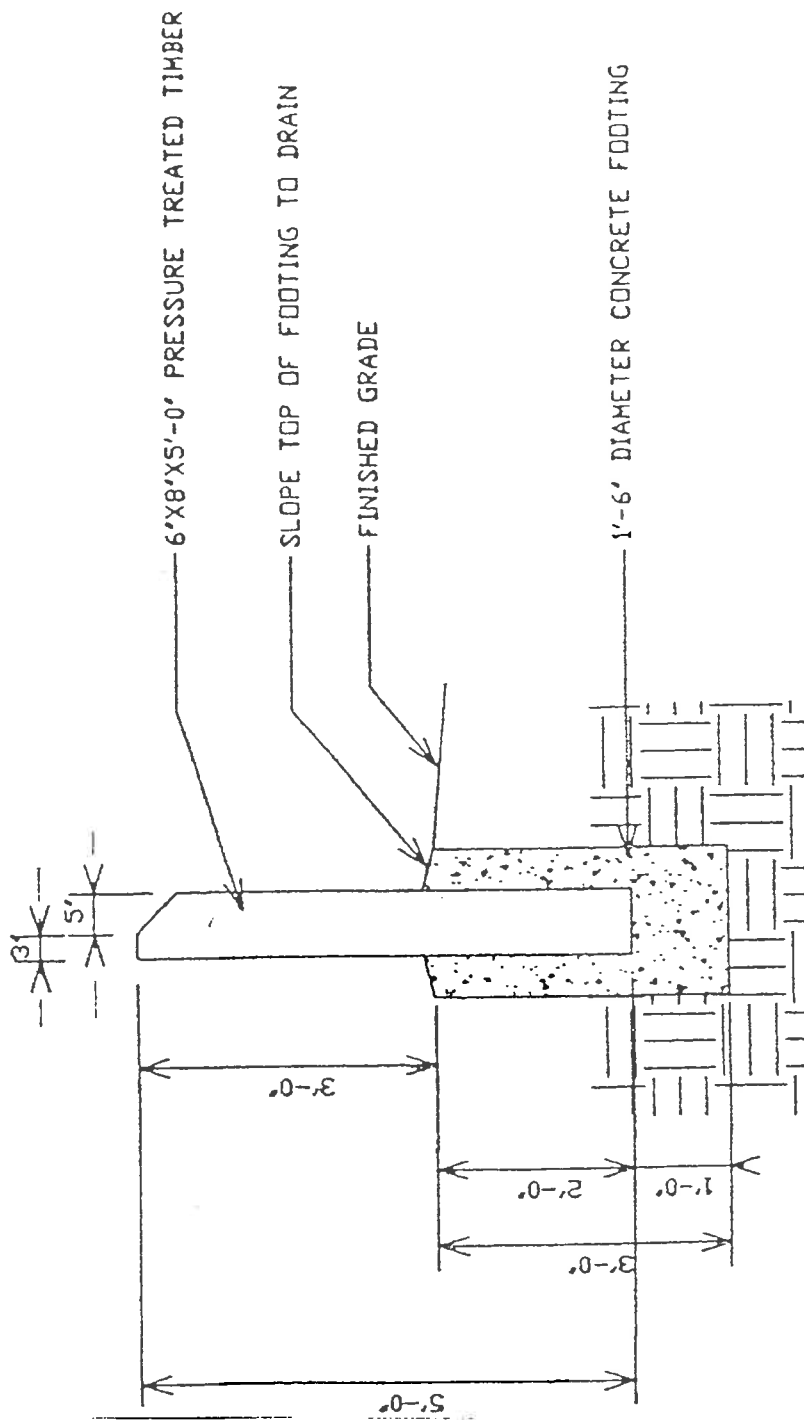




DOYLESTOWN COMMUNITY  
 BICYCLE AND PEDESTRIAN STANDARDS  
 STEEL BOLLARD

Prepared By: PICKERING, CORTS & SUMMERSON, INC.

APRIL, 1996

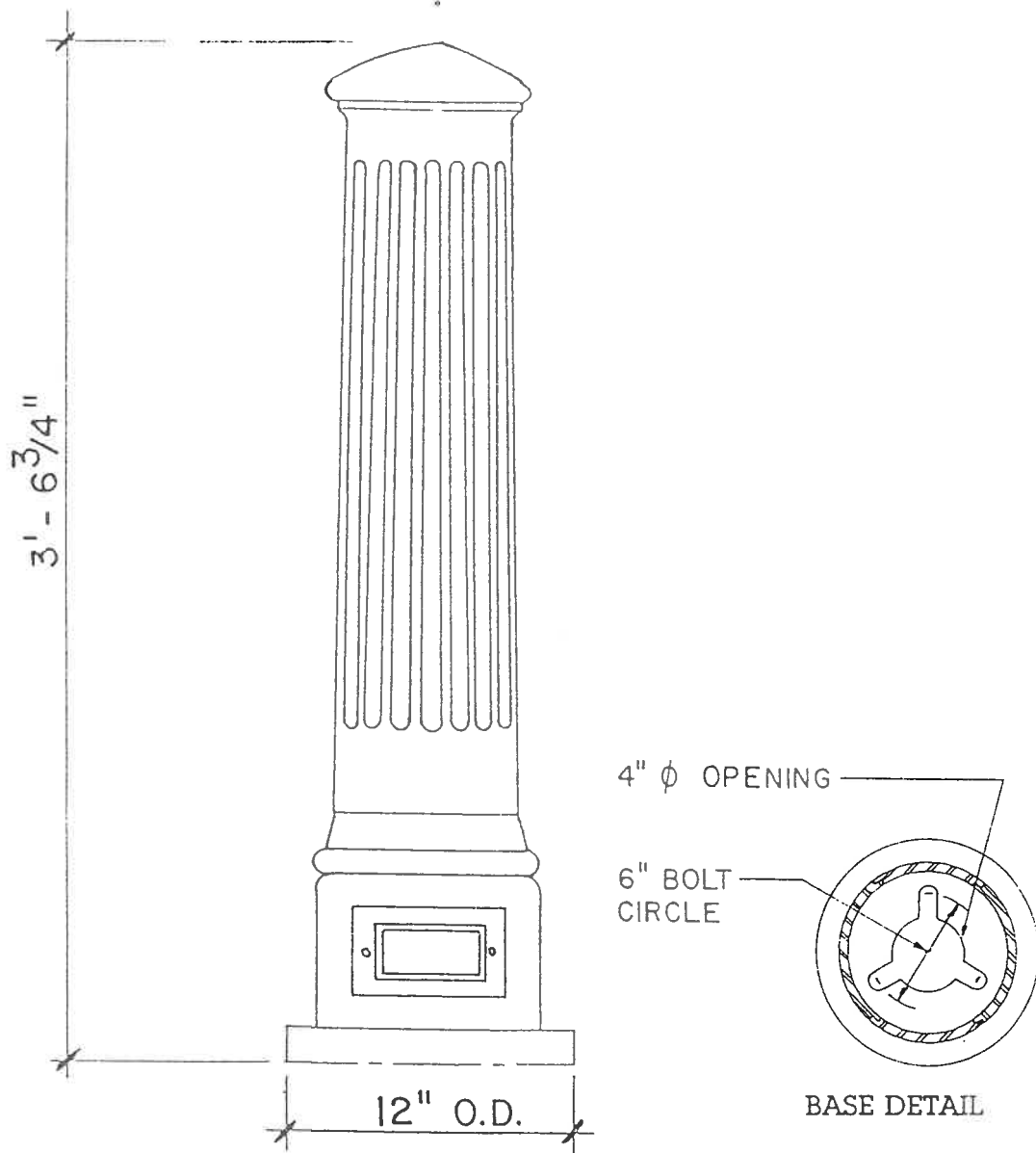


DOYLESTOWN COMMUNITY  
PEDESTRIAN AND BICYCLE CONSTRUCTION STANDARDS

FIXED TIMBER BOLLARD

Prepared By: PICKERING, CORTS & SUMMERSON, INC.

APRIL, 1996



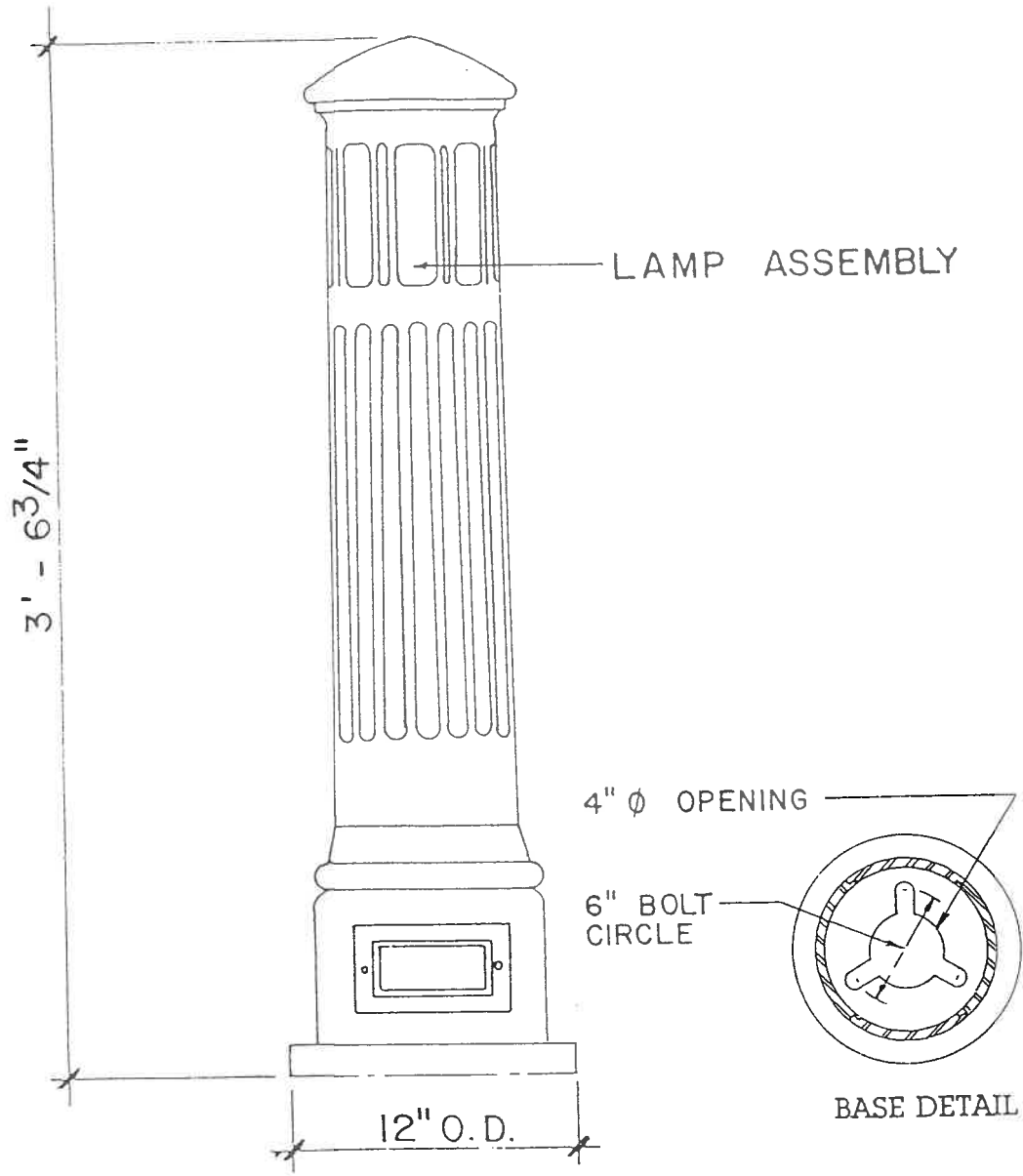
VI-BO-14

DOYLESTOWN COMMUNITY  
 PEDESTRIAN AND BICYCLE CONSTRUCTION STANDARDS

METAL BOLLARD

Prepared By: PICKERING, CORTS & SUMMERSON, INC.

APRIL, 1996

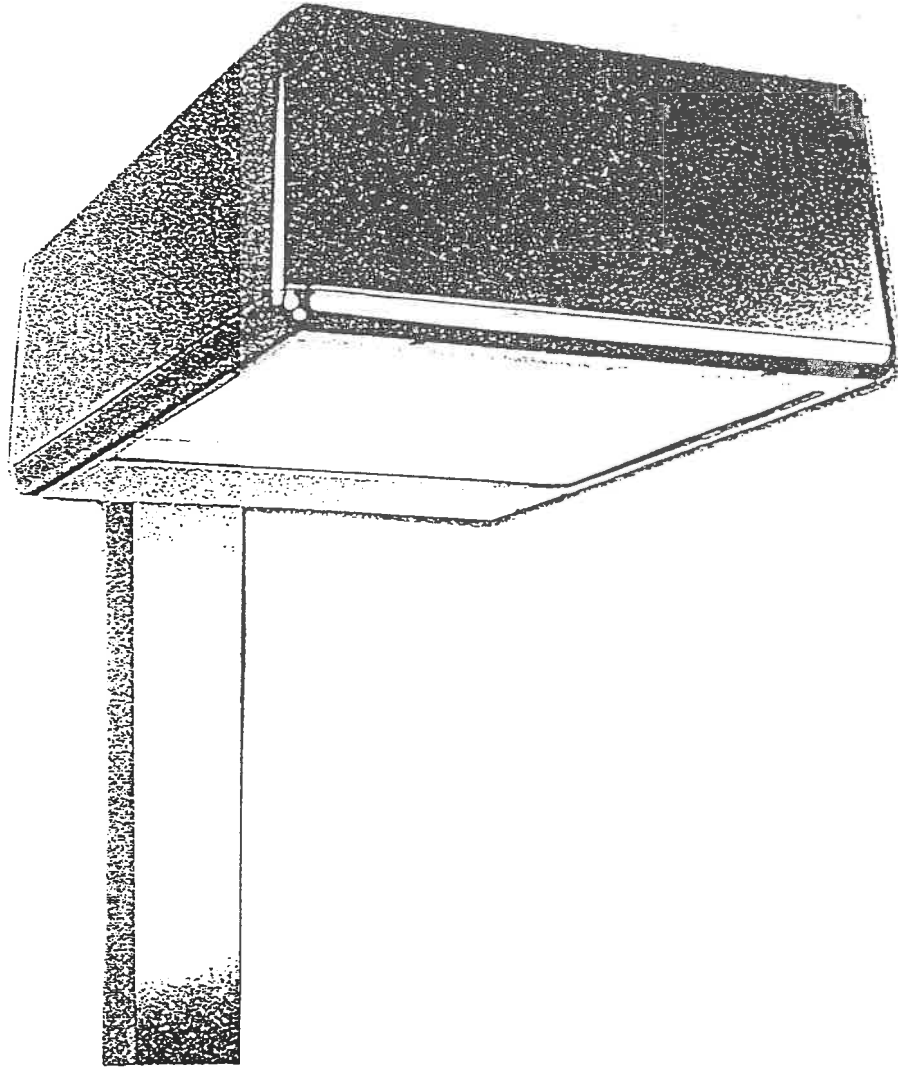


VI-BO-14L

DOYLESTOWN COMMUNITY  
 PEDESTRIAN AND BICYCLE CONSTRUCTION STANDARDS  
 LIGHTED METAL BOLLARD

Prepared By: PICKERING, CORTS & SUMMERSON, INC.

APRIL, 1996



NOTE:

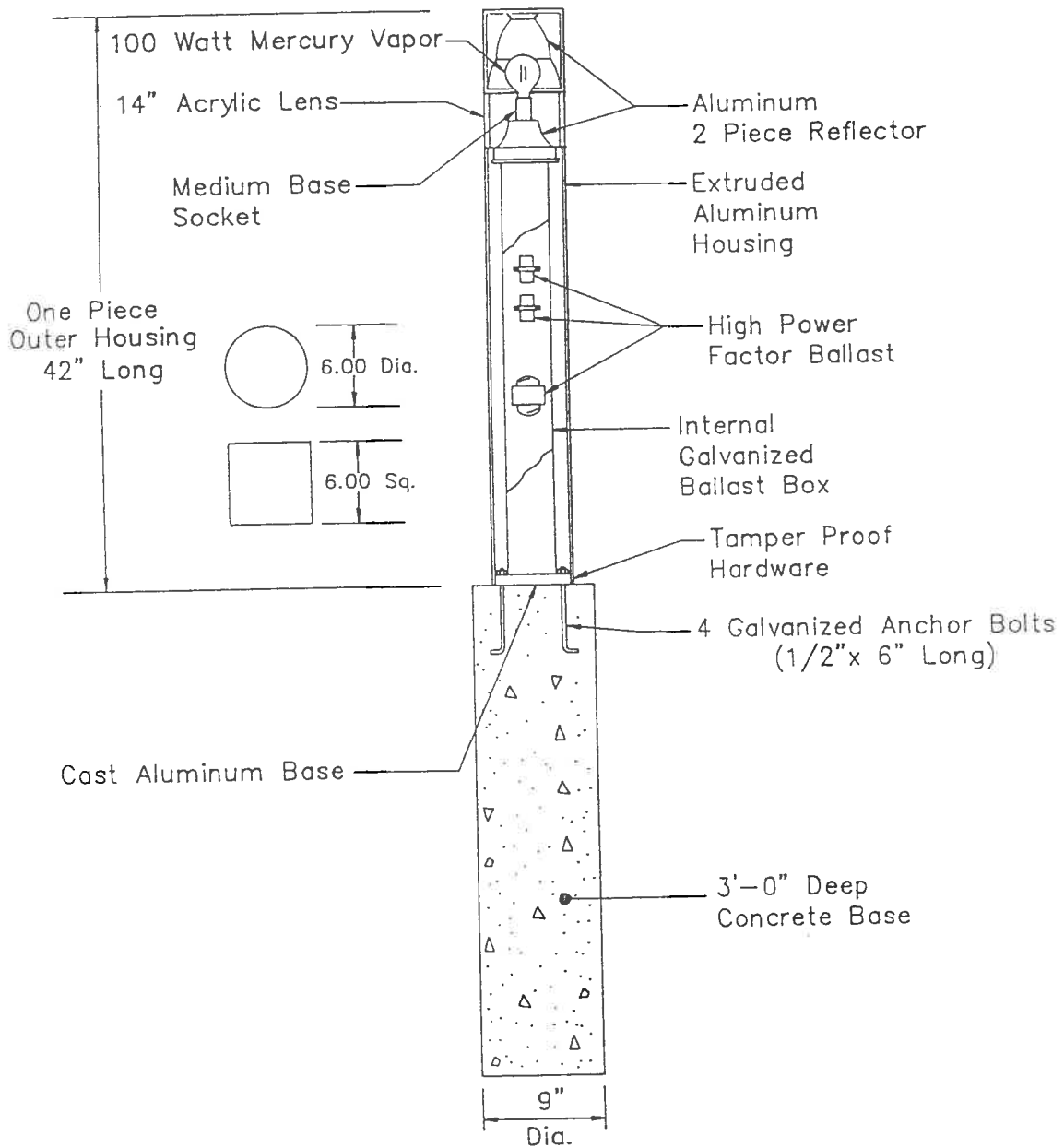
FIXTURES - LARGE CAST ALUMINUM AREA LIGHT  
1000WATT METAL HALIDE  
POLYCARBONATE VANDAL GUARD  
TYPE W / WOODLANDS - STRAIGHT SHAFT WOOD POLES

DOYLESTOWN COMMUNITY  
PEDESTRIAN AND BICYCLE CONSTRUCTION STANDARDS

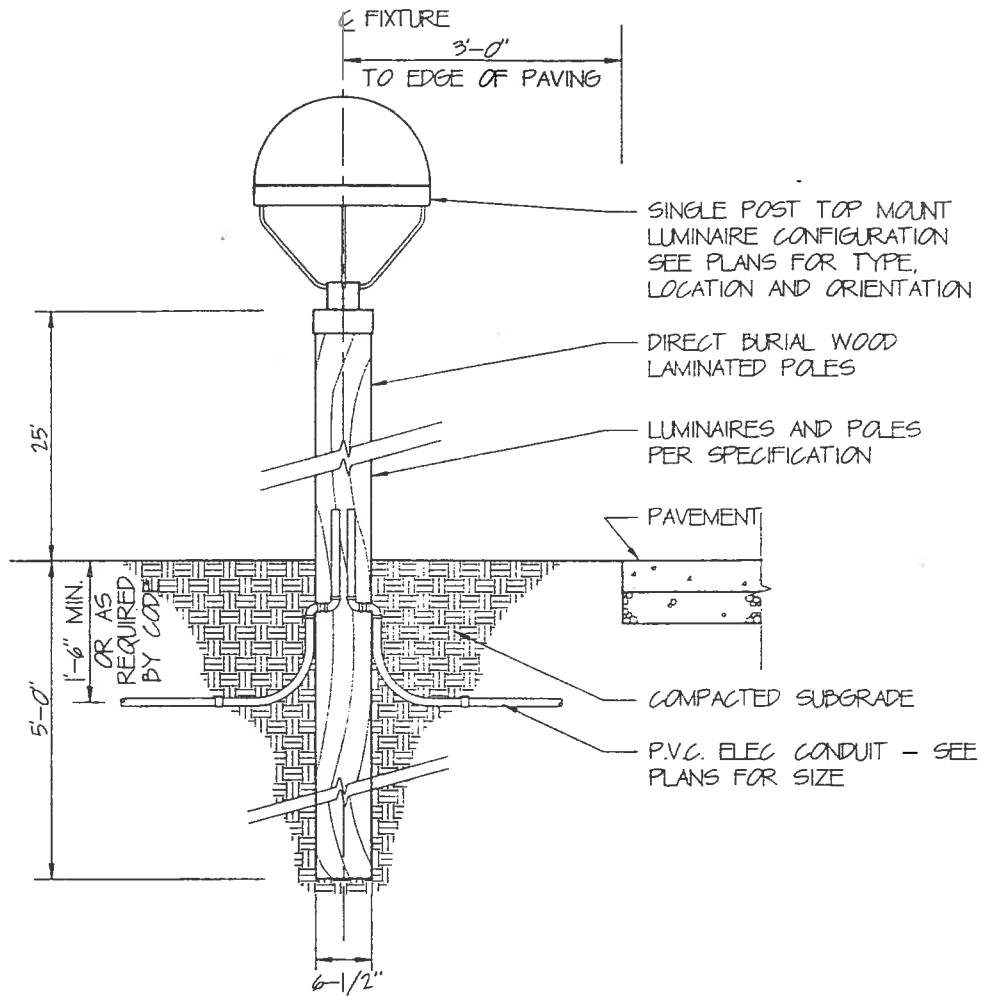
PATHWAY LIGHTING - CAMBRIDGE II

Prepared By: PICKERING, CORTS & SUMMERSON, INC.

APRIL, 1996



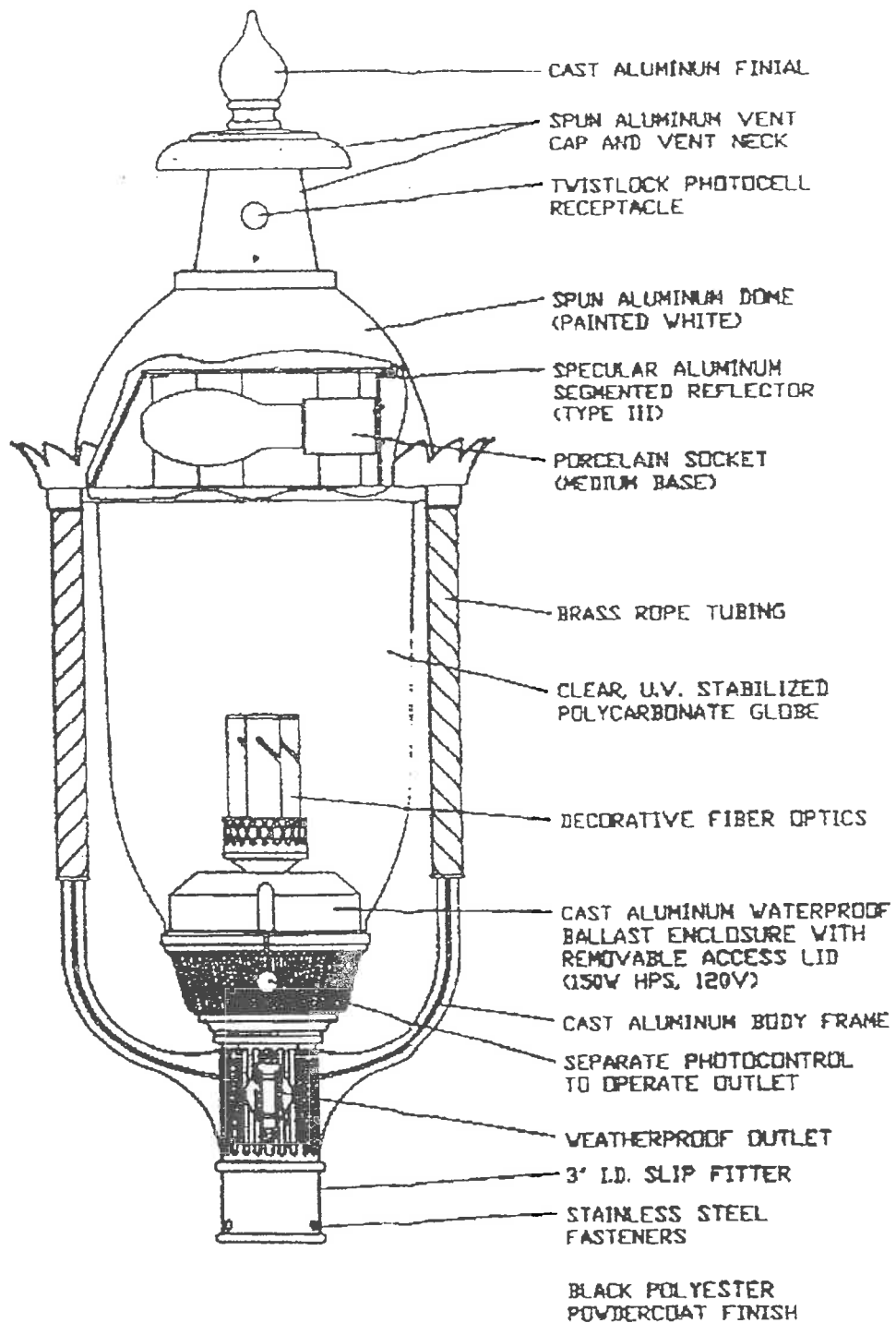
DOYLESTOWN COMMUNITY  
 PEDESTRIAN AND BICYCLE CONSTRUCTION STANDARDS  
 PATHWAY LIGHTING



DOYLESTOWN COMMUNITY  
 PEDESTRIAN AND BICYCLE CONSTRUCTION STANDARDS  
 PATHWAY LIGHTING

Prepared By: PICKERING, CORTS & SUMMERSON, INC.

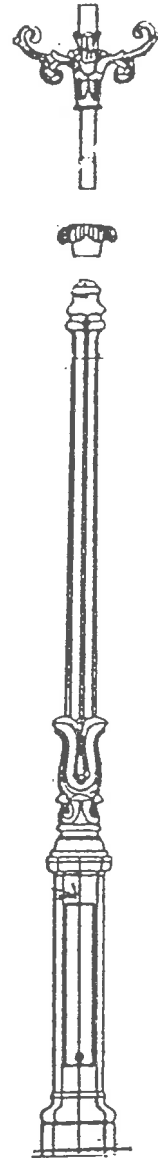
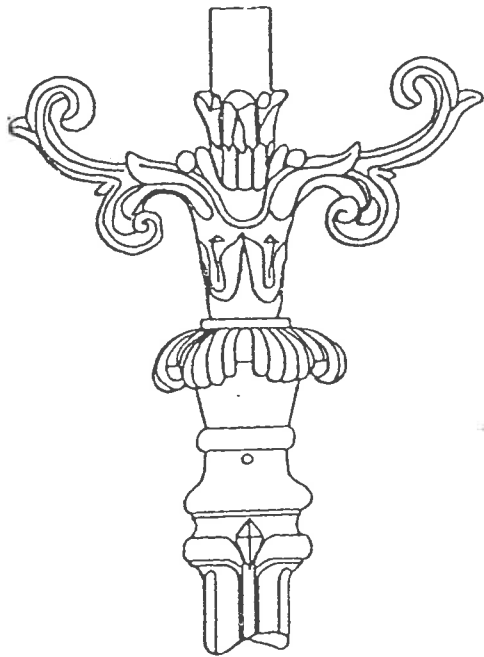
APRIL, 1996



FIXTURE DIMENSIONS  
 HEIGHT: 45 1/4"  
 WIDTH: 18"

DOYLESTOWN COMMUNITY  
 PEDESTRIAN AND BICYCLE CONSTRUCTION STANDARDS  
 PATHWAY LIGHTING - HAGUE FIXTURE



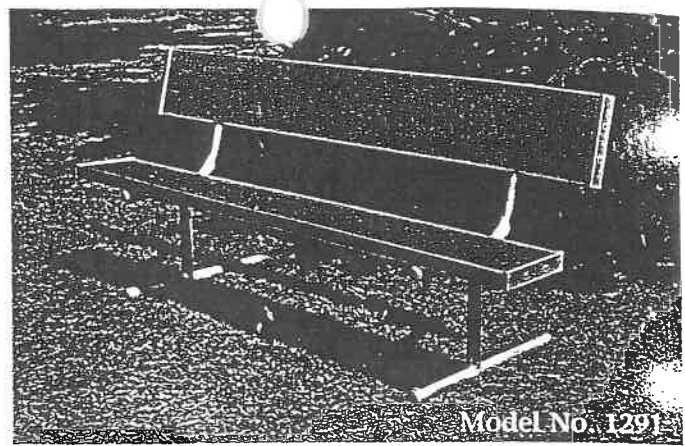
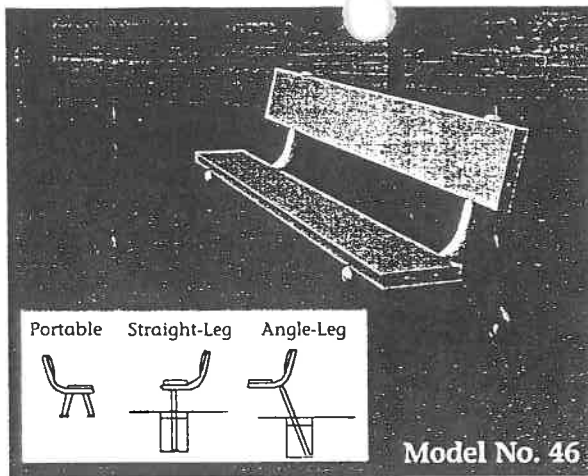


DOYLESTOWN COMMUNITY  
BICYCLE AND PEDESTRIAN STANDARDS

HAGUE - CAST IRON POST

Prepared By: PICKERING, CORTS & SUMMERSON, INC.

APRIL, 1996



All can be shipped UPS except 15' models.

Park Benches (portable or stationery, wood or aluminum slats, 2-3/8" O.D. galv. steel frames)

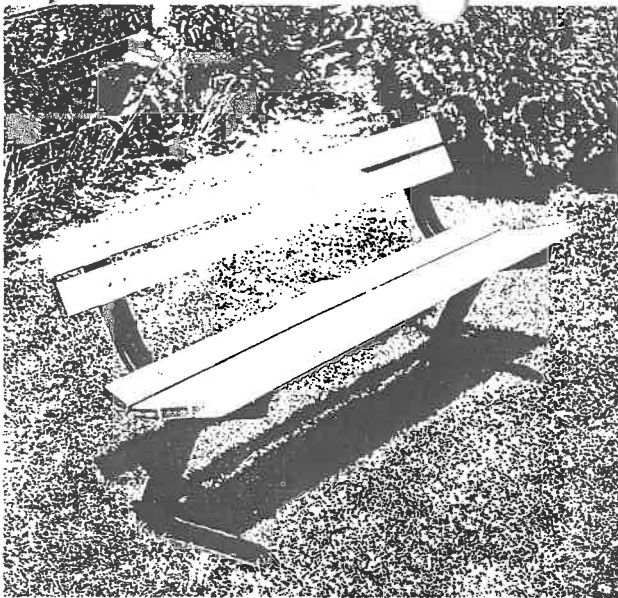
Model No.	Description	Type of Seat	Ground Space	Weight	Price
16	6' Straight Leg Bench ✓	2 x 10 aluminum	2'x6' (.61x1.83 m.)	76 lbs. (34 kg.)	\$310
18	8' Straight Leg Bench ✓	2 x 10 aluminum	2'x8' (.61x2.44 m.)	84 lbs. (38 kg.)	\$358
116T	6' Straight Leg Bench ✓	2 x 10 treated wood	2'x6' (.61x1.83 m.)	90 lbs. (41 kg.)	\$168
116P*	6' Straight Leg Bench ✓	2 x 10 recycled plastic	2'x6' (.61x1.83 m.)	158 lbs. (72 kg.)	\$332
118T	8' Straight Leg Bench ✓	2 x 10 treated wood	2'x8' (.61x2.44 m.)	104 lbs. (47 kg.)	\$183
118P*	8' Straight Leg Bench ✓	2 x 10 recycled plastic	2'x8' (.61x2.44 m.)	180 lbs. (83 kg.)	\$372
46	6' Angle Leg Bench ✓	2 x 10 aluminum	2'x6' (.61x1.83 m.)	78 lbs. (35 kg.)	\$324
48	8' Angle Leg Bench ✓	2 x 10 aluminum	2'x8' (.61x2.44 m.)	86 lbs. (39 kg.)	\$374
146T	6' Angle Leg Bench ✓	2 x 10 treated wood	2'x6' (.61x1.83 m.)	93 lbs. (42 kg.)	\$178
146P*	6' Angle Leg Bench ✓	2 x 10 recycled plastic	2'x6' (.61x1.83 m.)	167 lbs. (75 kg.)	\$349
148T	8' Angle Leg Bench ✓	2 x 10 treated wood	2'x8' (.61x2.44 m.)	107 lbs. (49 kg.)	\$196
148P*	8' Angle Leg Bench ✓	2 x 10 recycled plastic	2'x8' (.61x2.44 m.)	189 lbs. (86 kg.)	\$391
26	6' Portable Leg Bench ✓	2 x 10 aluminum	2'x6' (.61x1.83 m.)	76 lbs. (34 kg.)	\$336
28	8' Portable Leg Bench ✓	2 x 10 aluminum	2'x8' (.61x2.44 m.)	84 lbs. (38 kg.)	\$383
126T	6' Portable Leg Bench ✓	2 x 10 treated wood	2'x6' (.61x1.83 m.)	90 lbs. (41 kg.)	\$192
128T	8' Portable Leg Bench ✓	2 x 10 treated wood	2'x8' (.61x2.44 m.)	105 lbs. (48 kg.)	\$205
10	Straight Leg Frames only ✓	-	-	48 lbs. (22 kg.)	\$ 94
20	Portable Leg Frames only ✓	-	-	50 lbs. (23 kg.)	\$118
40	Angle Leg Frames only ✓	-	-	50 lbs. (23 kg.)	\$107

\* Specify color: BL-Blue, BR- Brown, or DG- Dark Green

Park Benches (1-5/8" O.D. galv. steel frames)

Model No.	Description	Type of Seat	Ground Space	Weight	Price
1281T	6' Stationary Bench ✓	2 x 10 treated wood	2'x6' (.61x1.83 m.)	60 lbs. (27 kg.)	\$129
1282T	8' Stationary Bench ✓	2 x 10 treated wood	2'x8' (.61x2.44 m.)	74 lbs. (34 kg.)	\$141
1284	6' Stationary Bench ✓	2 x 10 aluminum	2'x6' (.61x1.83 m.)	44 lbs. (20 kg.)	\$200
1285	8' Stationary Bench ✓	2 x 10 aluminum	2'x8' (.61x2.44 m.)	52 lbs. (24 kg.)	\$235
1286	15' Stationary Bench ✓	2 x 10 aluminum	2'x15' .61x4.57 m.)	82 lbs. (37 kg.)	\$378
1288T	6' Portable Bench ✓	2 x 10 treated wood	2'x6' (.61x1.83 m.)	61 lbs. (28 kg.)	\$143
1289T	8' Portable Bench ✓	2 x 10 treated wood	2'x8' (.61x2.44 m.)	75 lbs. (34 kg.)	\$153
1291	6' Portable Bench ✓	2 x 10 aluminum	2'x6' (.61x1.83 m.)	45 lbs. (20 kg.)	\$215
1292	8' Portable Bench ✓	2 x 10 aluminum	2'x8' (.61x2.44 m.)	53 lbs. (24 kg.)	\$256
1293	15' Portable Bench ✓	2 x 10 aluminum	2'x15' (.61x4.57 m.)	91 lbs. (41 kg.)	\$403
1280	Stationary Bench Frames only ✓	-	-	18 lbs. (8 kg.)	\$ 80
1287	Portable Bench Frames only ✓	-	-	19 lbs. (9 kg.)	\$ 94

NOTE: Recycled plastic will, over a period of time, follow the contour of the surface it is setting on. It is recommended that recycled plastic tables and benches be set on a solid flat surface.

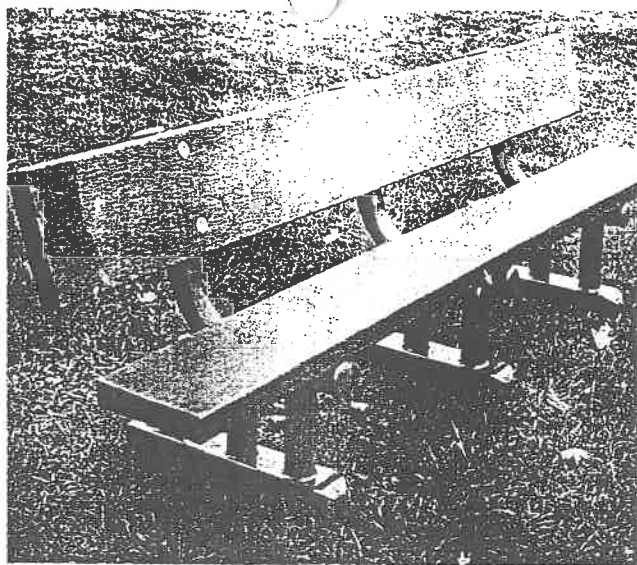


### Contemporary Bench\*\*

Contemporary styling combined with old-fashioned attention to quality construction make this bench both sharp and sturdy. Ideal for shopping plaza or mall.

- Portable
- Cast-iron frame
- Clear polyurethane-finished oak slats

No. 1244 Contemporary Bench 5'  
 (1.53 m.), ground space 1' 8" x 5' x 2' 4-1/2" (.51 x 1.52 x .71 m.) high, wt. 85 lbs. (39 kg.).....\$341

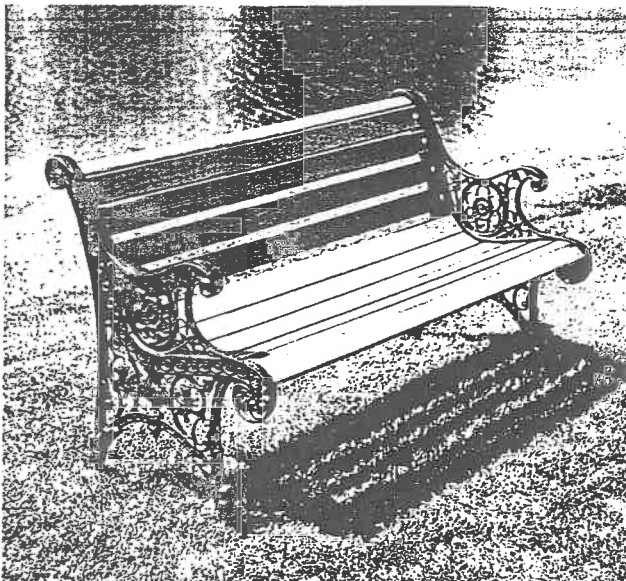


### Recycled Plastic Bench (Portable)

This sturdy 8' long recycled plastic bench is available with 3" x 12" slats. It features galvanized steel legs and a galvanized steel tubebase, powder coated blue or terra cotta.

No. 1375P\* Recycled Plastic Bench, 8'  
 (2.44 m.) long, wt. 288 lbs. (131 kg.).....\$377

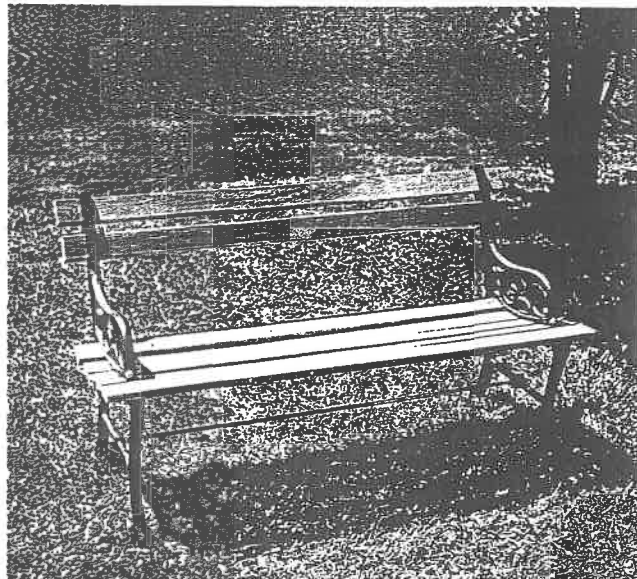
\*Specify COLOR: BL-Blue. BR-Brown. DG-Dark Green



### Victorian Bench\*\*

This bench, with its ornate cast-iron frame, brings a Victorian flavor to recreation areas. Clear polyurethane-finished oak slats are contoured for comfort. Portable.

No. 1240 Victorian Bench, 4'  
 (1.22 m.) ground space 2' 2-1/2" x 4' 1-1/4" x 2' 5-1/2" (.66 x 1.24 x .74 m.) high, wt. 107 lbs. (48 kg.).....\$454



### London Bench

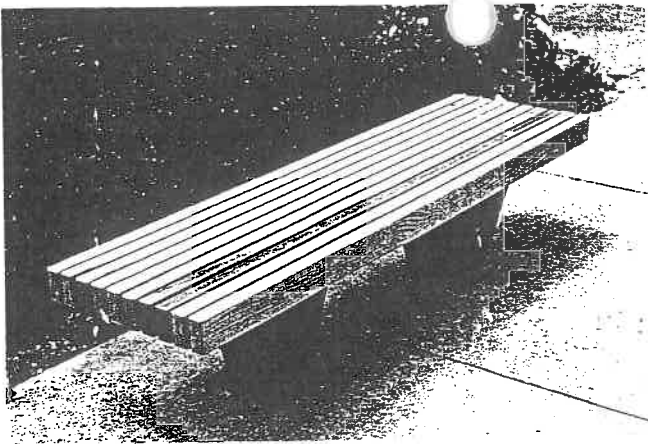
The classic London look is built into this attractive bench, along with quality attention to durability.

- Portable
- Ornate cast-iron frame
- Clear polyurethane-finished oak slats

No. 1242 London Bench, 4'  
 (1.22 m.) ground space 1' 9" x 4' x 2' 2-1/2" (.53 x 1.22 x .66 m.) high, wt. 56 lbs. (25 kg.).....\$214

\*\*These items can be shipped via UPS.

NOTE: Polyurethane-finished oak is recommended for indoor use



## Wood Mall and Park Benches

For indoor or outdoor use

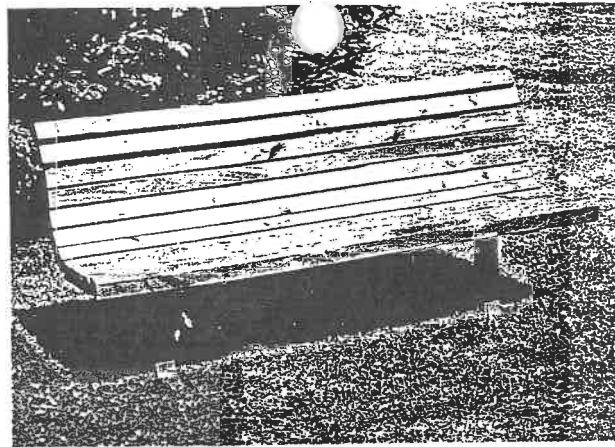
Quality benches are ideal for your mall or shopping plaza. Seat backs, where used, have heavy-duty supports and are angled for maximum comfort. Available in either pressure treated pine or natural finish redwood.

- Portable
- Heavy steel legs pre-drilled for easy assembly
- Holes provided for anchoring to floor
- Legs finished in durable black enamel

No. 1607T Mall Bench 6' (1.83 m.) (shown), wt. 204 lbs. (93 kg.).....	\$437
No. 1607DR Mall Bench 6' (1.83 m.), wt. 204 lbs. (93 kg.).....	\$446
No. 1609T Mall Bench 8' (2.44 m.), wt. 234 lbs. (106 kg.).....	\$480
No. 1609DR Mall Bench 8' (2.44 m.), wt. 234 lbs. (106 kg.).....	\$485
No. 1807T Mall Bench 6' (1.83 m.) w/back, wt. 294 lbs. (133 kg.).....	\$595
No. 1807DR Mall Bench 6' (1.83 m.) w/back, wt. 294 lbs. (133 kg.).....	\$603
No. 1809T Mall Bench 8' (2.44 m.) w/back, wt. 339 lbs. (154 kg.).....	\$623
No. 1809DR Mall Bench 8' (2.44 m.) w/back, wt. 339 lbs. (154 kg.).....	\$650

T = PRESSURE TREATED PINE

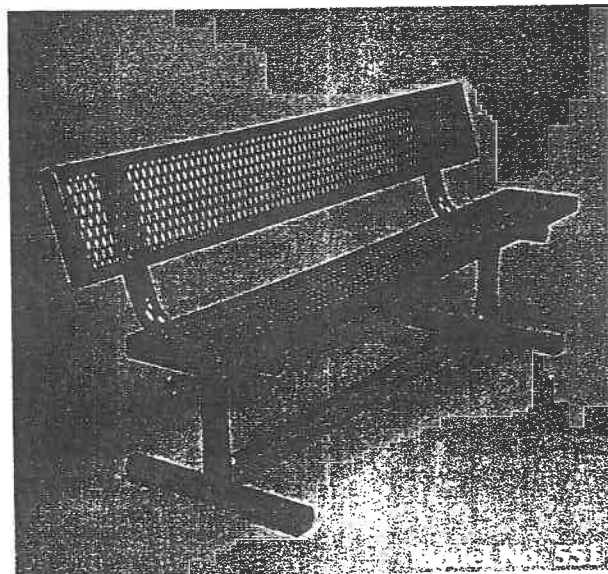
DR = REDWOOD



## Contour Bench

This attractive bench is contoured for comfort and is ideal for any park, shopping plaza or mall application. Features heavy-duty steel legs and 3" x 3" slats of natural redwood.

No. 6225DR Contour Bench, 6' (1.83 m.) (shown), portable, redwood, wt. 213 lbs. (97 kg.).....	\$481
No. 6226DR Contour Bench, 8' (2.44 m.), portable, redwood, wt. 261 lbs. (118 kg.).....	\$555
No. 6227DR Contour Bench, 6' (1.83 m.), permanent, redwood, wt. 207 lbs. (94 kg.).....	\$494
No. 6228DR Contour Bench, 8' (2.44 m.), permanent, redwood, wt. 255 lbs. (116 kg.).....	\$534



Benches are brown with black frame.

## PVC Coated Expanded Steel Park Benches (2-3/8" O.D. steel frame)

Model No.	Description	Ground Space	Weight	Price
550	6' Stationary Bench PVC Coated	2'x6' (.61x1.83 m.)	100 lbs. (45 kg.)	\$251
551	6' Portable Bench PVC Coated	2'x6' (.61x1.83 m.)	100 lbs. (45 kg.)	\$251
553	8' Stationary Bench PVC Coated	2'x8' (.61x2.44 m.)	125 lbs. (57 kg.)	\$280
554	8' Portable Bench PVC Coated	2'x8' (.61x2.44 m.)	125 lbs. (57 kg.)	\$280
556	15' Stationary Bench PVC Coated	2'x15' (.61x4.57 m.)	230 lbs. (104 kg.)	\$524
557	15' Portable Bench PVC Coated	2'x15' (.61x4.57 m.)	230 lbs. (104 kg.)	\$524



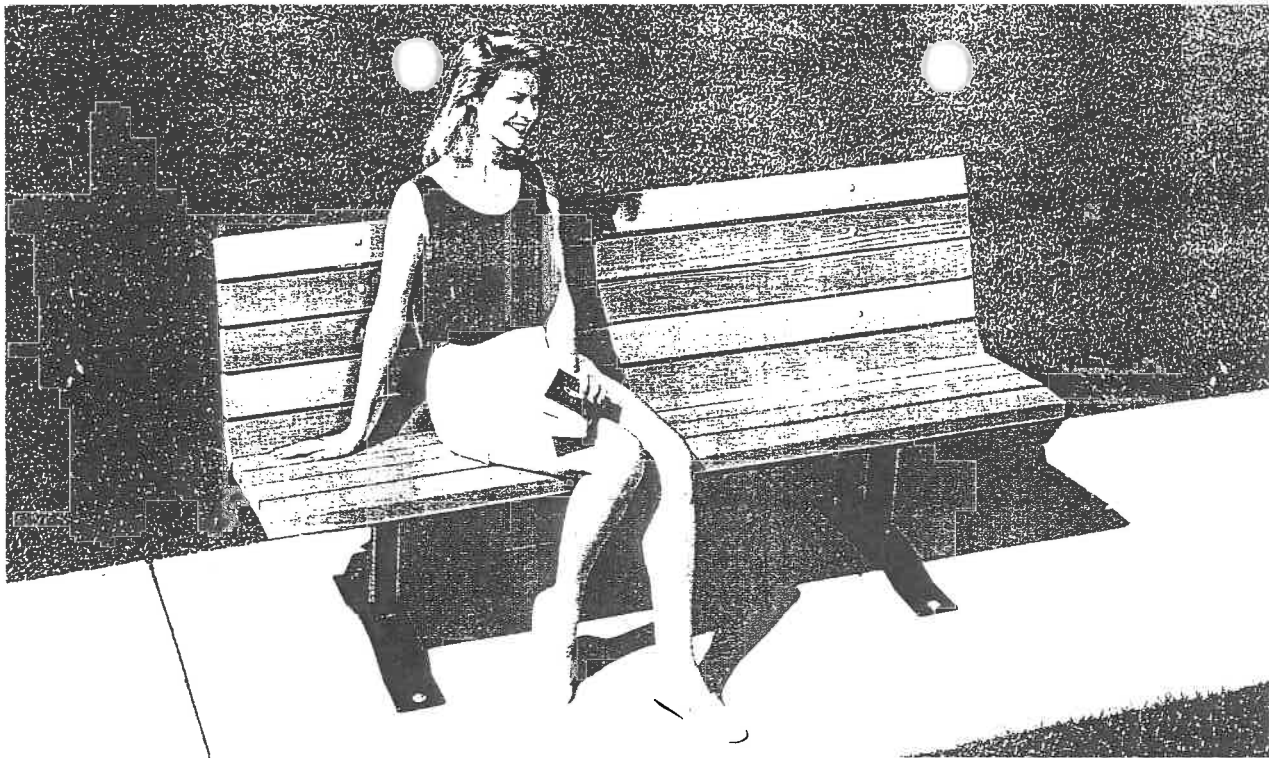
P-26-4

P-26



**BENCHES**

	Model Number	Description	Shipping Weight	Price	
SUPER-STRONG	P-26	8" natural stone slate	76 lbs	\$151.00	
	P-26-1	6" glass-reinforced polyurethane	76 lbs	158.00	
	P-26-2	6" glass-reinforced polyurethane	76 lbs	212.00	
	P-26-3	6" glass-reinforced polyurethane	112 lbs	348.00	
	P-26-4	6" glass-reinforced polyurethane	112 lbs	299.00	
	P-28	4" natural stone slate	28 lbs	164.00	
	P-28-1	4" glass-reinforced polyurethane	28 lbs	173.00	
	P-28-2	4" glass-reinforced polyurethane	33 lbs	253.00	
	P-28-3	4" glass-reinforced polyurethane	33 lbs	422.00	
	P-28-4	4" glass-reinforced polyurethane	33 lbs	358.00	
	E 67C				93.00

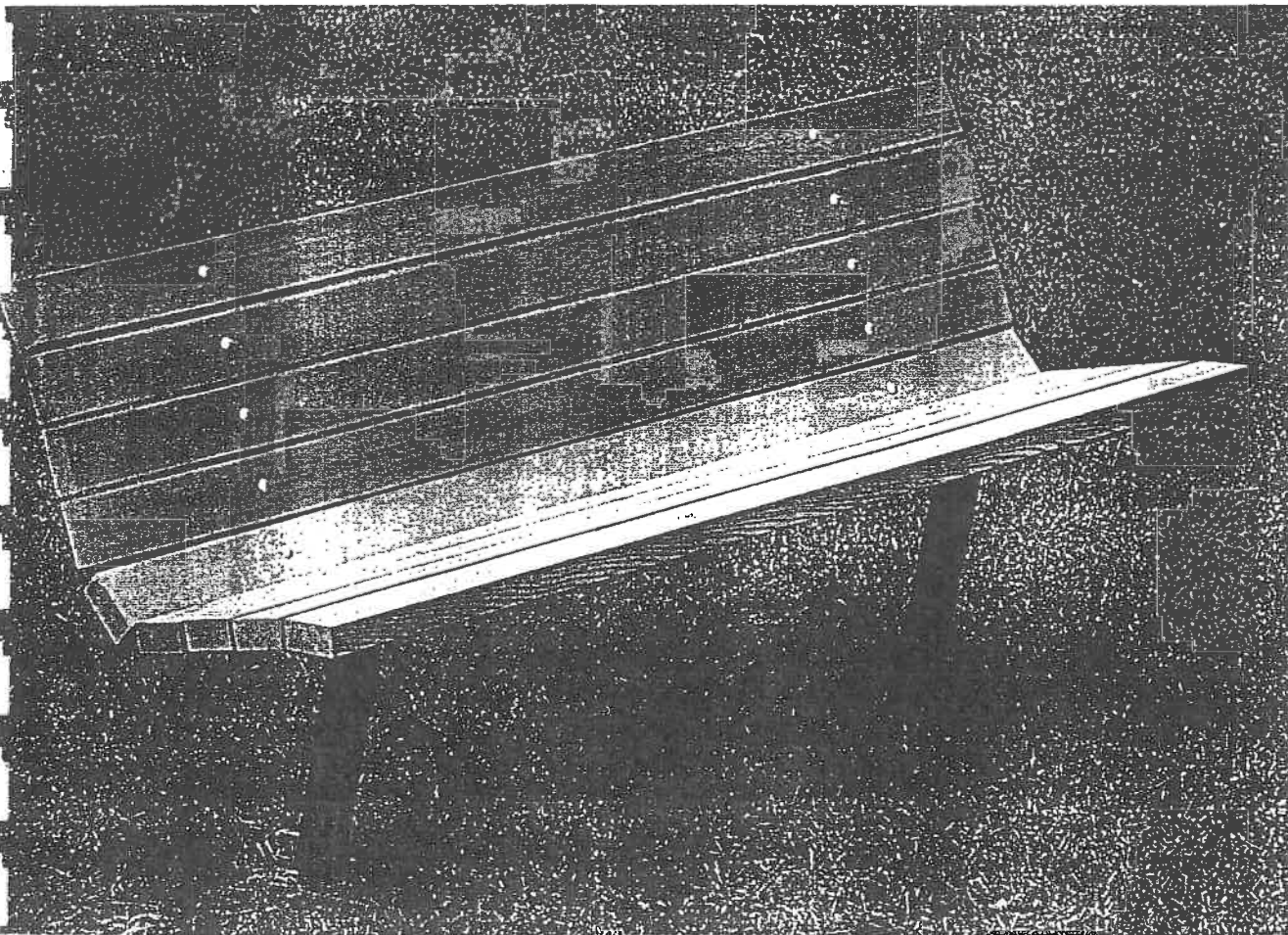


P-36S

**C**ONTOUR SERIES ... featuring good appearance and comfort with a seat made of 2" x 4" redwood slats.

The frame of both stationary and surface mount models is 2" x 2" x 1/8" square steel tubing with seat and back sup-

ports of one-piece 3/8" flat steel. Wood edges are eased, and slats are pre-drilled for easy assembly.



P-36

**EXTRA-COMFORT SERIES** ... with functional and aesthetically pleasing armrests made of 3/16" thick formed steel.

Legs are all-welded one-piece construction and are finished in black-enamel.

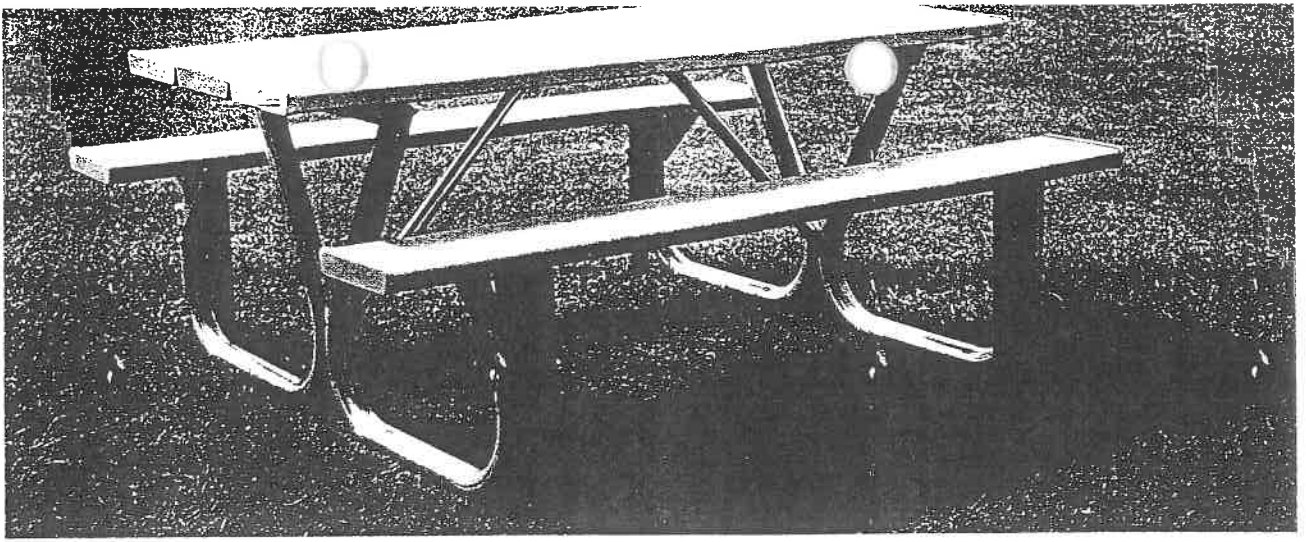
Leg supports are 2" x 2" x 1/8" wall square steel tubing with a 3/8" thick steel seat support. Surface mount models have a 3/8" thick steel base.

Seat and back rest material choices include redwood or southern yellow pine either natural finish or pressure-treated. All wood slats have eased edges and are pre-drilled for easy assembly.

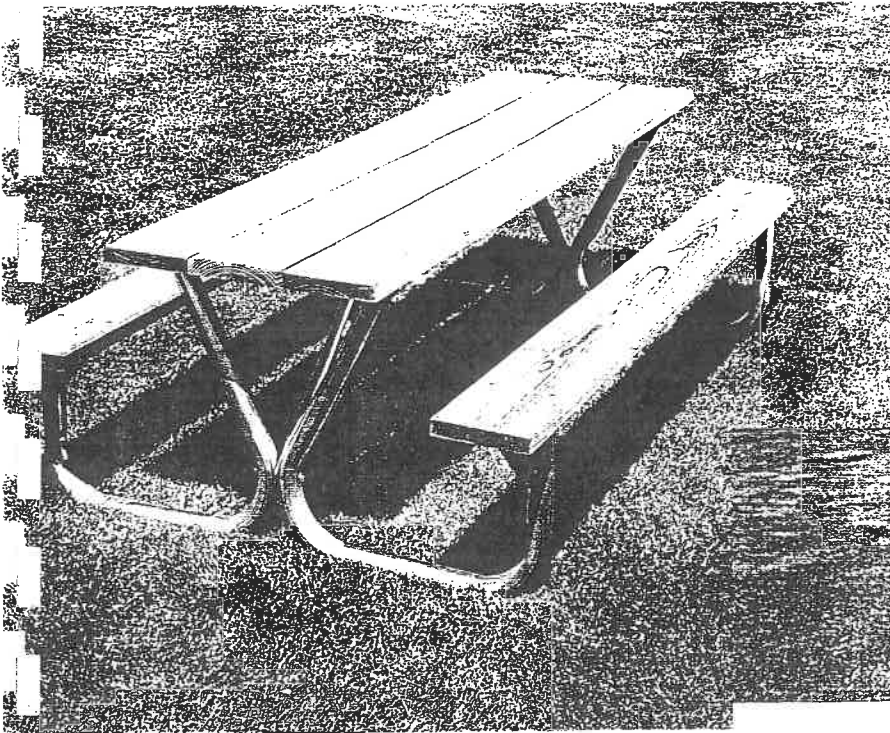


P-46-2

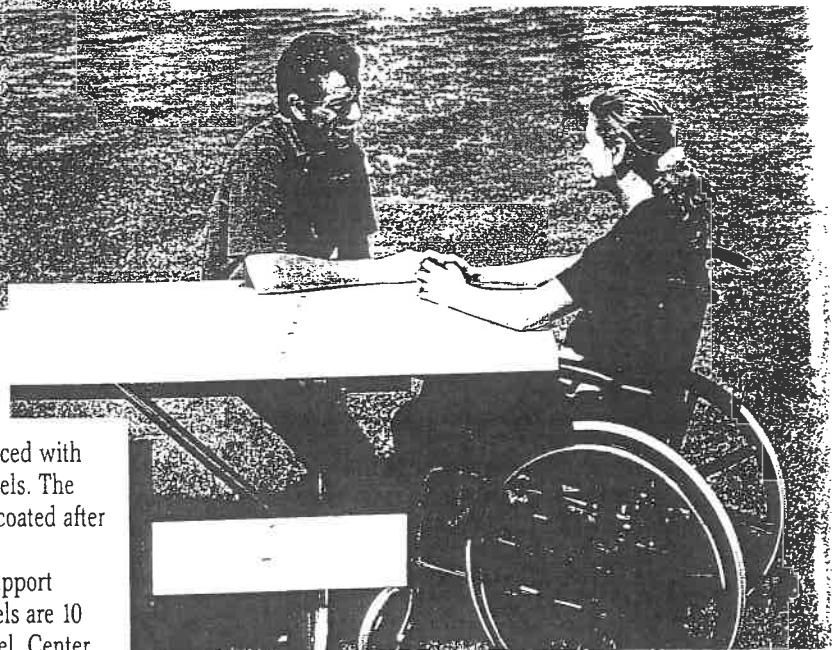
	Model Number	Description	Shipping Weight	Price
CONTOUR SERIES	P-36	6 stationary	118 lbs	\$312.00
	P-36-S	6 surface mount	130 lbs	353.00
	P-38	8 stationary	143 lbs	377.00
	P-38-S	8 surface mount	155 lbs	416.00
	E-72C	Legs only, stationary, pair	46 lbs	128.00
	E-73C	Legs only, surface mount, pair	58 lbs	168.00
	EXTRA-COMFORT	P-46	6 natural pine, stationary	106 lbs
P-46-1		6 pressure-treated pine, stationary	106 lbs	250.00
P-46-2		6 redwood, stationary	106 lbs	313.00
P-46-S		6 natural pine, surface mount	118 lbs	277.00
P-46-S1		6 pressure-treated pine, surface mount	118 lbs	286.00
P-46-S2		6 redwood, surface mount	118 lbs	349.00
P-48		8 natural pine, stationary	125 lbs	255.00
P-48-1		8 pressure-treated pine, stationary	125 lbs	267.00
P-48-2		8 redwood, stationary	125 lbs	357.00
P-48-S		8 natural pine, surface mount	137 lbs	291.00
P-48-S1		8 pressure-treated pine, surface mount	137 lbs	302.00
P-48-S2		8 redwood, surface mount	137 lbs	392.00
E-75C		Legs only, stationary, pair	51 lbs	171.00
E-76C		Legs only, surface mount, pair	62 lbs	206.00



Econo-6HD-3



Econo-8HD-1



WCT-8

**E**CONO SERIES... featuring simple styling and a choice of 2 $\frac{3}{8}$ " O.D. or 1 $\frac{5}{8}$ " galvanized steel frame.

Tops and seats are available in anodized aluminum, expanded metal, or southern yellow pine either natural finish or pressure-treated. Table height is 31" and overall width is 4'9".

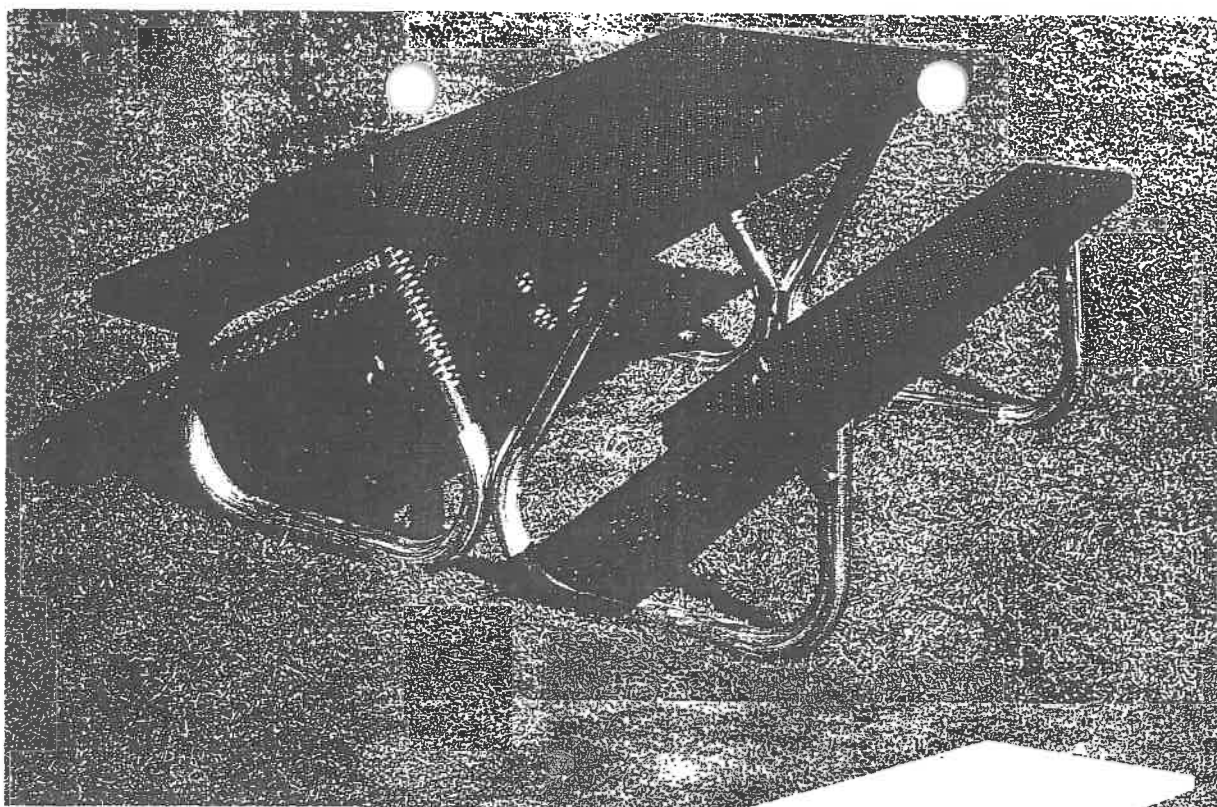
Wood models have heavy 2" x 10" planks. The expanded metal model features 3 $\frac{1}{2}$ " x 9 ga. unflattened steel that is framed with heavy steel

angles and reinforced with heavy steel channels. The metal is plastisol-coated after fabrication.

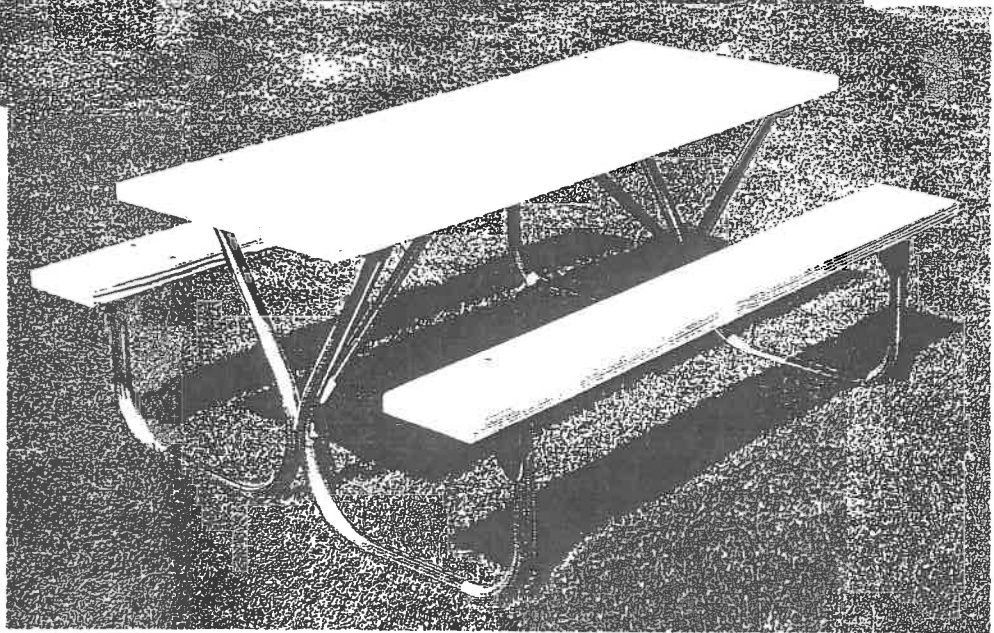
Seat and top support angles of all models are 10 ga. galvanized steel. Center braces are 1 $\frac{5}{8}$ " O.D. galvanized pipe.

A model designed specifically for the physically restricted has a top that is extended 12" beyond the frame at both ends. This permits moving a wheelchair closer to the table surface.



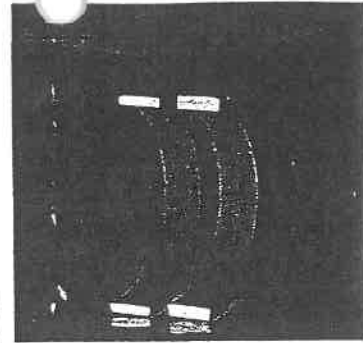
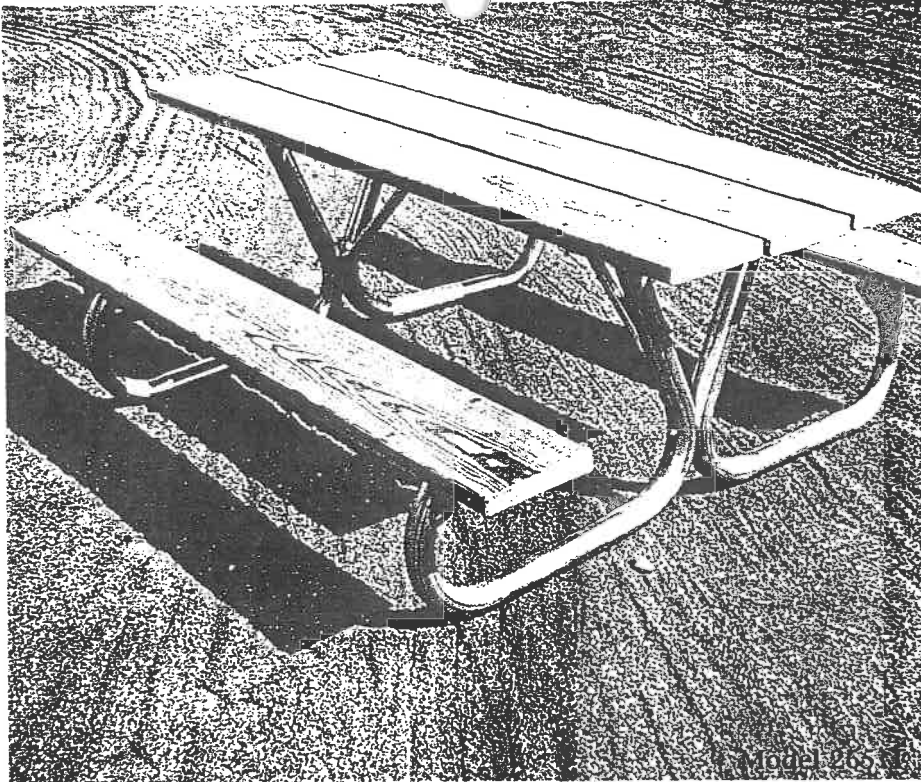


Econo-6HD-4



Econo-6

ECONO SERIES	Model Number	Description	Shipping Weight	Price
	Econo-6	8 natural pine 1 1/2" O.D. frame	168 lbs	\$216.00
	Econo-6-1	6 pressure-treated pine 1 1/2" O.D. frame	168 lbs	224.00
	Econo-6HD	8 natural pine 2" O.D. frame	195 lbs	241.00
	Econo-6HD-1	6 pressure-treated pine 2" O.D. frame	195 lbs	250.00
	Econo-8	8 natural pine 1 1/2" O.D. frame	195 lbs	229.00
	Econo-8-1	8 pressure-treated pine 1 1/2" O.D. frame	195 lbs	239.00
	Econo-8HD	8 natural pine 2" O.D. frame	221 lbs	254.00
	Econo-8HD-1	8 pressure-treated pine 2" O.D. frame	221 lbs	264.00
	Econo-6-3	8 aluminum 1 1/2" O.D. frame	125 lbs	441.00
	Econo-6HD-3	8 aluminum 2" O.D. frame	148 lbs	465.00
	Econo-8-3	8 aluminum 1 1/2" O.D. frame	143 lbs	521.00
	Econo-8HD-3	8 aluminum 2" O.D. frame	168 lbs	546.00
	Econo-6HD-4	8 pressure-treated pine 2" O.D. frame	161 lbs	446.00
	Econo-8HD-4	8 natural pine 2" O.D. frame	175 lbs	527.00
	WCT-8	8 natural pine 1 1/2" O.D. frame	195 lbs	229.00
	WCT-8-1	8 pressure-treated pine 1 1/2" O.D. frame	195 lbs	239.00
	WCT-8HD	8 natural pine 2" O.D. frame	221 lbs	254.00
	WCT-8HD-1	8 pressure-treated pine 2" O.D. frame	221 lbs	264.00
	WCT-8-3	8 aluminum 1 1/2" O.D. frame	143 lbs	493.00
	WCT-8HD-3	8 aluminum 2" O.D. frame	168 lbs	518.00
	EPT-23	8 natural pine 1 1/2" O.D. frame	195 lbs	146.00
	EPT-15	8 natural pine 1 1/2" O.D. frame	195 lbs	122.00
	EPT-24	8 natural pine 1 1/2" O.D. frame	195 lbs	146.00



Compare the thickness of Quality pipe with the kinds used by most competitors. Quality uses 2-3/8" O.D. pipe with .130" walls, while most competitors use 2-3/8" O.D. with .095" walls.

## Heavy-Duty Picnic Table

These sturdy, tip-resistant tables are constructed to withstand years of hard use with minimal maintenance. Leg design assures stability and easy access. Available with pressure treated wood, recycled plastic, or anodized aluminum seats and tops.

NOTE: Recycled plastic will, over a period of time, follow the contour of the surface it is setting on. It is recommended that recycled plastic tables and benches be set on a solid flat surface.

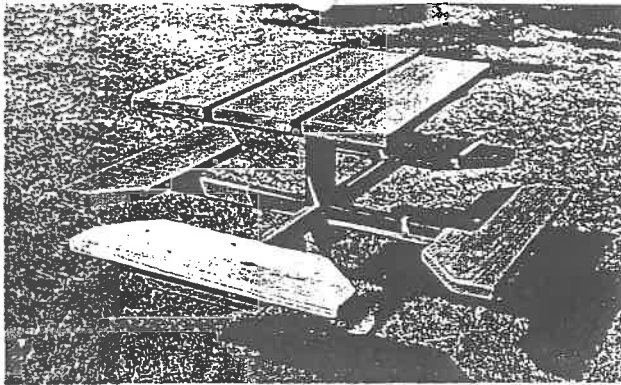
## Heavy-Duty Picnic Tables (2-3/8" O.D. galv. steel frames)

Model No.	Description	Type of Seat & Top	Ground Space	Weight	Price
200	Table Frame only	-	-	90 lbs. (41 kg.)	\$158
265	6' Heavy-Duty Table	2 x 10 aluminum	5'x6' (1.52x1.83 m.)	160 lbs. (73 kg.)	\$450
285	8' Heavy-Duty Table	2 x 10 aluminum	5'x6' (1.52x1.83 m.)	180 lbs. (82 kg.)	\$536
286	15' Heavy-Duty Table	2 x 10 aluminum	5'x15' (1.52x4.57 m.)	287 lbs. (130 kg.)	\$987
2651T	6' Heavy-Duty Table	2 x 10 treated wood	5'x6' (1.52x1.83 m.)	205 lbs. (93 kg.)	\$236
2851T	8' Heavy-Duty Table	2 x 10 treated wood	5'x8' (1.52x2.44 m.)	250 lbs. (113 kg.)	\$245
2651P*	6' Heavy-Duty Table	2 x 10 recycled plastic	5'x6' (1.52x1.83 m.)	234 lbs. (106 kg.)	\$454
2851P*	8' Heavy-Duty Table	2 x 10 recycled plastic	5'x8' (1.52x2.44 m.)	379 lbs. (172 kg.)	\$540

\* Specify color: BL-blue, BR-brown, or DG-Dark Green

## Standard Picnic Tables (1-5/8" O.D. galv. steel frames)

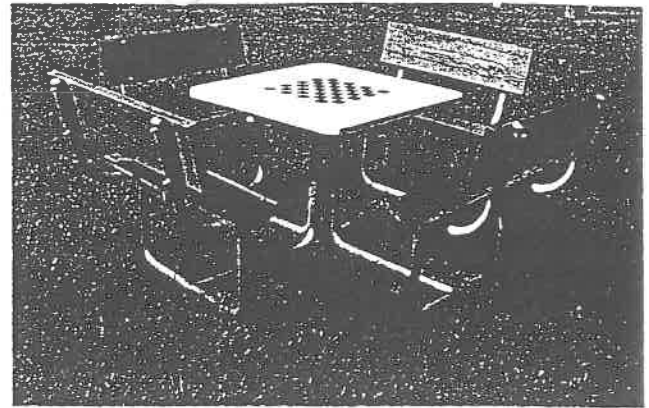
Model No.	Description	Type of Seat & Top	Ground Space	Weight	Price
65	6' Standard Table	2 x 10 aluminum	5'x6' (1.52x1.83 m.)	136 lbs.	\$410
85	8' Standard Table	2 x 10 aluminum	5'x8' (1.52x2.44 m.)	156 lbs.	\$493
100	Table Frame only	-	-	65 lbs.	\$110
651T	6' Standard Table	2 x 10 treated wood	5'x6' (1.52x1.83 m.)	176 lbs.	\$198
851T	8' Standard Table	2 x 10 treated wood	5'x8' (1.52x2.44 m.)	221 lbs.	\$221



### Square Single-Post Table

This unique table is great for picnics. Center post is 3-1/2" O.D. galvanized steel, seats and top are southern yellow pine stained in rich walnut. A versatile table designed for use in parks and recreation areas everywhere. Single post allows easy lawn mowing.

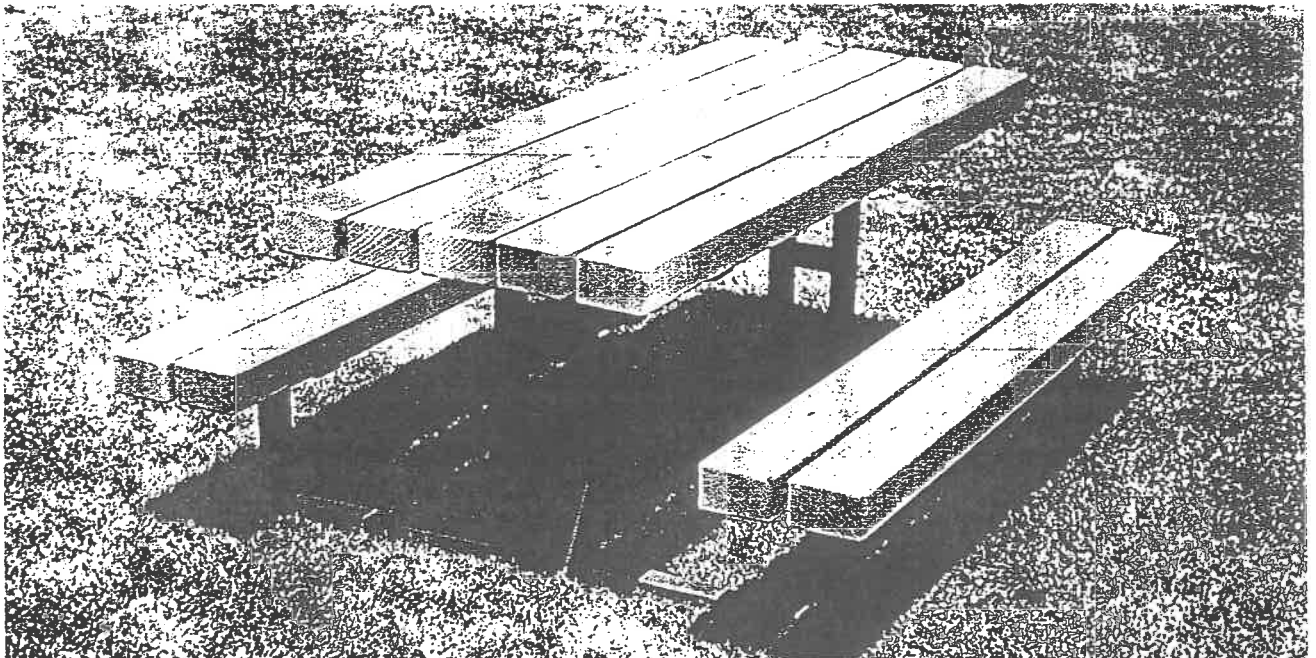
- No. 692 Permanent (shown), ground space 5' 1" (155 cm.) sq., wt. 173 lbs. (78 kg.).....\$362
- No. 693 Portable, wt. 200 lbs. (91 kg.).....\$386



### Game Table (Portable)

This square fiberglass game table features a molded-in checkerboard, galvanized frame and durable construction for long, hard use. Ideal for all age groups. Great for recreation centers, parks and playgrounds.

- No. 702 Game Table, ground space 6' 6" (1.98 m.) sq., wt. 219 lbs. (99 kg.).....\$708



### Paul Bunyan Picnic Table

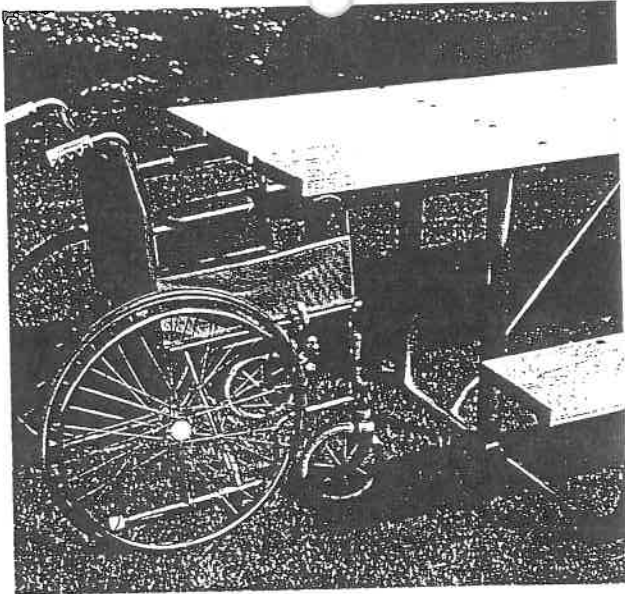
Paul Bunyan himself would be proud to sit down at this massive picnic table. The top and seats are made from 4" thick x 6" wide natural redwood planks or recycled plastic planks. The painted frame is constructed from 2" square tubular steel to last as long as the Paul Bunyan legend. See page 95 for Paul Bunyan Bench.

- No. 636DR Six-Foot, Redwood, Portable (shown), ground space 60" x 72" (1.52 x 1.83 m.), wt. 316 lbs. (143 kg.).....\$480
- No. 636P\* Six-Foot, Plastic, Portable, ground space 60" x 72" (1.52 x 1.83 m.), wt. 462 lbs. (210 kg.).....\$610
- No. 637DR Six-Foot, Redwood, Permanent, ground space 60" x 72" (1.52 x 1.83 m.), wt. 329 lbs. (149 kg.).....\$491

- No. 637P\* Six-Foot, Plastic, Permanent, ground space 60" x 72" (1.52 x 1.83 m.), wt. 481 lbs. (218 kg.)....\$621
- No. 638DR Eight-Foot, Redwood, Portable, ground space 60" x 96" (1.52 x 2.44 m.), wt. 388 lbs. (176 kg.).....\$542
- No. 638P\* Eight-Foot, Plastic, Portable, ground space 60" x 96" (1.52 x 2.44 m.), wt. 584 lbs. (265 kg.)....\$707
- No. 639DR Eight-Foot, Redwood, Permanent, ground space 60" x 96" (1.52 x 2.44 m.), wt. 401 lbs. (182 kg.).....\$559
- No. 639P\* Eight-Foot, Plastic, Permanent, ground space 60" x 96" (1.52 x 2.44 m.), wt. 602 lbs. (273 kg.).....\$717

\*Specify color: BL-Blue, BR-Brown, DG-Dark Green

NOTE: Recycled plastic will, over a period of time, follow the contour of the surface it is setting on. It is recommended that recycled plastic tables and benches be set on a solid flat surface.



## Welded Wheelchair Table

This much-needed picnic table features extended height to allow wheelchair arms to fit under the top. Rugged, welded-frame construction.

No. 7925T Welded Wheelchair Table, pressure-treated wood, 1-5/8" O.D. frame, ground space 5' 2" x 8' (1.57 x 2.44 m.), wt. 191 lbs. (87 kg.).....\$244

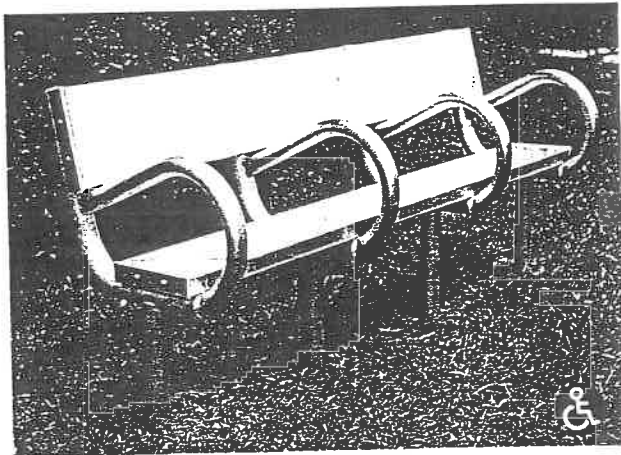
No. 7926 Welded Wheelchair Table, anodized aluminum, 1-5/8" O.D. frame, ground space 5' 2" x 8' (1.57 x 2.44 m.), wt. 141 lbs. (64 kg.).....\$474

No. 7927T Welded Wheelchair Table (shown), pressure-treated wood, 2-3/8" O.D. frame, ground space 5' 11" x 8' (1.80 x 2.44 m.), wt. 228 lbs. (103 kg.).....\$281

No. 7928 Welded Wheelchair Table, anodized aluminum, 2-3/8" O.D. frame, ground space 5' 11" x 8' (1.80 x 2.44 m.), wt. 178 lbs. (81 kg.).....\$517

No. 7924 Welded Wheelchair Table, 1-5/8" O.D. frame only, wt. 65 lbs. (29 kg.).....\$159

No. 7929 Welded Wheelchair Table, 2-3/8" O.D. frame only, wt. 102 lbs. (46 kg.).....\$186



## Heavy Duty Park Bench

This is an extremely high-quality park bench designed specifically to aid the disabled. Features galvanized steel frames and cool anodized aluminum seats or recycled plastic seats.

No. 60 Park Bench, frames only (4 pcs.), wt. 117 lbs. (53 kg.).....\$222

No. 66 Aluminum Park Bench, 2' x 6' (.61 x 1.83 m.), wt. 144 lbs. (65 kg.).....\$385

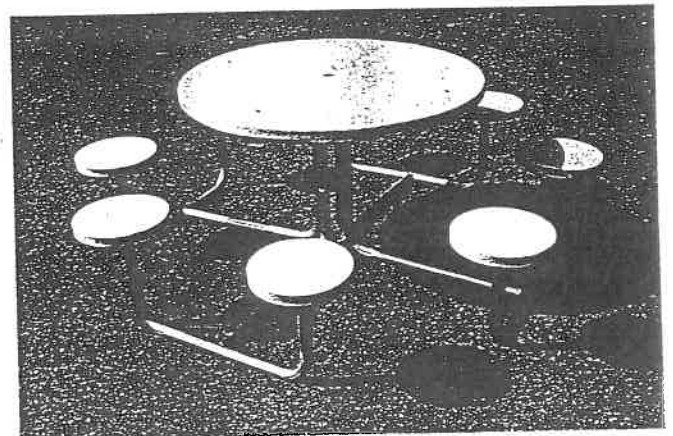
No. 66P\* Recycled Plastic Park Bench, 2' x 6' (.61 x 1.83 m.), wt. 176 lbs. (80 kg.).....\$386

No. 68 Aluminum Park Bench (shown), 2' x 8' (.61 x 2.44 m.), wt. 153 lbs. (69 kg.).....\$416

No. 68P\* Recycled Plastic Park Bench, 2' x 8' (.61 x 2.44 m.), wt. 198 lbs. (90 kg.).....\$416

\*Specify color: BL-Blue, BR-Brown, DG-Dark Green

NOTE: Recycled plastic will, over a period of time, follow the contour of the surface it is setting on. It is recommended that recycled plastic tables and benches be set on a solid flat surface.

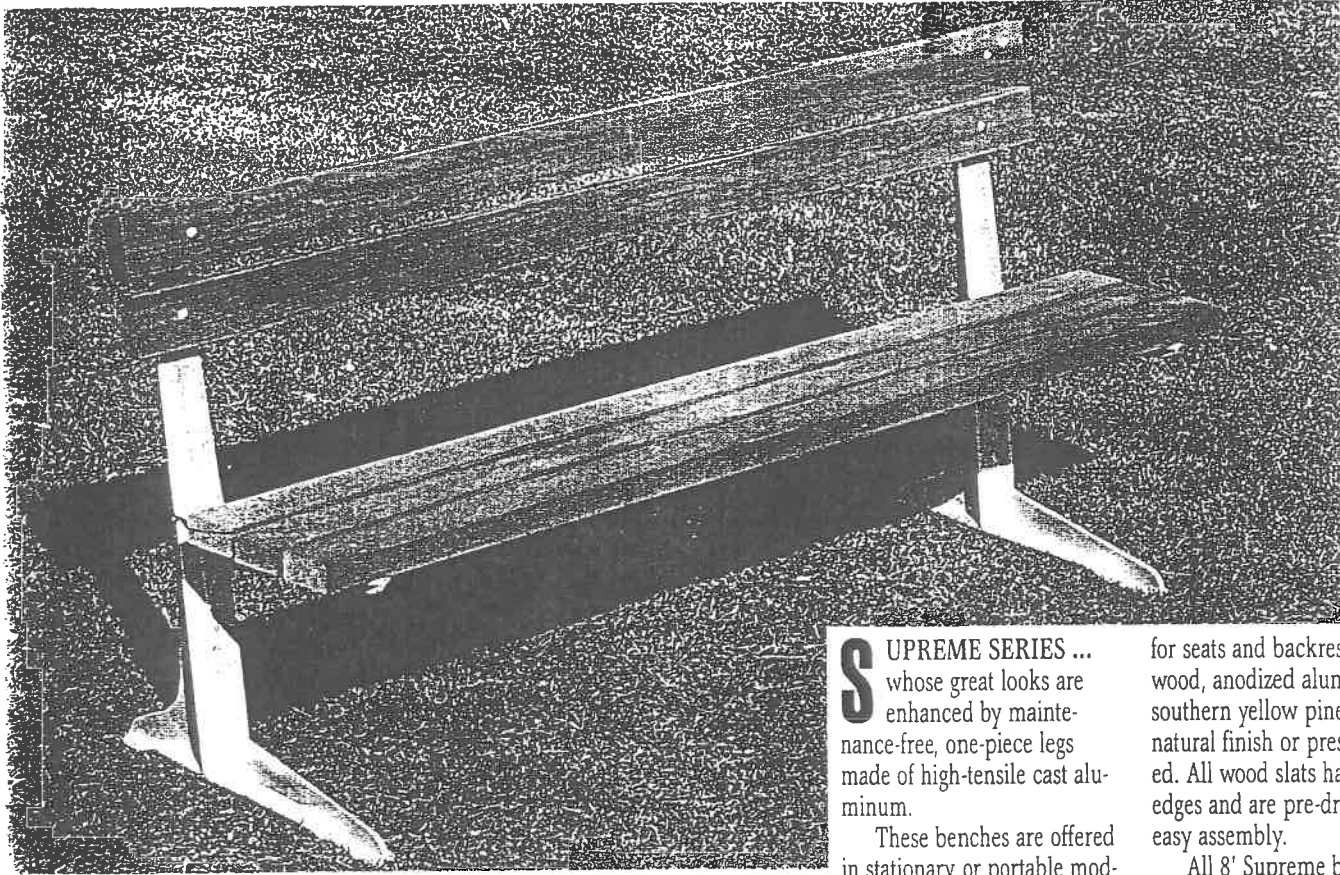


## Round Picnic Table

Seats eight in comfort on 1' (30 cm.) dia. seats. Top is 3' 7" (109 cm.) dia., powder coated, with rolled edges.

No. 675 Round Picnic Table, ground space 6' 6" (198 cm.) dia., wt. 165 lbs. (75 kg.).....\$621





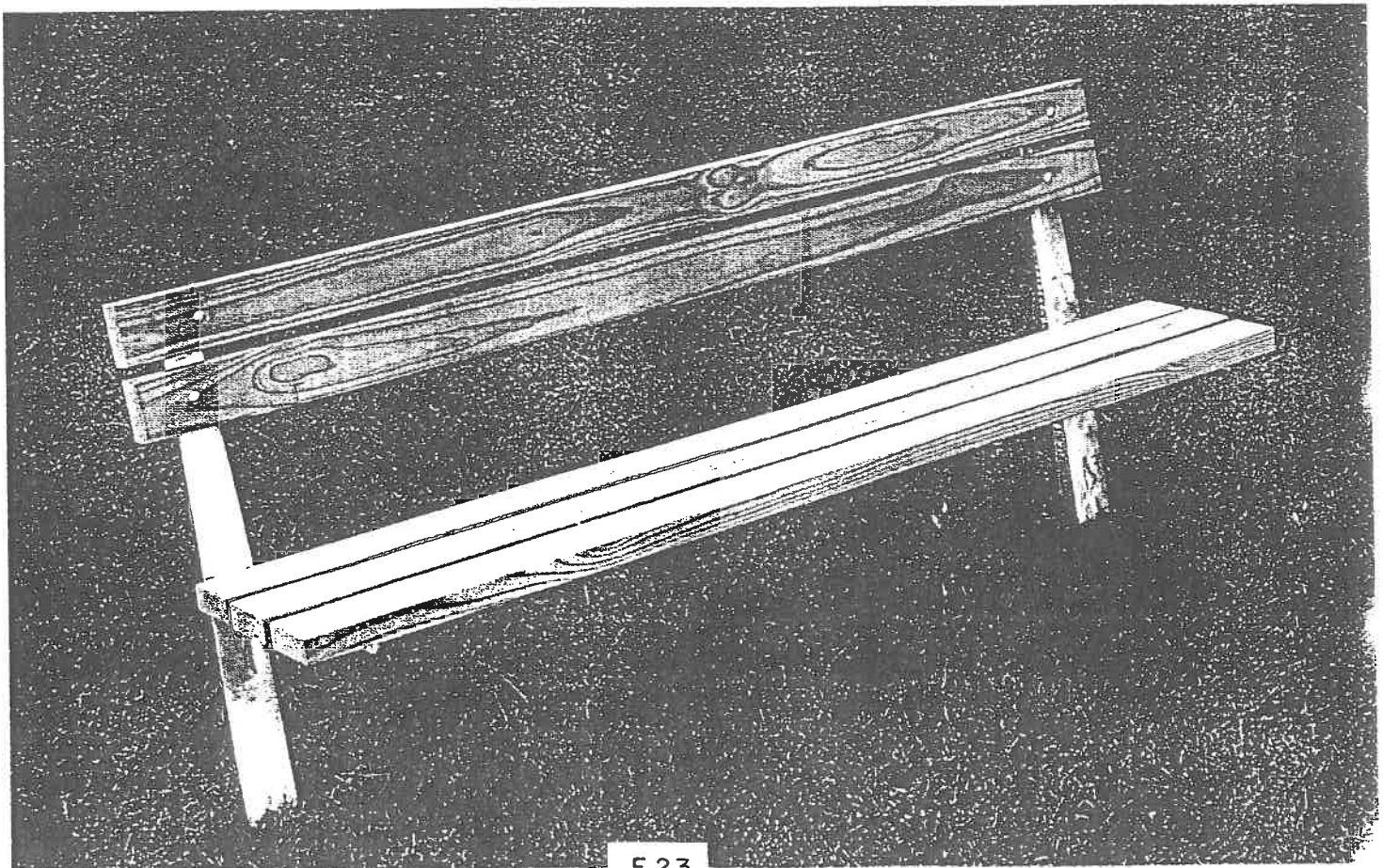
**S**UPREME SERIES ... whose great looks are enhanced by maintenance-free, one-piece legs made of high-tensile cast aluminum.

These benches are offered in stationary or portable models with a choice of material

for seats and backrests: redwood, anodized aluminum, or southern yellow pine either natural finish or pressure-treated. All wood slats have eased edges and are pre-drilled for easy assembly.

All 8' Supreme benches have three legs.

PA-60



# PICNIC TABLES



SAR-4

**S**IT-A-ROUND... for outdoor or indoor use, for picnics or games or other applications.

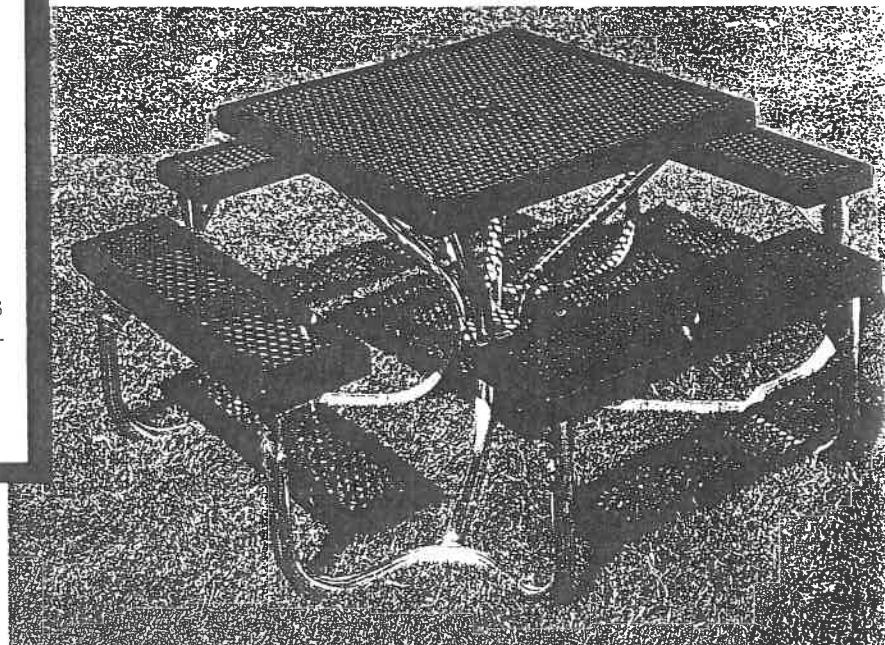
Top of the table is 3' square; overall dimensions are 6' x 6'; and table height is 30". Tops and seats are available in expanded metal or southern yellow pine either natural finish or pressure treated.

Top and seat boards of the wood models are 2" x 10" x 36". The expanded metal is 3/4" x 9 ga. unflattened steel

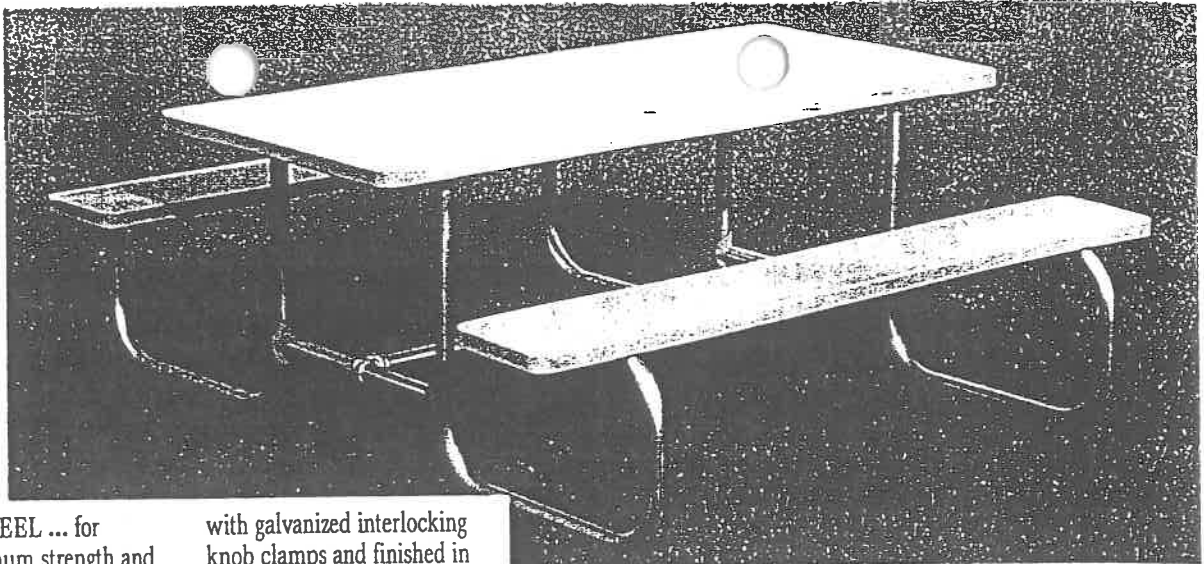
that is framed with heavy steel angles and reinforced with heavy steel channels. The metal is plastisol-coated after fabrication.

Top and seat supports are heavy 10 ga. galvanized steel. The frame is 1 1/2" O.D. galvanized steel.

Wood models have edges that are eased, and the boards are pre-drilled for easy assembly. The top of the expanded metal model has an opening for an umbrella.



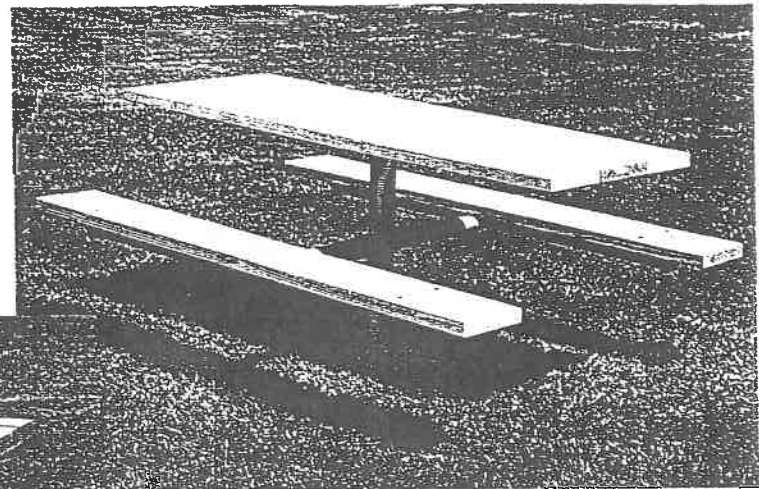
SAR-4-4



PT-6-M

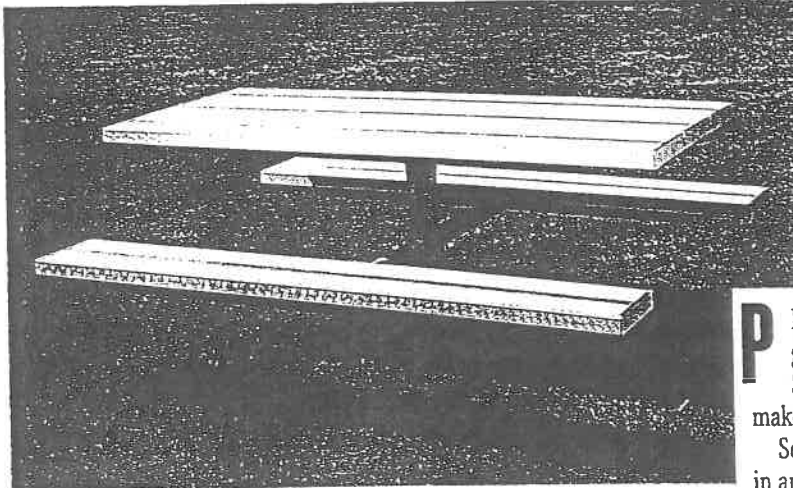
**A**LL-STEEL ... for maximum strength and freedom of maintenance. The top is 6' x 33"; seats are 6' x 12". Both are made of 14 ga. steel that is reinforced with welded 14 ga. channels. They are fastened to the frame

with galvanized interlocking knob clamps and finished in yellow baked-on enamel. The frame is welded 1 5/8" O.D. galvanized steel with a bottom brace providing extra stability and serving as a footrest.



SPT-6

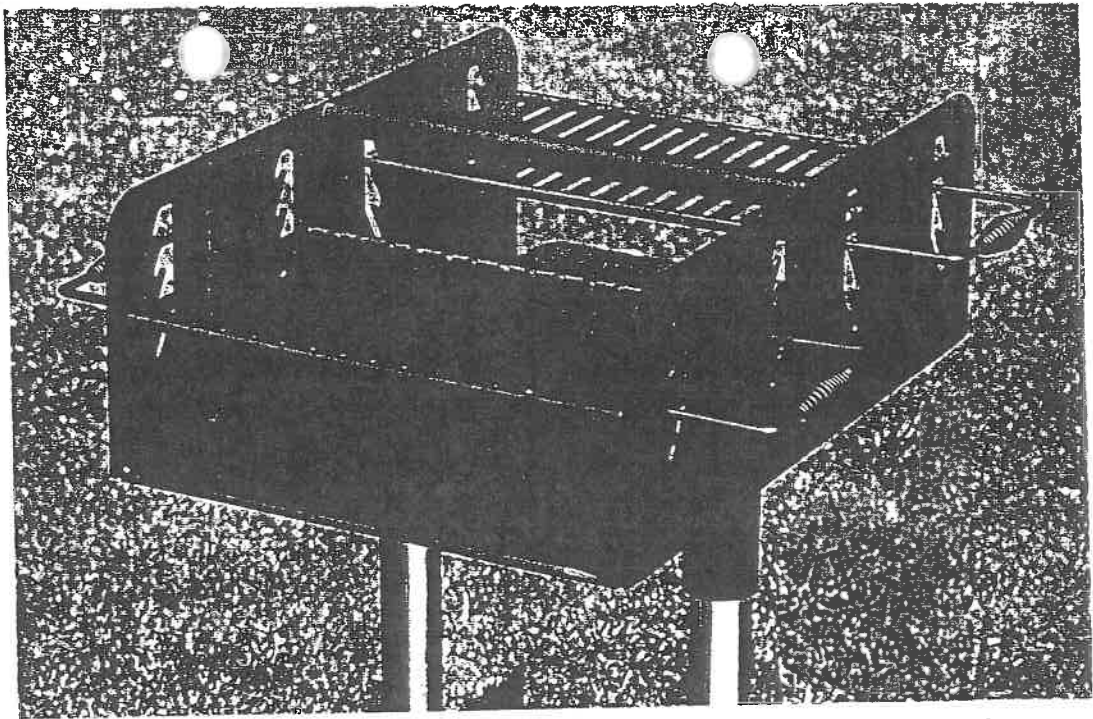
SPT-6-3



**P**EDESTAL... with a single support of 3 1/2" O.D. Sch. 40 galvanized pipe makes area maintenance easy. Seats and tops are available in anodized aluminum, southern yellow pine either natural finish or pressure-treated, and expanded metal. Seat and top supports are 2 3/8" O.D. Sch. 40 galvanized pipe. Overall length of the table is 6'; width is 4'7". Table height is 31".

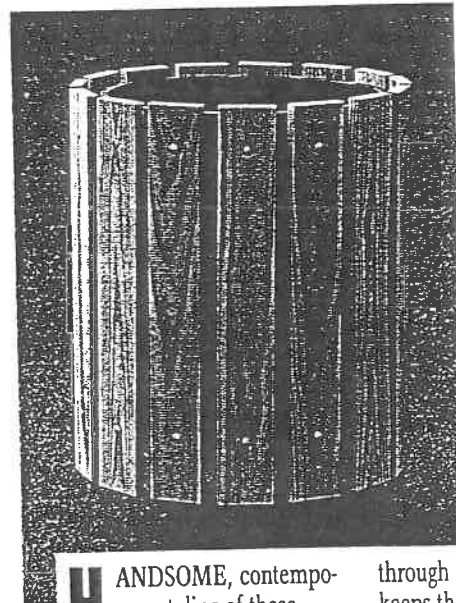
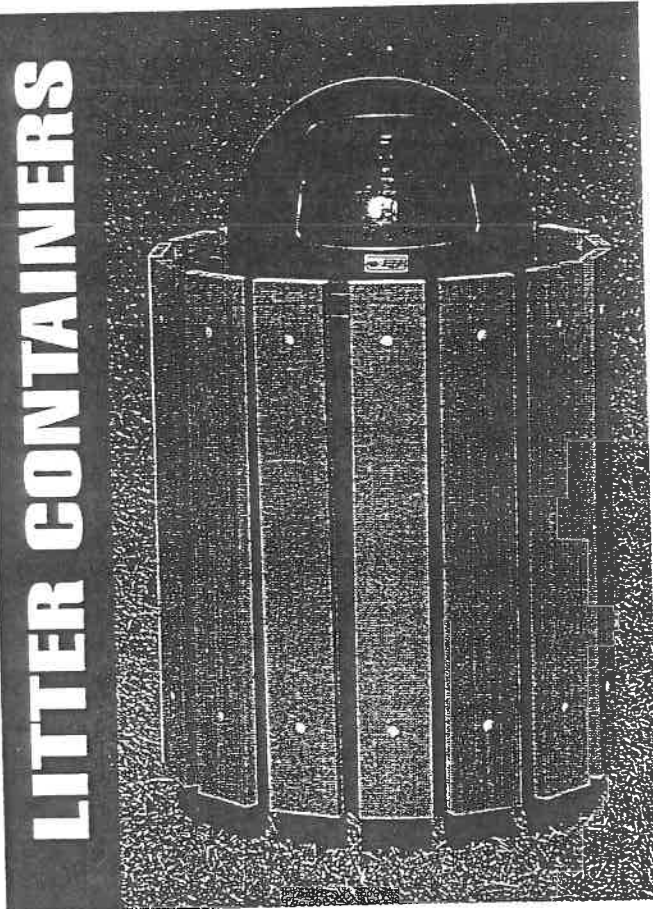
	Model Number	Description	Shipping Weight	Price
SIT-A-ROUND	SAR-4	Natural Pine	166 lbs	\$311.00
	SAR-4-1	Pressure-treated Pine	166 lbs.	318.00
	SAR-4-4	Expanded metal	210 lbs	559.00
	SAR-1	Frame only	30 lbs	208.00
	SAR-2	Frame only - Expanded Metal	30 lbs	208.00
ALL-STEEL	PT-6-M	Steel	237 lbs	\$462.00
PEDESTAL	SPT-6	Natural Pine	222 lbs	\$341.00
	SPT-6-1	Pressure-treated pine	222 lbs	348.00
	SPT-6-3	Aluminum	170 lbs	557.00
	SPT-6-4	Expanded Metal	271 lbs	546.00
	SPT-1	Frame only	136 lbs	248.00
	SPT-2	Frame only - Expanded Metal	136 lbs	248.00

67



Grill with two supports and two four-position cooking grates offers 480 square inches of total cooking area.

## LITTER CONTAINERS



LC-5

**H**ANDSOME, contemporary styling of these Burke containers makes them perfect for any outdoor environment.

A choice of permanent or portable models is available, with decorative slats of either redwood or pressure-treated southern yellow pine. The bolt-

through design of the slats keeps them from being torn off.

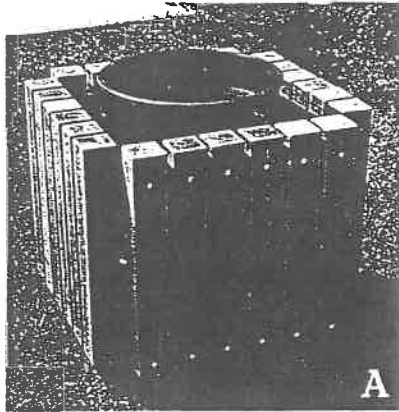
A strong, welded steel frame has a baked-on brown enamel finish. Permanent models have a 17/8" O.D. galvanized steel support pipe.

All containers include a 22 gallon plastic liner.

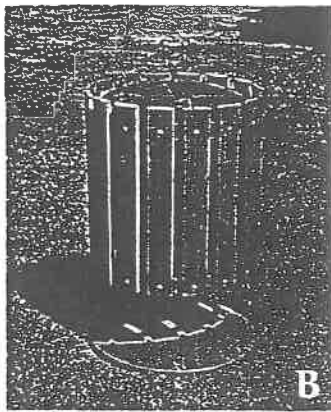
### LC-4P w/ L-6 Dome

	Model Number	Description	Shipping Weight	Price
PICNIC GRILLS	37	One-piece adjustable	70 lbs	\$120.00
	47	Giant single-surface	135 lbs	274.00
	67	Double-surface	133 lbs	264.00
LITTER CONTAINERS	LC-4	Redwood stationary	46 lbs	147.00
	LC-5	Pressure-treated Pine stationary	46 lbs	135.00
	LC-4P	Redwood, portable	45 lbs	158.00
	LC 5P	Pressure-treated Pine portable	45 lbs	147.00
	L-6	Dome with spring-loaded opening top	8 lbs	78.00

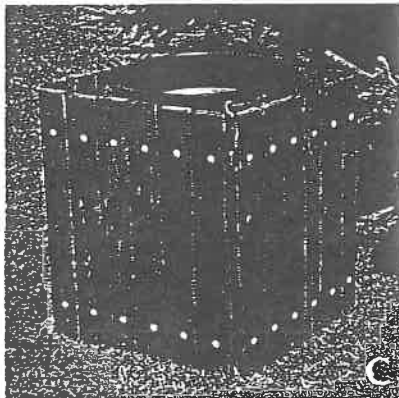




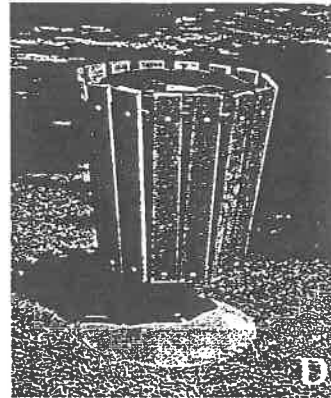
**A**



**B**



**C**



**D**

### Redwood Litter Receptacles

These redwood slatted receptacles are perfect for indoor malls, outdoor shopping centers, public buildings and many other locations where the public should be encouraged to dispose of litter properly. The receptacles are constructed for durability and long-lasting beauty.

A. Square Litter Receptacle (22 gal. container, not included)

No. 1604DR Square Litter Receptacle, portable, redwood slats, wt. 255 lbs. (116 kg.).....\$319

No. 1605DR Square Litter Receptacle, permanent, redwood slats, wt. 271 lbs. (123 kg.).....\$334

B. Round Litter Receptacle (Black Plastic 22 gal. container included)

No. 1616 Round Litter Receptacle, portable, ground space 1' 11" (58 cm.) dia., wt. 71 lbs. (32 kg.).....\$237

No. 1617 Round Litter Receptacle, permanent, ground space 1' 11" (58 cm.) dia., wt. 64 lbs. (29 kg.).....\$183

C. Waste Receptacle (22 gal. container, not included)

No. 1600 Waste Receptacle, portable, 2' sq. x 2' 6" (.61 m. sq. x .76 m.) high, wt. 95 lbs. (43 kg.).....\$251

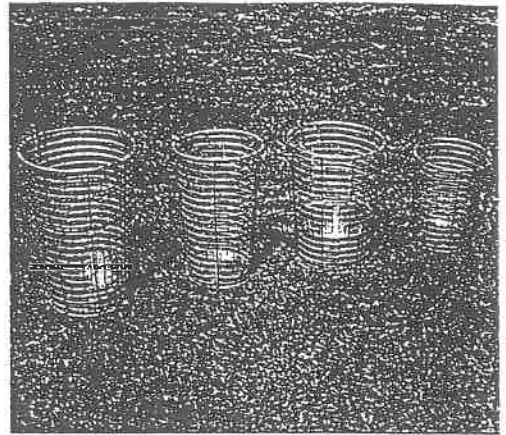
No. 1601 Waste Receptacle, permanent, 2' sq. x 2' 6" (.61 m. sq. x .76 m.) high, wt. 95 lbs. (43 kg.).....\$261

D. Tapered Litter Receptacle (22 gal. container, not included)

Attractive tapered unit just right for malls, shopping centers or office areas. Encourages the public to properly dispose of litter.

No. 1602 Tapered Litter Receptacle, permanent, wt. 64 lbs. (29 kg.).....\$146

No. 1603 Tapered Litter Receptacle, portable, wt. 71 lbs. (32 kg.).....\$186



### Quality Wire Litter Basket

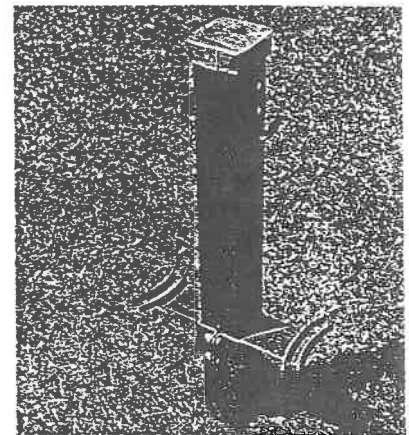
Quality wire litter baskets are built to stand up to hard day-in, day-out use. Features heavy-duty wire mesh and vertical braces. Tapered design for easy handling and nesting.

No. 1590 Wire Litter Basket, Dia. 16" (41 cm.) top, 18" (46 cm.) bottom, 20" (56 cm.) high, wt. 11-1/2 lbs. (5 kg.).....\$100

No. 1591 Wire Litter Basket, Dia. 18" (46 cm.) top, 15" (38 cm.) bottom, 31" (79 cm.) high, wt. 18 lbs. (8 kg.).....\$126

No. 1592 Wire Litter Basket, Dia. 21" (53 cm.) top, 17-1/2" (44 cm.) bottom, 28" (71 cm.) high, wt. 28 lbs. (13 kg.).....\$173

No. 1593 Wire Litter Basket, Dia. 22" (56 cm.) top, 18" (46 cm.) bottom, 34" (86 cm.) high, wt. 43 lbs. (20 kg.).....\$199



### Trash Can Holder

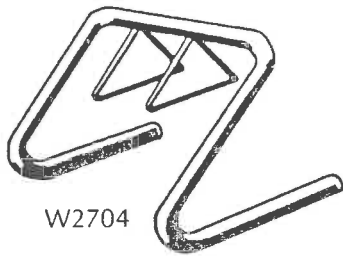
No. 1660 Trash Can Holder, steel post, single holder, wt. 40-1/2 lbs. (18 kg.).....\$106

No. 1661 Trash Can Holder, steel post, double holder, wt. 46 lbs. (21 kg.).....\$159

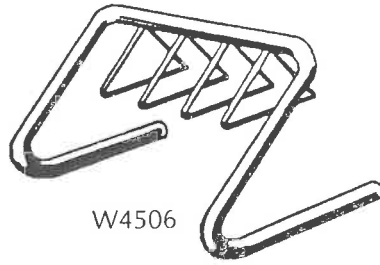
No. 1662DR Trash Can Holder, redwood post, single holder, wt. 40-1/2 lbs. (18 kg.).....\$91

No. 1663DR Trash Can Holder, redwood post, double holder, wt. 46 lbs. (21 kg.).....\$121

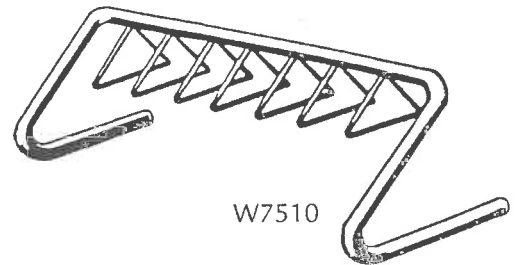
# CORA EXPO® 'W' SERIES



W2704

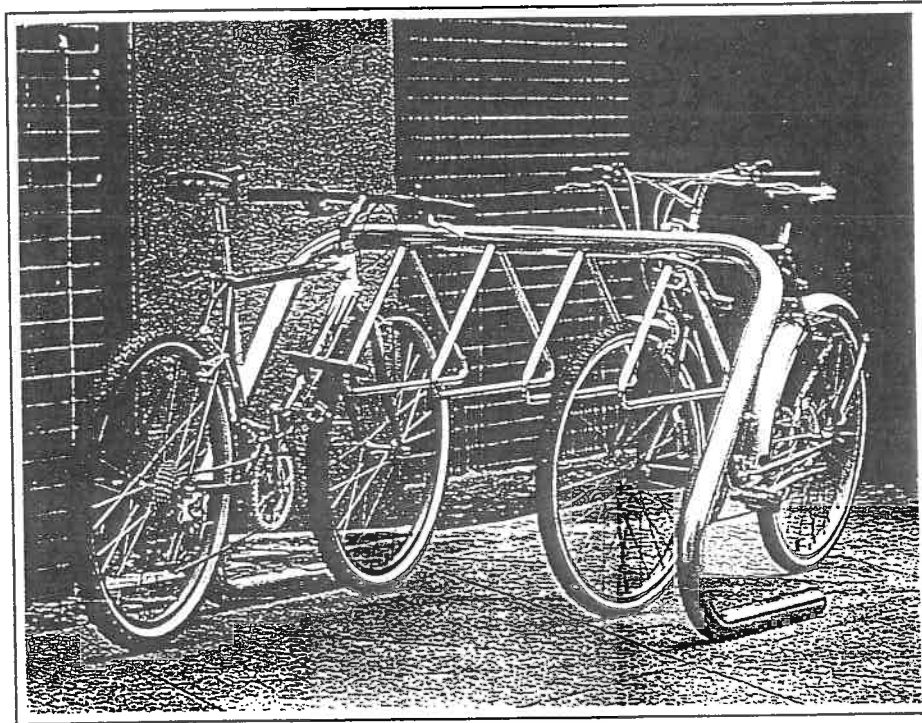


W4506



W7510

	EXPO® 2704	EXPO® 4506	EXPO® 7510
CAPACITY:	4	6	10
WEIGHT: Carbon	45LB	75LB	90LB
Stainless	50LB	83LB	99LB
PIN TO PIN:	29 <sup>3</sup> / <sub>8</sub> "	47 <sup>3</sup> / <sub>8</sub> "	74 <sup>3</sup> / <sub>8</sub> "
HEIGHT: 34" DEPTH: 30"			U.S. PATENT No. D305,010



## SERIES SPECIFICATIONS

### CONSTRUCTION

- Heavy duty high quality steels
- Mainframe C.R.W. 2<sup>3</sup>/<sub>8</sub>" OD H.S.
- Lock support ASTM A-36 3<sup>3</sup>/<sub>4</sub>" H.R. Roundbar

### FINISHES

- Stainless steel, Galvanized steel, Plastic color coated carbon steel

### FEATURES

- **SECURITY** – designed to lock both the frame and wheel(s) of the bicycle
- **SIMPLICITY** – cyclists find the EXPO® rack user friendly
- **VERSATILITY** – accepts all types of bicycles, tandems, tricycles and trailers
- **POPULARITY** – the highest degree of user popularity ever

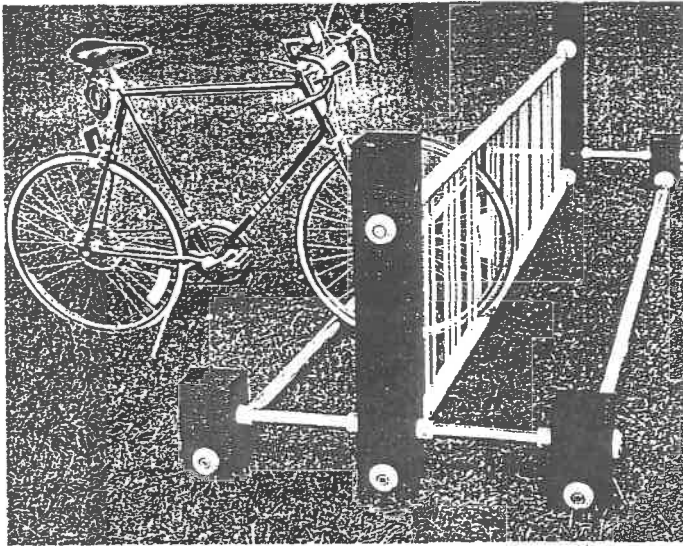


## Steel Bike Racks

Quality's extra-heavy duty bike racks are designed to be rust resistant, virtually maintenance free and vandal proof.

- No. 1033 Portable, 10' Bike Rack (shown), ground space 3' x 10' (.91 x 3.05 m.), wt. 131 lbs. (59 kg.).....\$305
- No. 1034 Permanent, 10' Bike Rack, ground space 3' x 10' (.91 x 3.05 m.), wt. 135 lbs. (61 kg.).....\$311
- No. 2033 Portable, 20' Bike Rack, ground space 3' x 20' (.91 x 6.10 m.), wt. 256 lbs. (116 kg.).....\$536
- No. 2034 Permanent, 20' Bike Rack, ground space 3' x 20' (.91 x 6.10 m.), wt. 252 lbs. (114 kg.).....\$542
- No. 1035 Wall Mount, 10' Bike Rack, ground space 2' x 10' (.61 x 3.05 m.), wt. 105 lbs. (48 kg.).....\$197
- No. 533 Portable, 5' Bike Rack, ground space 3' x 5' (.91 x 1.52 m.), wt. 78 lbs. (35 kg.).....\$195
- No. 534 Permanent, 5' Bike Rack, ground space 3' x 5' (.91 x 1.52 m.), wt. 82 lbs. (37 kg.).....\$199

NOTE: Each 5' (1.52 m.) section will accommodate 4 bikes per side. Each 10' (3.05 m.) section will accommodate 9 bikes per side.



## Recycled Plastic Bike Racks

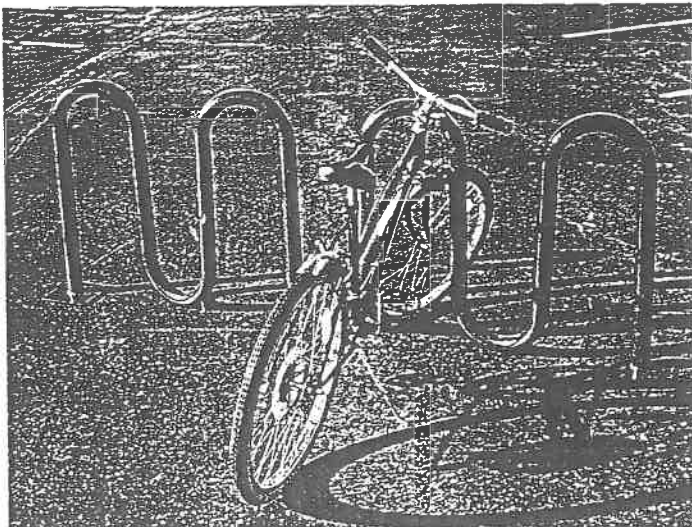
Quality Recycled Plastic Bike Racks will last for as long as you will remember, and they look great. Ground space 4' x 12' (1.22 x 3.66 m.).

- No. 6900 P\* Permanent, 10' Bike Rack, single face, wt. 247 lbs. (75 kg.).....\$346
- No. 6903 P\* Portable, 10' Bike Rack, single face, wt. 209 lbs. (95 kg.).....\$316
- No. 6906 P\* Permanent 10' Bike Rack (shown), double face, wt. 319 lbs. (145 kg.).....\$446
- No. 6909 P\* Portable, 10' Bike Rack, double face, wt. 261 lbs. (118 kg.).....\$396

\*Specify COLOR: BL-Blue, BR-Brown, DG-Dark-Green.

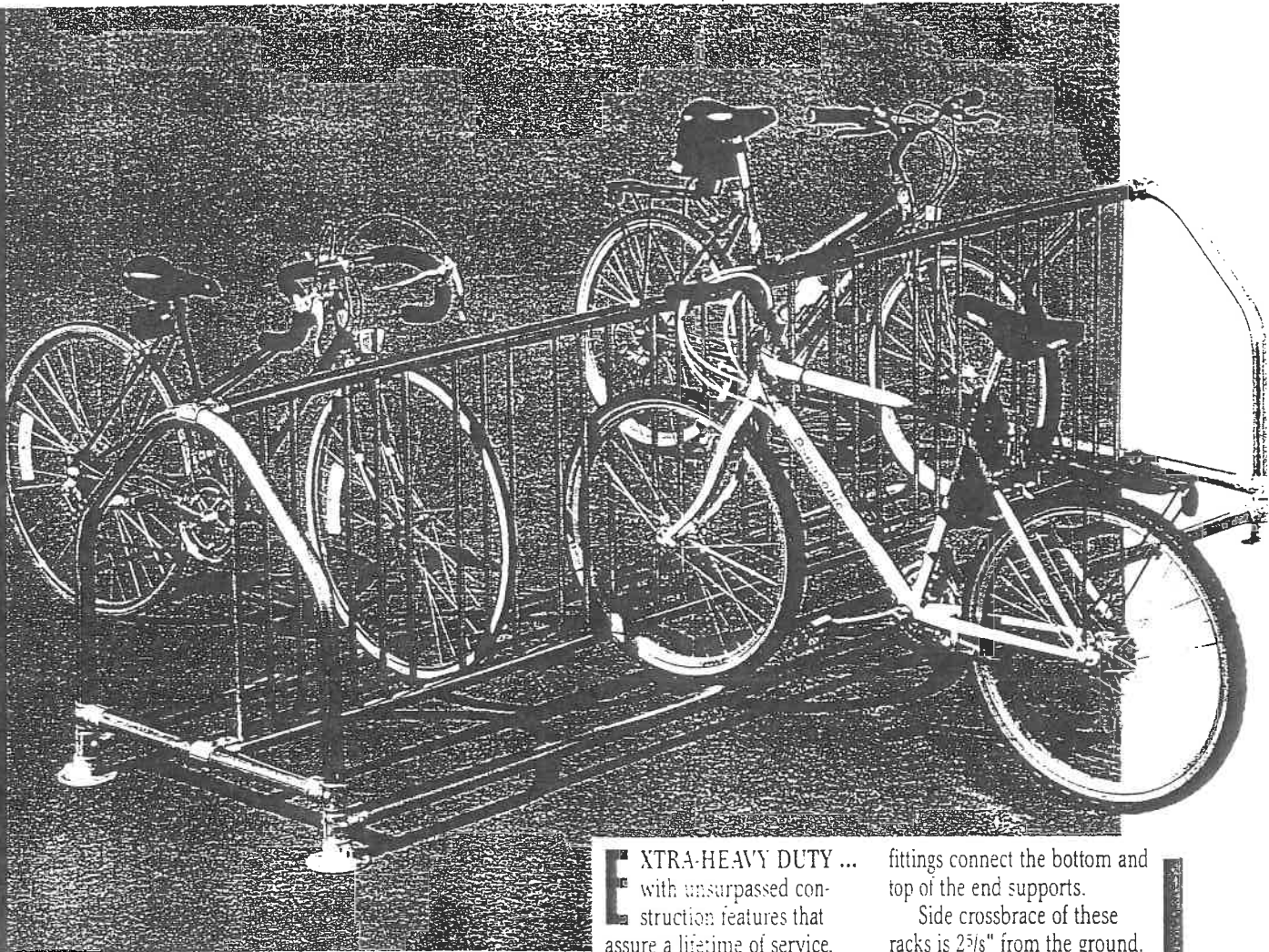
## Loop Steel Bike Racks

Quality's loop racks are made from 2-3/8" O.D. galvanized steel and are polyester powder coated for a long colorful life. See pages 3 and 4 for colors.



- No. 1045 In Ground, Loop Bike Rack, 36" (.91 m.) long, wt. 45 lbs. (20 kg.).....\$136
- No. 1046 Surface Mount, Loop Bike rack, 36" (.91 m.) long, wt. 43 lbs. (19 kg.).....\$136
- No. 1047 In Ground, Loop Bike Rack, 60" (1.52 m.) long, wt. 64 lbs. (29 kg.).....\$182
- No. 1048 Surface Mount, Loop Bike Rack, 60" (1.52 m.) long, wt. 63 lbs. (29 kg.).....\$182
- No. 1049 In Ground, Loop Bike Rack, 84" (2.13 m.) long, wt. 89 lbs. (40 kg.).....\$226
- No. 1050 Surface Mount, Loop Bike Rack (shown), 84" (2.13 m.) long, wt. 82 lbs. (37 kg.).....\$226

# BIKE RACKS



**BR-6P**

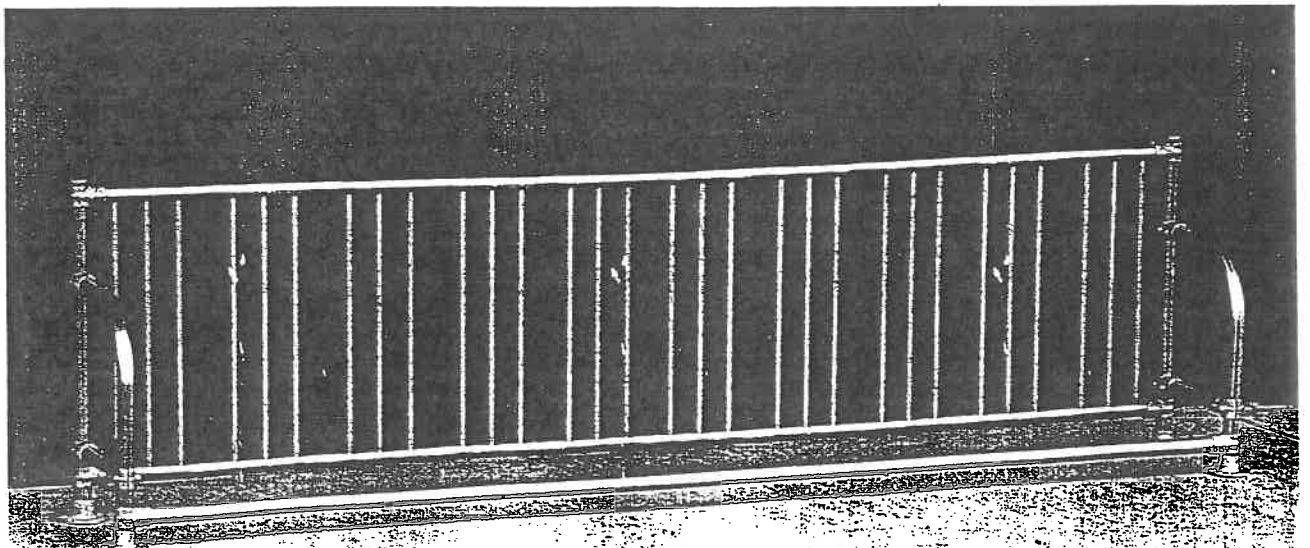
**E**XTRA-HEAVY DUTY ... with unsurpassed construction features that assure a lifetime of service.

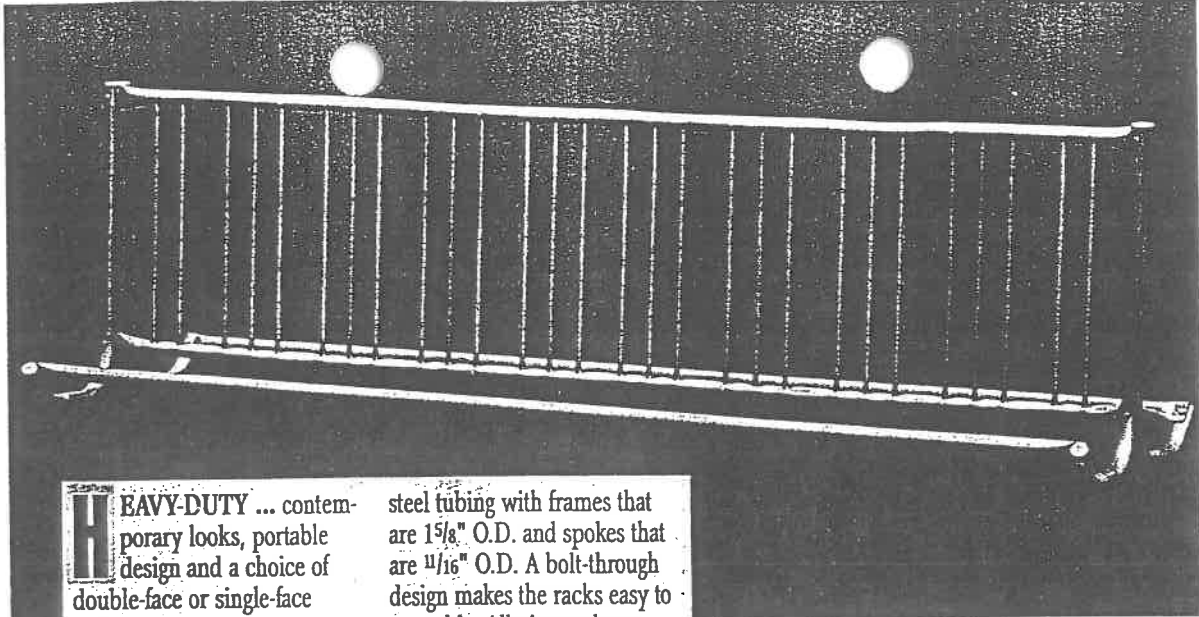
Frames are  $1\frac{3}{8}$ " O.D. and spokes are  $\frac{3}{16}$ " O.D. galvanized pipe. Fittings are clamp-type; when extra sections are desired, bolt-through double-T

fittings connect the bottom and top of the end supports.

Side crossbrace of these racks is  $2\frac{3}{8}$ " from the ground. Openings between the 29 spokes per unit are  $2\frac{1}{2}$ " wide. The portable model has a  $1\frac{1}{2}$ " high base flange made of galvanized malleable iron.

**BR-6-SP**





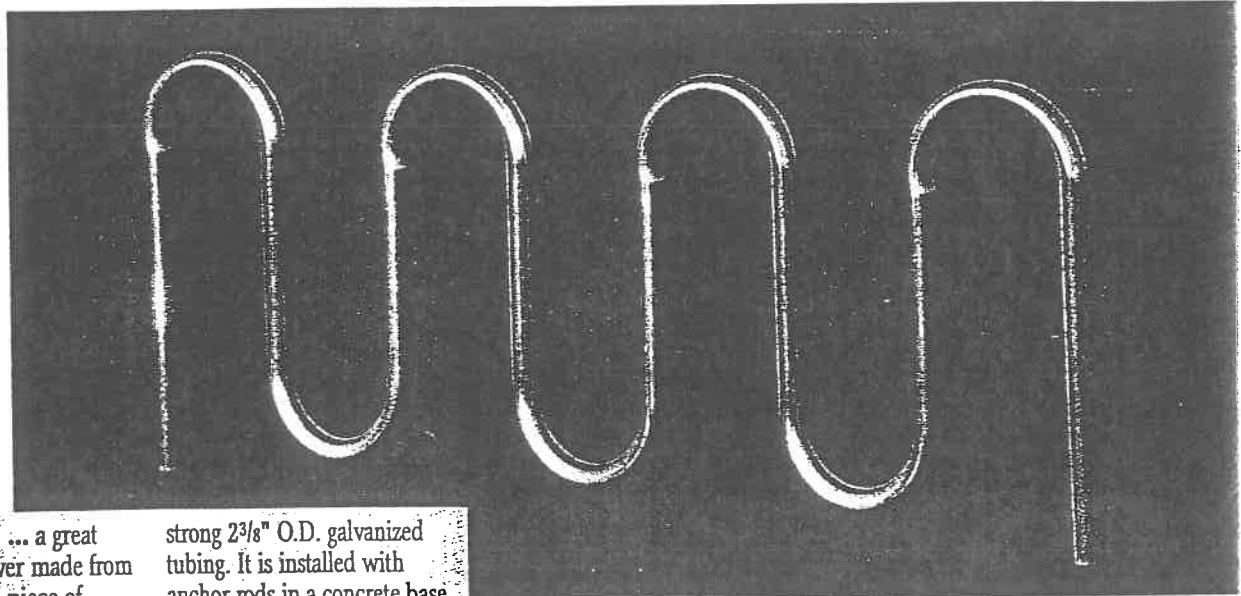
BR-8

**H**EAVY-DUTY ... contemporary looks, portable design and a choice of double-face or single-face styling.

These 3 ft. high units are built completely of galvanized

steel tubing with frames that are 1 5/8" O.D. and spokes that are 1 1/16" O.D. A bolt-through design makes the racks easy to assemble. All pipe ends are capped.

BR-4



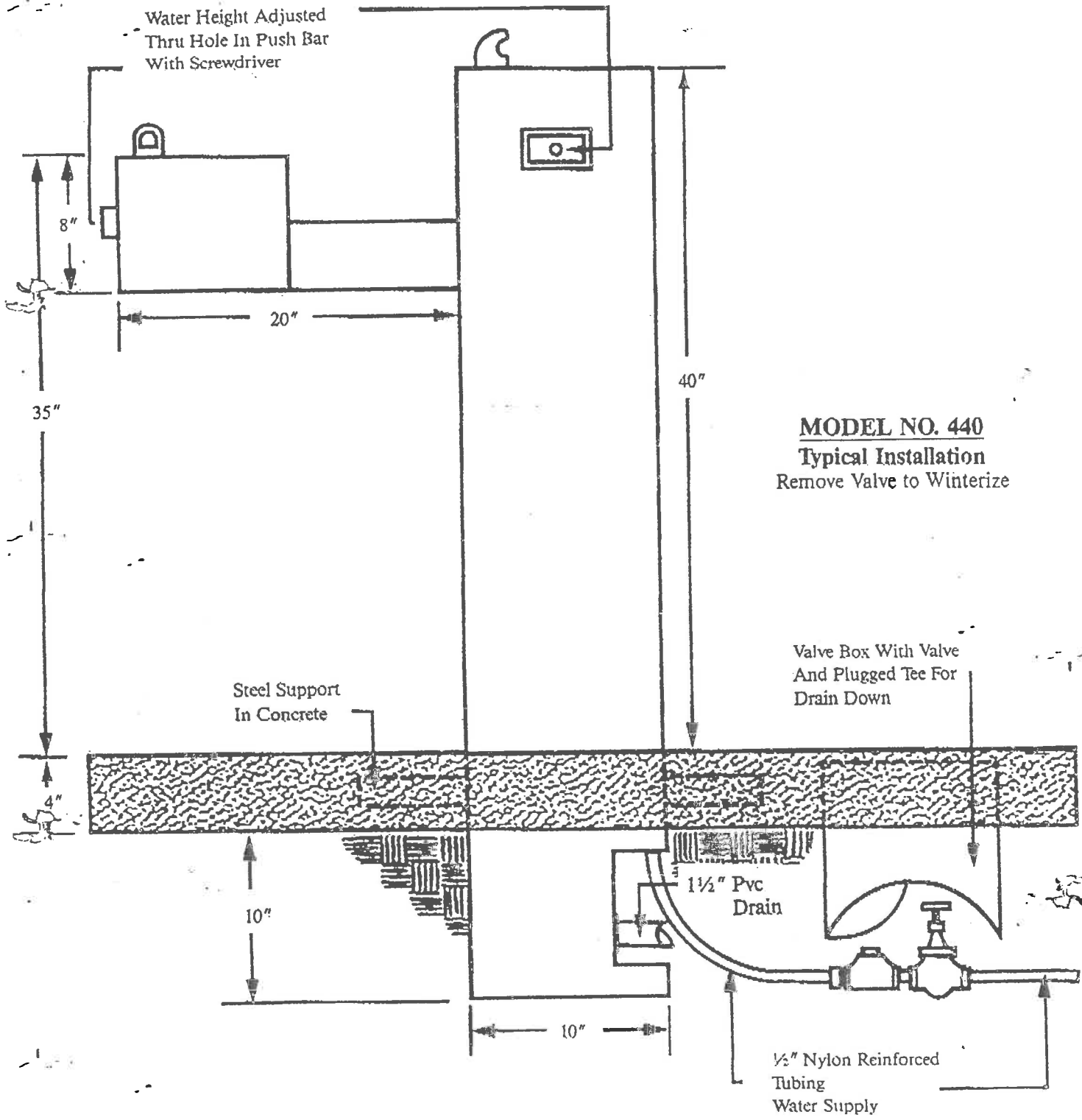
**M**ODERN ... a great space-saver made from a shaped piece of

strong 2 3/8" O.D. galvanized tubing. It is installed with anchor rods in a concrete base.

	Model Number	Description	Ground Space	Shipping Weight	Price
EXTRA-HEAVY-DUTY DOUBLE-FACE	BR-6	10' stationary	10'2" x 15'	138 lbs.	\$307.00
	BR-6A	Additional 10' section	10'2" x 15'	120 lbs.	264.00
	BR-6P	10' portable	10'2" x 15'	136 lbs.	326.00
	BR-6AP	Additional 10' section	10'2" x 15'	119 lbs.	283.00
	BR-6-5	5' stationary	5'1" x 15'	90 lbs.	233.00
	BR-6-5P	5' portable	5'1" x 15'	87 lbs.	251.00
	BR-6-15	15' stationary	15'3" x 15'	207 lbs.	466.00
	BR-6-15P	15' portable	15'3" x 15'	204 lbs.	494.00
	EXTRA-HEAVY-DUTY SINGLE-FACE	BR-6-S	10' stationary	10'2" x 11'	113 lbs.
BR-6-AS		Additional 10' section	10'2" x 11'	96 lbs.	258.00
BR-6-SP		10' portable	10'2" x 11'	111 lbs.	318.00
BR-6-ASP		Additional 10' section	10'2" x 11'	96 lbs.	277.00
BR-6-5S		5' stationary	5'1" x 11'	61 lbs.	227.00
BR-6-5SP		5' portable	5'1" x 11'	62 lbs.	246.00
BR-6-15S		15' stationary	15'3" x 11'	170 lbs.	456.00
BR-6-15SP		15' portable	15'3" x 11'	167 lbs.	483.00
HEAVY-DUTY		BR-8	10' double-face	10'2" x 15'	138 lbs.
	BR-8-5	5' double-face	5'1" x 15'	84 lbs.	216.00
	BR-8-S	10' single-face	10'2" x 11'	126 lbs.	279.00
	BR-8-5S	5' single-face	5'1" x 11'	72 lbs.	205.00
	MODERN	BR-44	7'4" stationary	8' x 15'	65 lbs.
BR-43		5'4" stationary	6' x 15'	50 lbs.	230.00
BR-42		3'3" stationary	4' x 15'	40 lbs.	208.00

**M.D.F.**  
 MOST DEPENDABLE  
 FOUNTAINS

(Meets ADA Regulations)



**MODEL NO. 440**  
**Typical Installation**  
 Remove Valve to Winterize

MOST  
DEPENDABLE...  
FOUNTAINS  
DESIGNED...

With  
EVERYONE  
In Mind



MODEL 493  
Triple Header  
Standard  
Handicapped  
Little Folks

# let's products model options!



**MODEL 410**  
Surface  
Mount  
with access  
door & hose  
connection



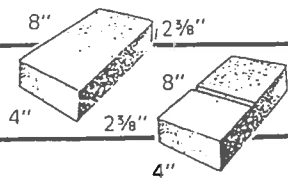
filler

MDF models  
with the cantilever  
arm design meet  
ADA specifications for  
handicapped service  
(exception -  
Little Folks)

100  
ard



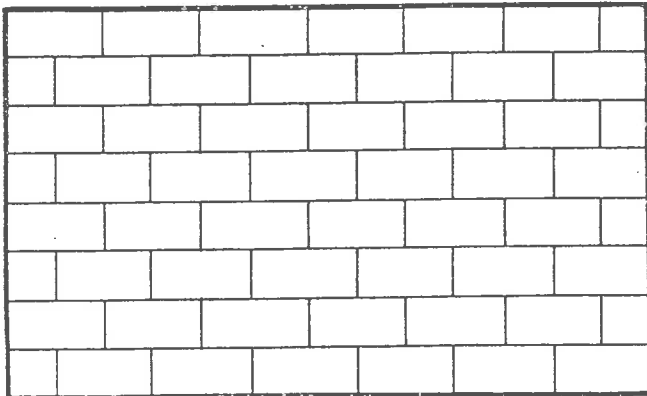




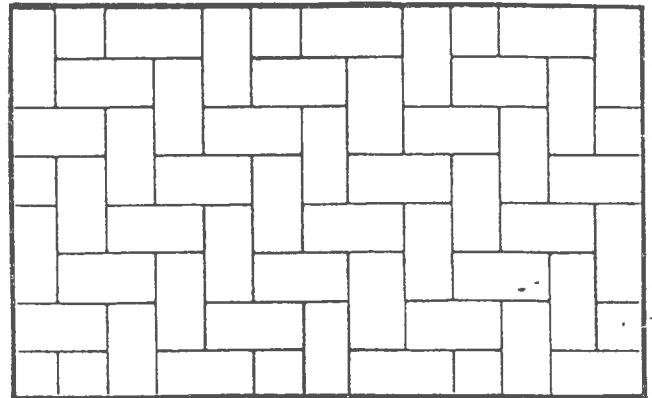
# EP HENRY PAVING STONES

## Typical Patterns for **BRICK STONE**<sup>TM</sup>

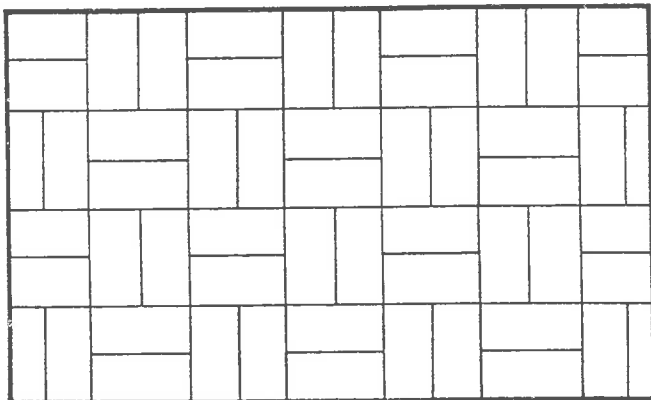
With their variety of colors, shapes and patterns, your imagination is the limit when you design with E.P. Henry Paving Stones.



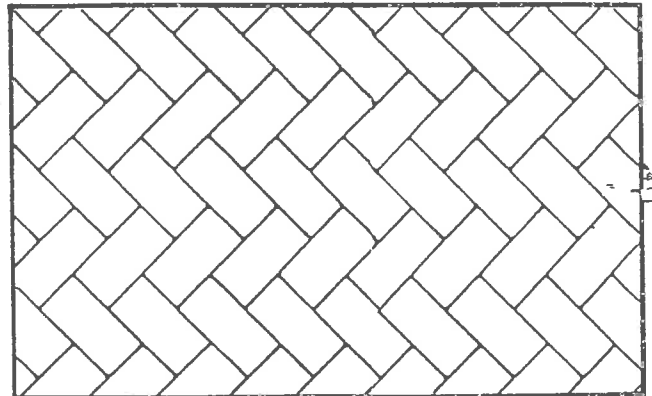
**Runner Pattern**



**90° Herringbone Pattern**

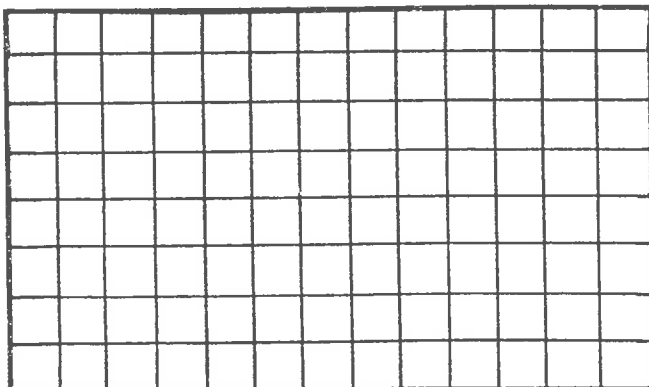


**Basketweave Pattern**

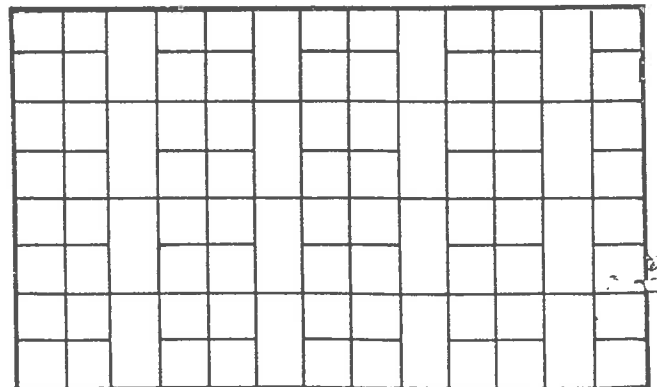


**45° Herringbone Pattern**

## Typical Patterns for **HALF BRICK STONE**<sup>TM</sup>



**Runner Pattern**



**Basketweave Pattern**  
(Half Brick Stone w/Brick Stone)

look at these four choices under "Fence Alternatives." Each fence alternative lists additional considerations to further guide his decision.

## FENCE ALTERNATIVES

Fence alternatives are provided for the three categories of fences: solid, semi-transparent, and transparent. In addition to detailed drawings of each fence, the following factors will be used to indicate the most appropriate situation for each fence:

**Topography.** Whether the fence should be used on horizontal (flat), undulating (hilly), or vertical (steep) land.

**Location.** Whether the fence should be located near the house, at an intermediate distance between the house and property line, or if absolutely necessary, near the property line depending, in part, upon the lot size.

**Architectural Style.** Whether the fence is compatible with contemporary or traditional architecture, or whether it is neutral (i.e. compatible with any style of architecture).

**Use.** Whether the fence best serves to define an entrance, to create an outdoor room, or to provide protection.

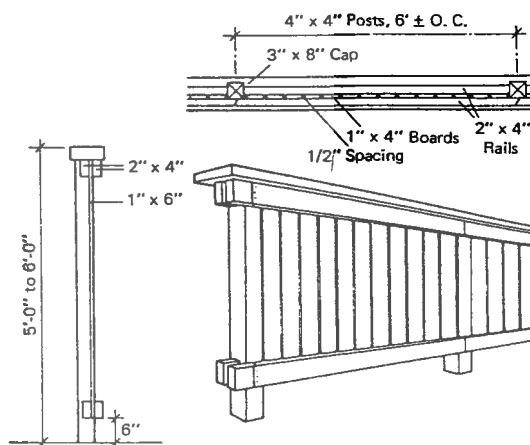
**Height.** Most appropriate height or heights ranging from 3'-6" to 6'-0".

**Additional Consideration.** Special comments related to proper use and appearance of the specific fence.

### Solid Fences

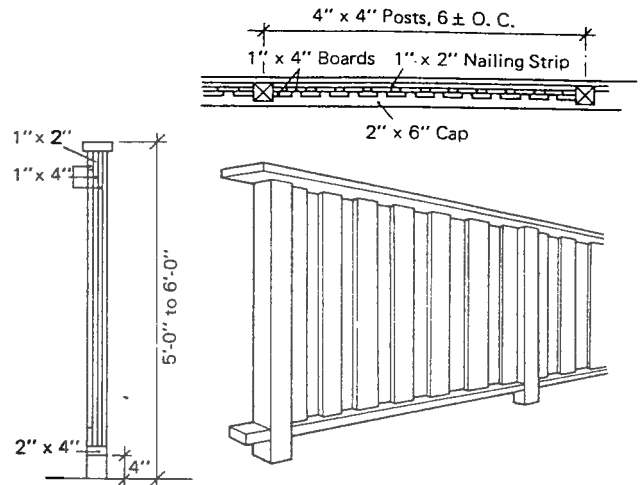
#### Board

Topography: Horizontal  
 Lot Size: Large, medium, small  
 Location: House  
 Architectural Style: Contemporary  
 Use: Entrance, outdoor room  
 Height: 5'-0" to 6'-0"



### Staggered Board

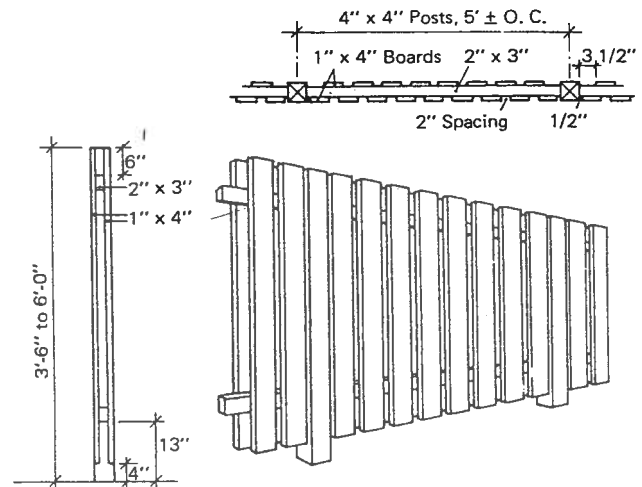
Topography: Horizontal  
 Lot Size: Large, medium, small  
 Location: House  
 Architectural Style: Neutral  
 Use: Entrance, outdoor room, protection  
 Height: 5'-0" to 6'-0"



Additional Considerations: Quality wood, workmanship, and maintenance are essential. Color, texture, and materials should match or complement architecture.

### Wood 1" x 4" Screen

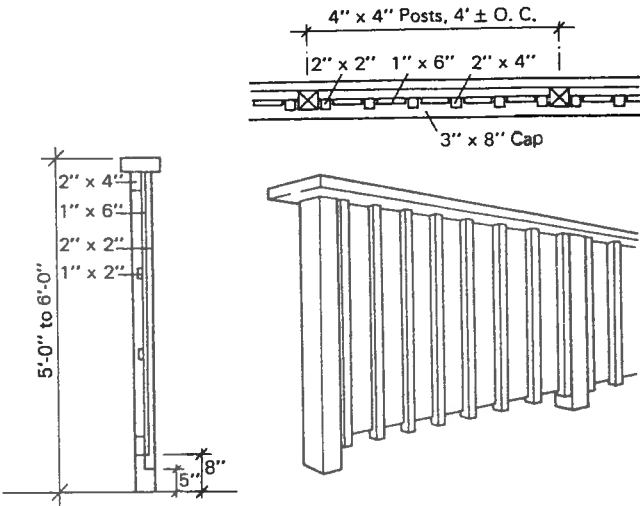
Topography: Horizontal  
 Lot Size: Large, medium, small  
 Location: House  
 Architectural Style: Neutral  
 Use: Entrance, outdoor room, protection  
 Height: 3'-6" to 6'-0"



Additional Considerations: Quality wood, workmanship, and maintenance are essential. Lumber should be free of knots and blemishes in order to provide uniform appearance.

### Board and Batten

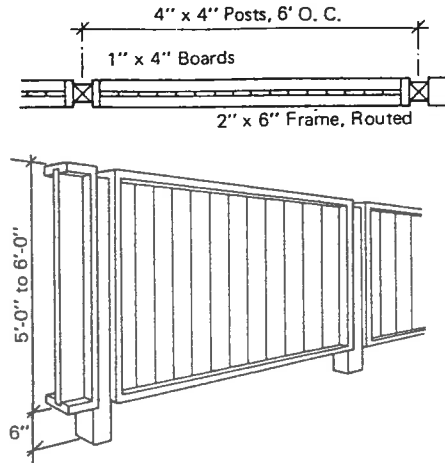
Topography: Horizontal  
 Lot Size: Large, medium, small  
 Location: House  
 Architectural Style: Contemporary  
 Use: Entrance, outdoor room, protection  
 Height: 5'-0" to 6'-0"



Additional Considerations: Color, texture, and materials should match or complement architecture.

### Panel

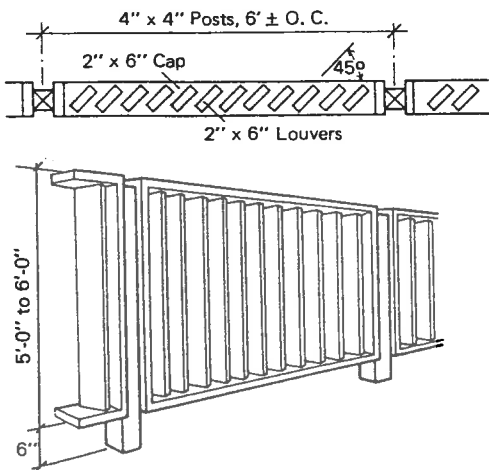
Topography: Horizontal, undulating  
 Lot Size: Large, medium, small  
 Location: House  
 Architectural Style: Contemporary  
 Use: Entrance, outdoor room  
 Height: 5'-0" to 6'-0"



Additional Considerations: Color, texture, and materials should match or complement architecture.

### Louvered Panel

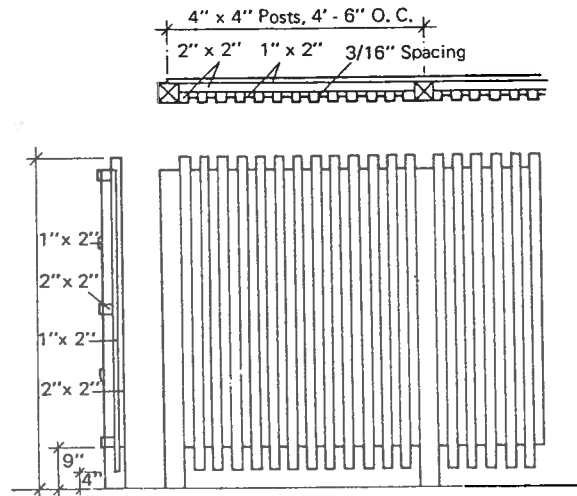
Topography: Horizontal, undulating  
 Lot Size: Large, medium, small  
 Location: House  
 Architectural Style: Neutral  
 Use: Entrance, outdoor room  
 Height: 5'-0" to 6'-0"



Additional Considerations: Color should be light or neutral to avoid a bulky, heavy appearance.

### Solid Picket

Topography: Horizontal  
 Lot Size: Large, medium, small  
 Location: House  
 Architectural Style: Contemporary  
 Use: Entrance, outdoor room, protection  
 Height: 3'-6" to 6'-0"

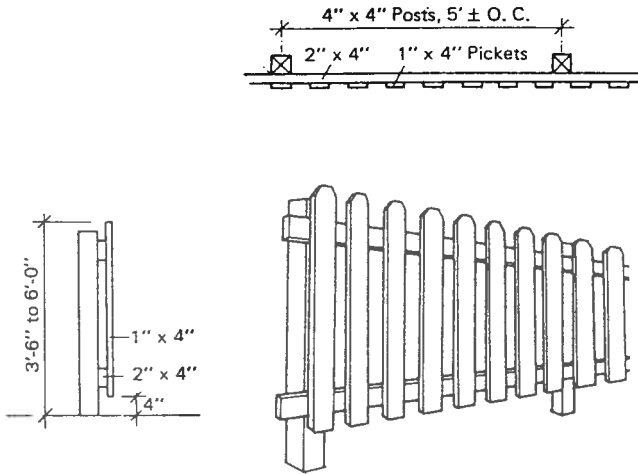


Additional Considerations: Quality wood, workmanship, and maintenance are essential.

## Semi-Transparent Fences

### Picket

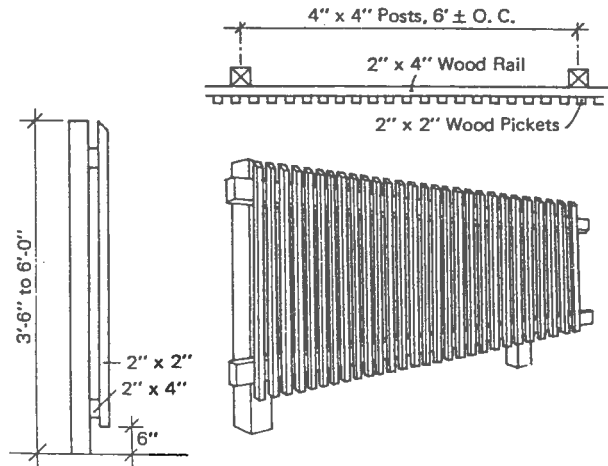
Topography: Horizontal, undulating  
 Lot Size: Large, medium, small  
 Location: House, intermediate  
 Architectural Style: Traditional  
 Use: Protection  
 Height: 3'-6"



Additional Considerations: If fence is adjacent to house, color should match architecture. If fence is separate from house, a natural finish should be used. To blend this fence into the landscape, it should not be painted white or stained a harsh color such as redwood.

### Contemporary Picket

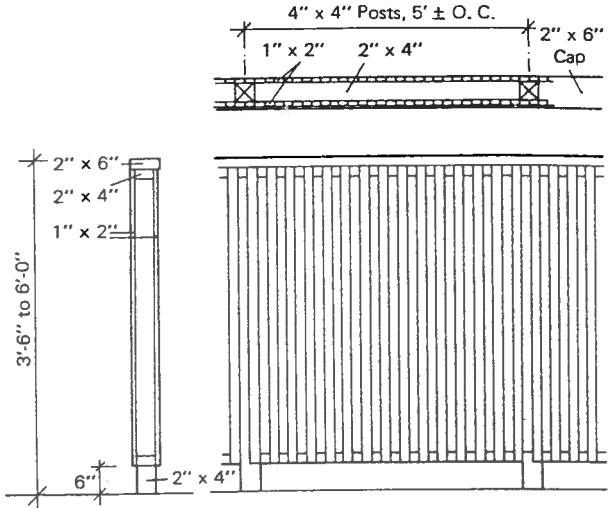
Topography: Horizontal, undulating  
 Lot Size: Large, medium, small  
 Location: House, intermediate  
 Architectural Style: Neutral  
 Use: Entrance, outdoor room, protection  
 Height: 3'-6" to 6'-0"



Additional Considerations: If fence is adjacent to house, color should match architecture. If fence is separate from house, a natural finish should be used.

## Wood 1" x 2" Screen

Topography: Horizontal  
 Lot Size: Large, medium, small  
 Location: House, intermediate  
 Architectural Style: Contemporary  
 Use: Entrance, outdoor room, protection  
 Height: 3'-6" to 6'-0"

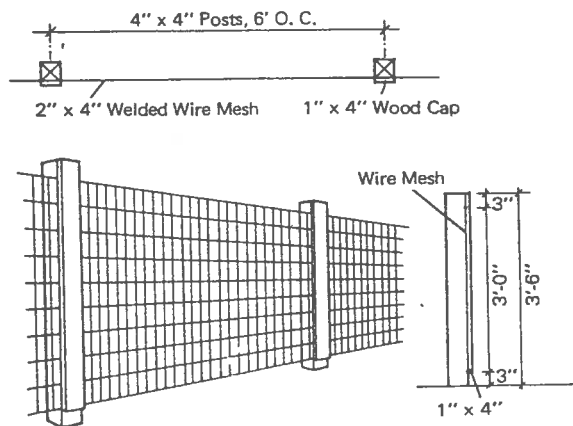


Additional Considerations: Quality wood, workmanship, and maintenance are essential.

## Transparent Fences

### Wire Mesh

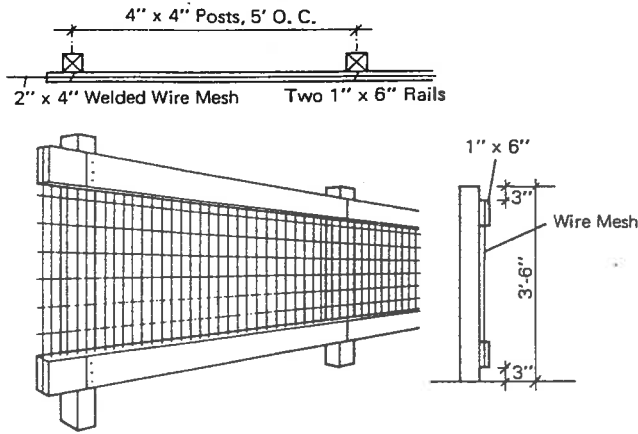
Topography: Horizontal, undulating, vertical  
 Lot Size: Large, medium, small  
 Location: Intermediate (on small lots only),  
 near property line  
 Architectural Style: Neutral  
 Use: Protection  
 Height: 3'-6"



Additional Considerations: Wire should be painted flat black; posts should be finished with a natural or dark stain. See plant list.

### Rail with Wire Mesh

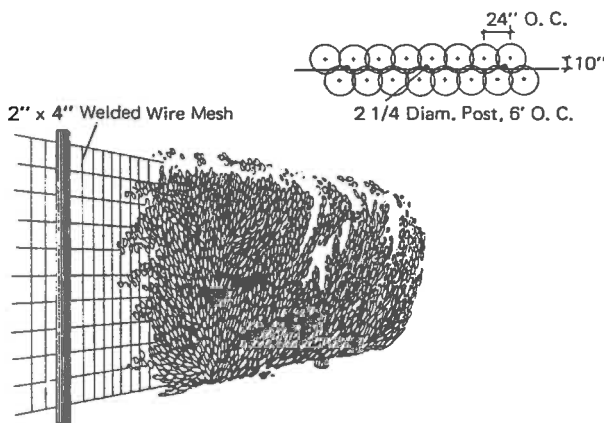
Topography: Horizontal  
 Lot Size: Large, medium  
 Location: Intermediate, near property line  
 Architectural Style: Neutral  
 Use: Protection  
 Height: 3'-6"



Additional Considerations: Wire should be painted flat black; wood should be finished with a natural stain. See plant list.

### Hedge Fence

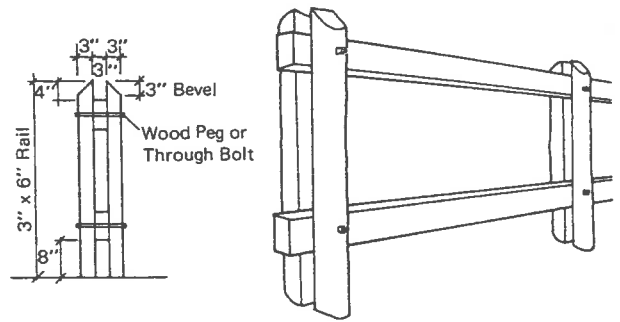
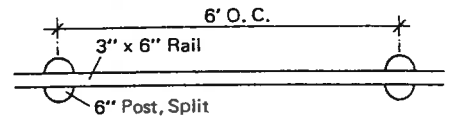
Topography: Horizontal, undulating, vertical  
 Lot Size: Large, medium  
 Location: Intermediate, near property line  
 Architectural Style: Neutral  
 Use: Protection  
 Height: 3'-6"



Additional Considerations: Wire and posts should be painted flat black. A minimum two and one-half foot height is required for shrubs at initial installation. A single plant species should be used in the hedge throughout the fencing scheme.

### Contemporary Rail

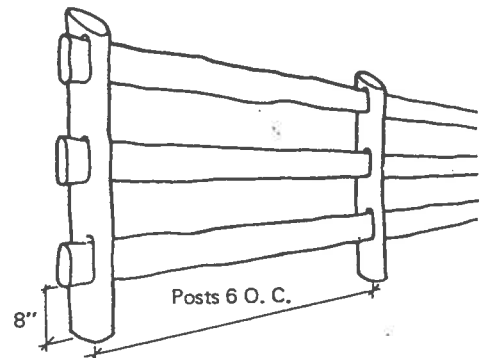
Topography: Horizontal  
 Lot Size: Large  
 Location: Intermediate, near property line  
 Architectural Style: Neutral  
 Use: Protection  
 Height: 3'-6"



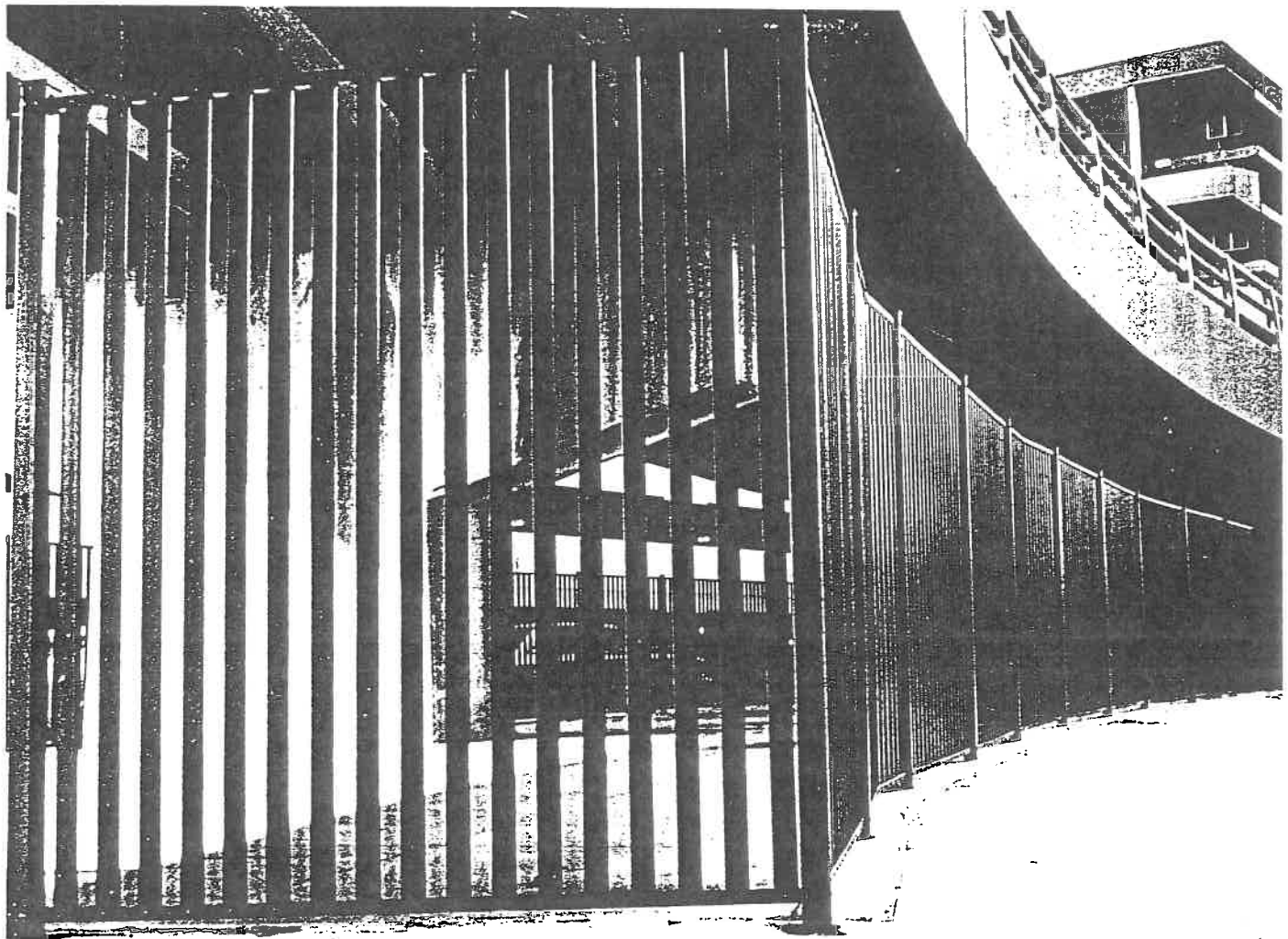
Additional Considerations: Natural finish or dark stain should be used.

### Split Rail

Topography: Horizontal, undulating  
 Lot Size: Large (most appropriate on lots of one-half acre or more)  
 Location: Intermediate, near property line  
 Architectural Style: Traditional  
 Use: Protection  
 Height: 3'-6"



Additional Considerations: Natural finish or dark stain should be used.



**Provides 50% coverage**

**Breaks up headlight glares in parking areas.**

Specified by New York City Housing Authority, Park Dept. City of New York, U.S. Engineers and Housing Redevelopment projects.

FENCE AVAILABLE UP TO 8'-0" HIGH  
POST SPACING 6'-0" O.C.

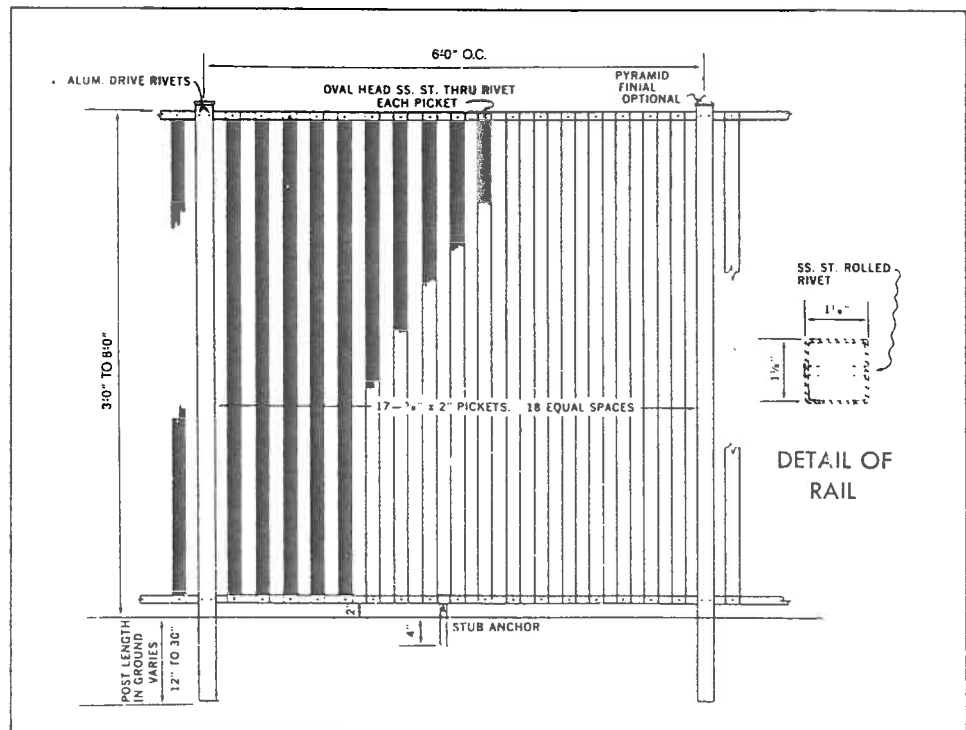
MATERIALS:

GALVANIZED POSTS—2½" Sq. Tubing  
14 GA.

GALVANIZED RAILS—1⅞" Sq. Tubing  
16 GA.

GALVANIZED PICKETS—5/8" X 2"  
Tubing 16 GA.

FINISH—see specifications on page 8  
GATES, CUSTOM BUILT, see pages 5,  
6.





The distinctive new idea in fencing provides long-term beauty and protection at a practical price, doesn't create an industrial appearance.

Westmoreland picket and rail fences are of tough, galvanized tubular steel that will stand up to the punishing whims of weather, polyester-coated for virtually no maintenance. Available in 36, 42, 48, 60, 72, 84 and 96 inch heights.

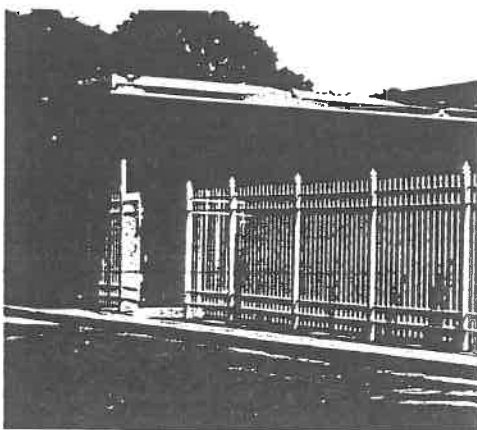
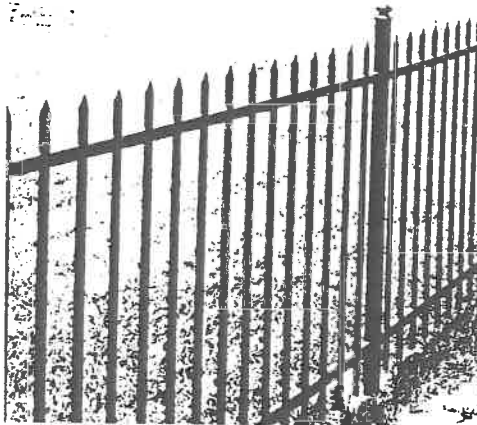
The entire fence is factory finished with Thermosetting Polyester Coatings for utmost protection and minimum maintenance. They have excellent resistance to abrasion and scuffing. They will not chip, flake or peel. Testing Laboratories proved that this fencing can "take it". After Weatherometer testing equal to more than ten years of grueling tropical exposure, they reported no visible surface breakdown of the all-weather polyester coating. Fencing in three Standard colors: black, white and bronze.

Architectural colors are available on large orders.

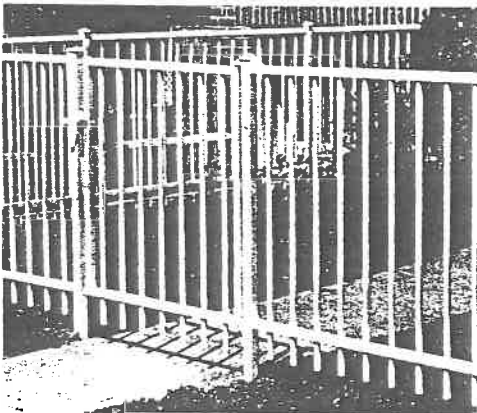
Powder coating is the best system yet devised for a durable attractive finish.

### Features

- Fencing in three standard colors: black, white and bronze.
- Assembled with stainless steel rivets or internal retainer rods.
- No welding or brazing in the field. Components preassembled in six foot sections.
- Modular sections designed for post holes on even six-foot centers.
- Posts pre-drilled to accept rails.
- Floor flanges and flanges for special conditions.
- Three types of posts: line, corner and end.
- Gates pre-assembled and shipped with hardware and posts.
- Posts terminate in polyester coated caps with drive fit.
- Special designs and colors available.
- Traditional picket fencing accepts a 5 degree change in ground level. Modern rail fencing accepts a 6 degree change in ground level.
- Durable White Fence which up to now has not been possible in wrought iron.
- Easily installed by local distributor, your contractor or your own maintenance crew.
- Field work reduced to a minimum.
- Powder coatings produce a tougher more resistant finish that stands up longer in service than liquid coatings.



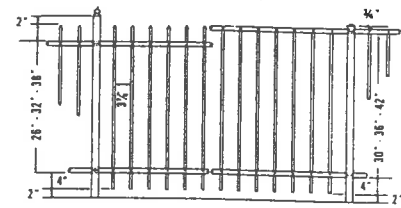
TRADITIONAL PICKET HEIGHT/MUNICIPAL & INDUSTRIAL: Specified by leading architects and furnished for municipal and industrial projects throughout the United States. Picket shown. Rail style available.



MODERN RAIL/RESIDENTIAL INSTALLATIONS: Makes every home a show-place. Eliminates the drab, industrial look of ordinary fencing.

Heights—36"—42"—48"

### Traditional Picket

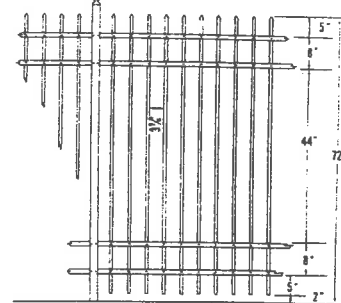


POST LENGTH IN GROUND: 24"—Spacing 60" o.c.

MATERIALS AND FINISH: Refer to Specifications—page 8

1 1/2" Sq. Rails  
1 1/2" Sq. Pickets  
1 1/2" Sq. Posts for Line, Corners, Ends  
1 1/2" Sq. Posts for Gate Frames to 48"  
2" Sq. Posts for Gate Frames 49" to 72"  
Standard Sections 60" o.c.

### 6 ft. High Traditional Picket



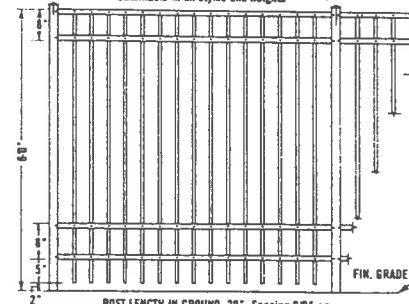
POST LENGTH IN GROUND: 30"—Spacing 60" o.c.

MATERIALS AND FINISH: Refer to Specifications—page 8

1 1/2" Sq. Rails  
1 1/2" Sq. Pickets  
2" Sq. Posts for Line, Corners, Ends  
2" Sq. Posts for Gate Frames to 48"  
2 1/2" Sq. Posts for Gate Frames 49" to 72"  
Standard Sections 60" o.c.

### 6 ft. High Modern Rail

Staggered Picket Fences  
Obtainable in all styles and heights



POST LENGTH IN GROUND: 30"—Spacing 60" o.c.

MATERIALS AND FINISH: Refer to Specifications—page 8

1 1/2" Sq. Rails  
1 1/2" Sq. Pickets  
2" Sq. Posts for Line, Corners, Ends  
2" Sq. Posts for Gate Frames to 48"  
2 1/2" Sq. Posts for Gate Frames 49" to 72"  
Standard Sections 60" o.c.

## STANDARD GATES TO MATCH ALL STYLES

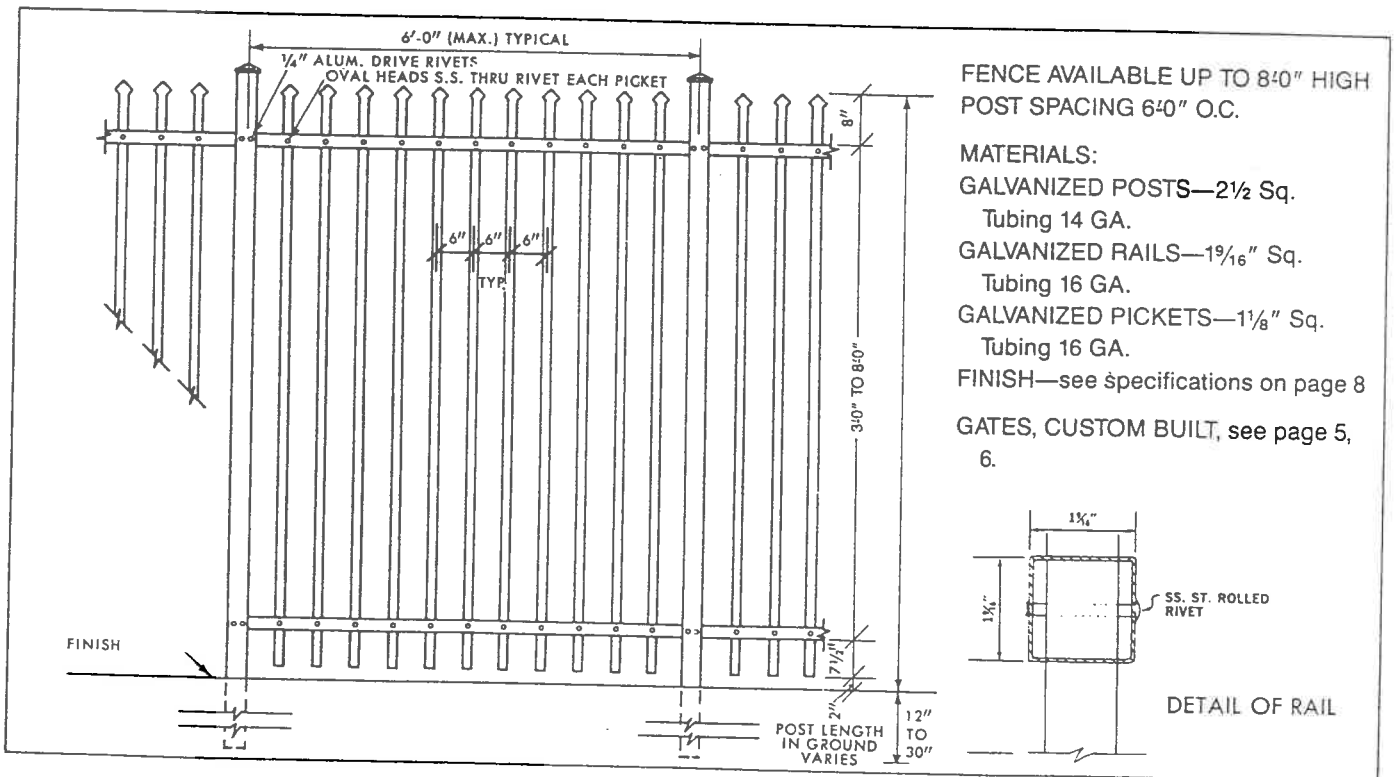
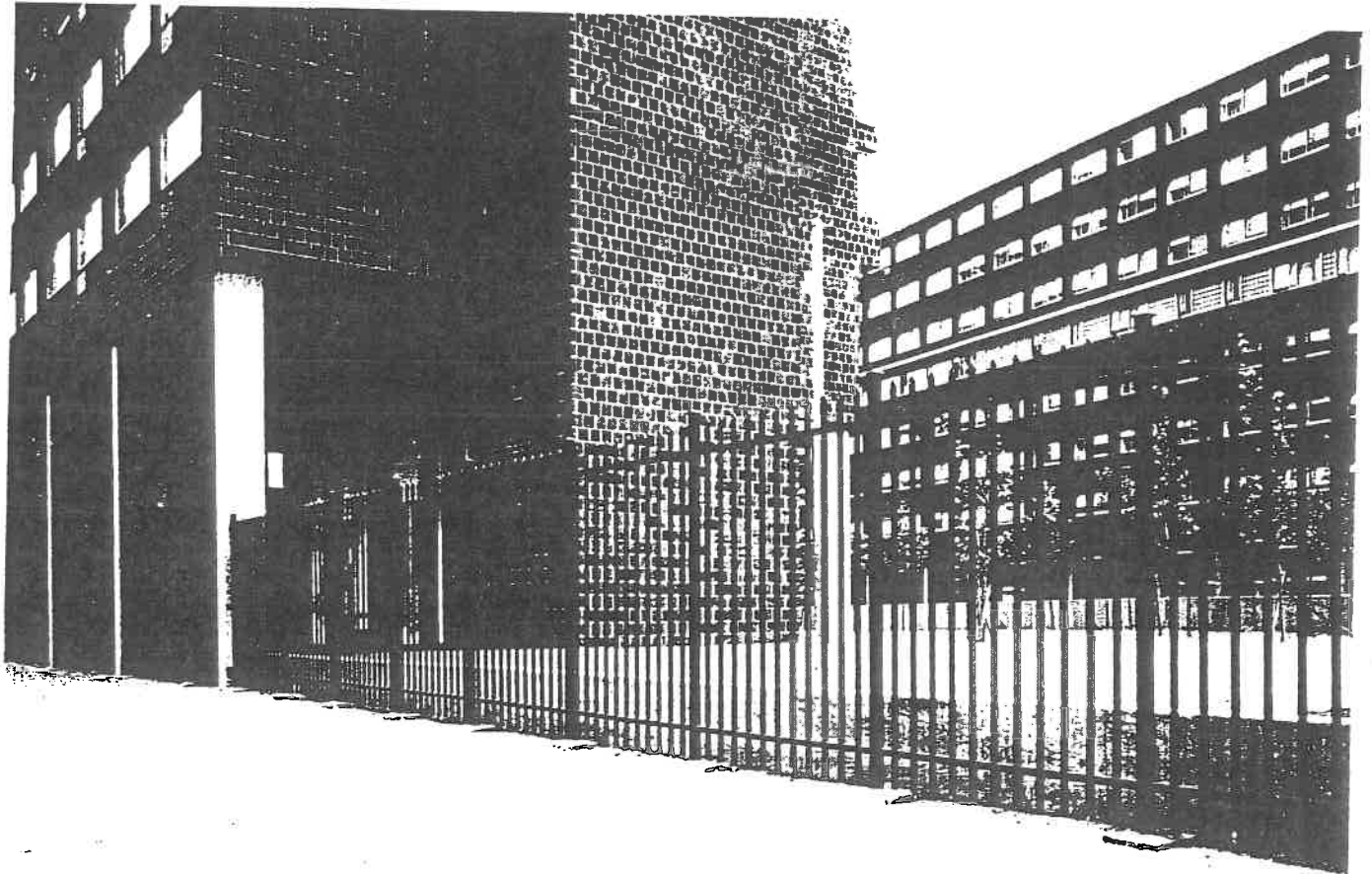
HEIGHTS: 3 to 7 ft.

WIDTHS: Single gates 3 to 4 ft.  
Double gates 9 to 12 ft.

### CUSTOM GATES

Gate post sizes are determined in accordance with design, height and width of gate.

Cantilever Gates are custom built as required.  
Cylinder Lock Gates obtainable in Barrier and Semi-Privacy designs.  
Removable Rolling Fence Panels mounted on pneumatic tires are available. (Airport Type Gates)  
Removable Panels in line of fence are available.  
Window Guard designs are available.







**Edison  
Village  
Area  
Study**

**George Lowenstein**

**34-970-615**

**Directed Study in Urban Planning**

**Professor Tony Neessen**

**Rutgers University**

**and**

**Doylestown Township Board of Supervisors**

**John Carson, Chairman**



**Edison  
Village  
Area  
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---

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**John Carson, Chairman**

# Edison Village Area Study

## Agenda

- Background & Purpose
- Physical Profile of the Area
- Zoning Issues
- Viable Zoning Changes
- Recommendations

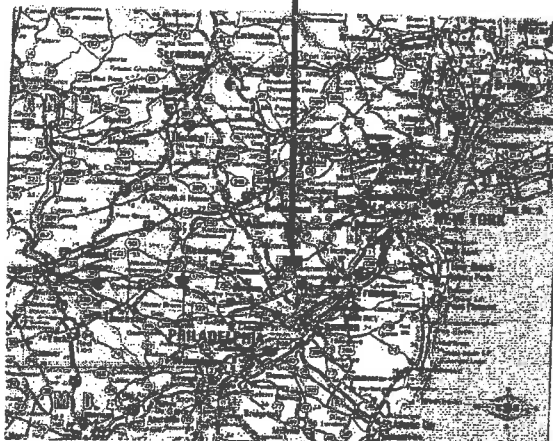
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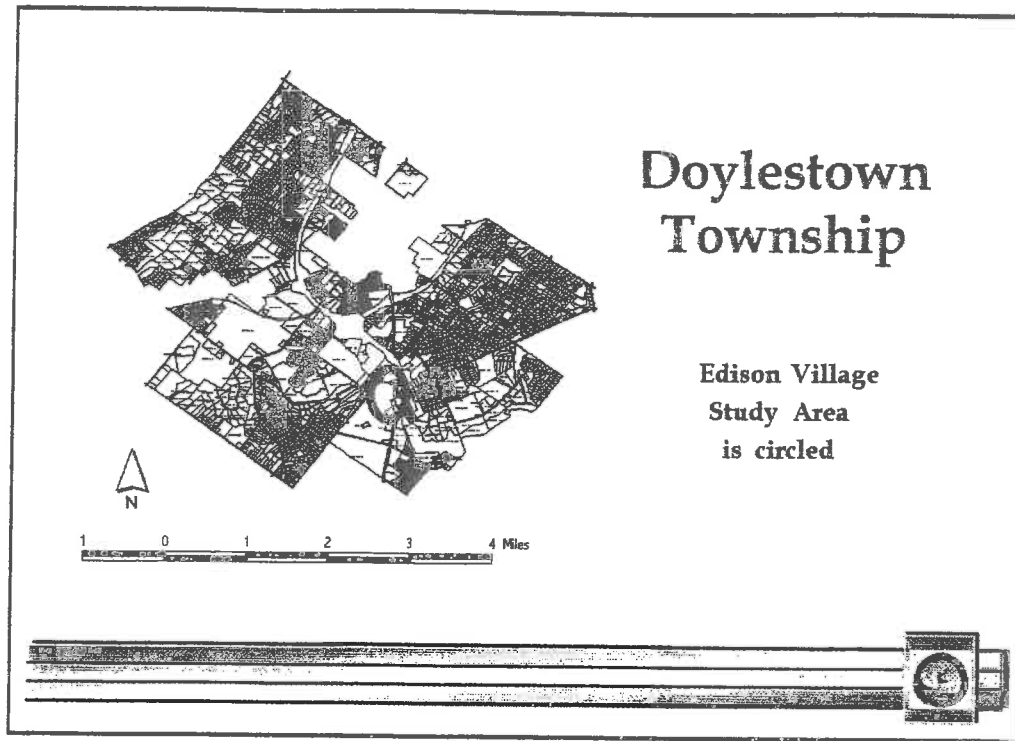
### Listing of the slides and accompanying text

1. Cover Slide (Doylestown Township Seal)
2. Table of Contents
3. Regional Map
4. Doylestown Township Parcel Map
5. Purpose of the Study
6. A Small Village or Neighborhood
7. Route 611 and the surrounding communities (Map)
8. Route 611 Corridor Photos
9. The Northern Route 611 Approach (Map and Street profiles)
10. Edison Village Photos
11. Natural Features Map
12. Zoning Map
13. Land Use Map
14. Figure Ground Plan
15. Susceptibility to Change Map
16. Portrait of the Study Area
17. Zoning Issues
18. Route 611 Amenities
19. Pedestrian Realm
20. Benefits of On-Street Parking
21. Simplified Signage
22. Building & Use Regulations
23. Other Highway Commercial Streetscapes
24. 1776 Shopping Strip as a Mixed Use Building
25. Conclusions
26. Zoning Change Recommendations
27. Proposed Zoning Map
28. Further Study Recommendations
29. Plan of Action

## Doylestown, PA



Doylestown Township is located in the southeast corner of Pennsylvania in the central portion of Bucks County. The township which surrounds the county seat, Doylestown Borough on three sides, straddles several gentle ridges that characterize most of the county. The borough provides a central place where services are available with the township providing low-intensity residential areas. Commercial and retail areas within the township are usual adjacent to or on arteries coming from the Borough. The township has grown significantly over the past three decades and is experiencing the beginnings of redevelopment and infill development.



The township has grown significantly over the past three decades. The quiet rural community of the early 1960s rapidly developed into a suburban bedroom community by the mid-1970s. Between 1960 and 1990 the population tripled, climbing from 3,795 to 14,510 with a median household income of \$52,212. The present population of the township is 16,747 according to a special census conducted in June 1997. This census also accounted for 6,049 households which if equated to units per acre would approximate a gross density of 0.6 units per acre. The township has very little undeveloped land and has experienced the beginnings of redevelopment and infill development. The Bucks County Planning Commission has projected another 10,000 increase in population in the next twenty years.

The Edison Village Study Area will provide an actual environment to demonstration on paper the practicality of the study conclusions and recommendations.

## Purpose of the Study

- Investigate what changes might be required to the zoning and land development ordinances to effectively regulate infill and redevelopment
- Identify unnecessary redevelopment obstacles and constraints

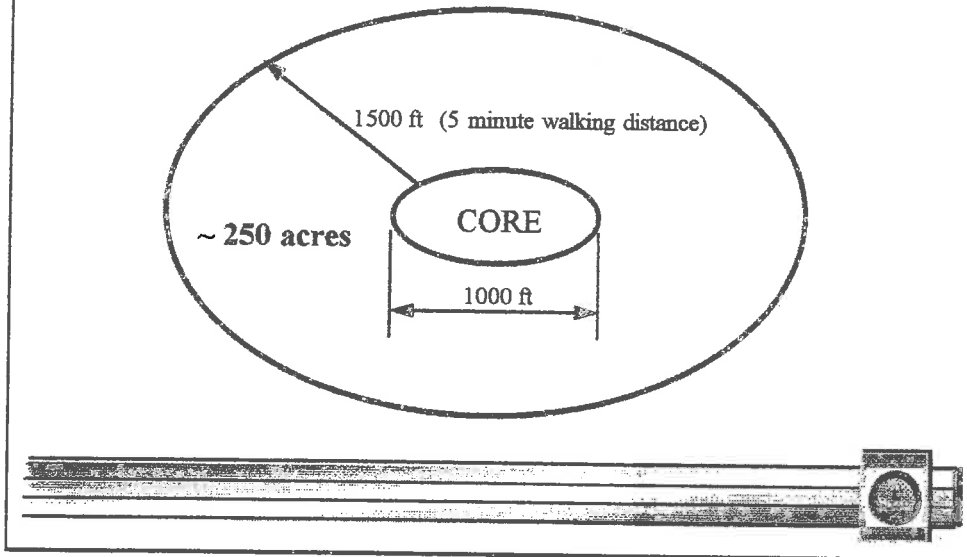
There are very few undeveloped parcels left in the township. The township has already experienced the beginnings of redevelopment and infill development. The regulatory needs to manage initial farm and wood land development differ from those involved with infill and redevelopment. The Township wanted to ensure that the zoning and land development and subdivision ordinances were adequate to effectively regulate infill and redevelopment.

One of the concerns raised was the revitalization of existing commercial areas that had started to age. It is more difficult to redevelop due the many physical obstacles as existing structures and lot configuration that conformed to long superseded zoning ordinances. Accordingly, a second objective was to eliminate unnecessary redevelopment obstacles and constraints to make redevelopment more enticing.

Another issues was sustainable development. The Township has continuously advance good environmental and resident oriented development standards. With the advances of technology and the awareness of the cost of sprawl developing, a third objective was the incorporation of environmental friendly and traditional development concepts.

Finally, The study was to be an adjunct to the ongoing strategic planning process.

## A Small Village or Neighborhood



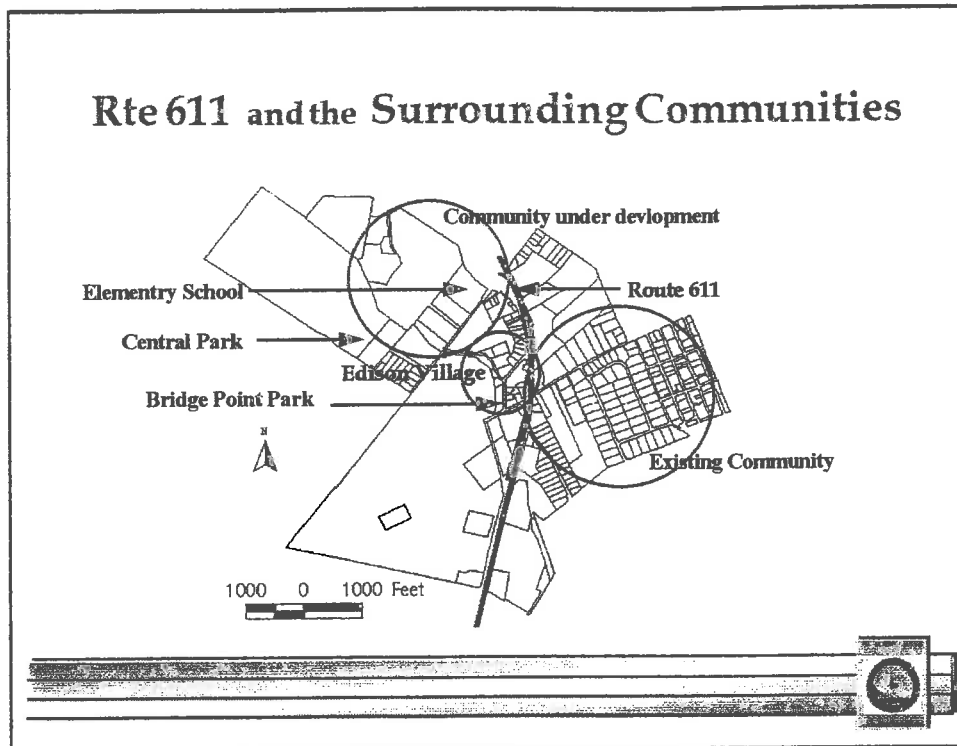
Before we start, one very important term, that of neighborhood, must be defined. It will be used in the context of community boundaries and interaction. A neighborhood or a small village, is a geographic area where the residents have a sense of community and maintain interactions. There is always some a focal point where the residents can meet, talk or otherwise socialize. This is somewhere close to the center of the neighborhood or core and usually takes the form of a "public green" or park but can be any place that accommodates the activity.

The extent of the neighborhood is usually determined by walking distances. Most people in good health are willing to walk five minutes or about 1500 feet to a destination. Beyond that, the trip becomes a car ride. Walking distance has historically defined the size of neighborhoods and hamlets and villages. In other words, 1500 feet is the usually distance from the core of the village to its periphery. The area enclosed by a circle of radius 1500 feet is over 160 acres.

If there is commercial activity at the core, its length if we reflect existing lengths of shopping areas in small towns and shopping centers, would have a walking distance of about 1000 feet. Stretching the circle into an oval to account for the commercial activity in the core, we now enclose an area of over 230 acres. As was previously said, pedestrians will walk five minutes in a destination if there is a secure and pleasant walkway.

The neighborhood concept was used in reviewing the redevelopment and infill standards as well as the physical status of the Edison Village study area.

## Rte 611 and the Surrounding Communities



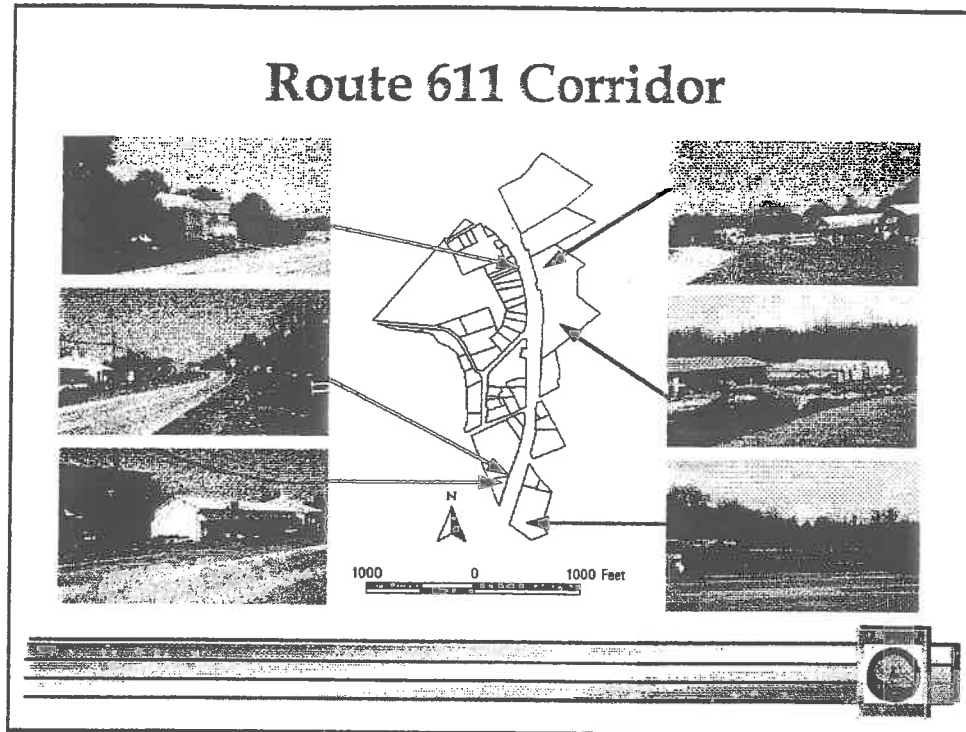
The study area centers around Route 611 (Easton Road) in the southern part of the township and includes the village of Edison. It is a 0.6 mile segment of Route 611 that extends from the Neshaminy Creek where it flows under highway, to its transition into a bypass around Doylestown Borough at Turk Road. Edison Village is located on the Neshaminy Creek west of Route 611. The village is very small at this time due to the significant loss of its land area when Route 611 was enlarged and realigned. The area is now dominated by Route 611.

The commercial activity along Route 611 supports the greater Doylestown area rather than the immediate village residents. The potential of attracting added commercial activity along this segment of Route 611 would be increased if the study area is looked upon as the commercial spine for the surrounding communities. The existing neighborhood to the east and the townhouse neighborhood under construction to the west are traditional neighborhoods as previously defined. They both can use retail services and local employment. An example of the retail potential is the southwest corner of Turk Road and Route 611. It would be an ideal area for convenience stores to support the townhouses, the elementary school and to a limited extent the area to the east on Turk Road. The study area can be an expansion of the village nucleus that exists at Edison.

Another positive potential of the corridor is the public transportation. The Septa Route 55 bus provides service north into Doylestown Borough and up to Cross Keys and south to Olney Terminal in Philadelphia. One drawback for the area is the lack of public sewers or public water in the study area.



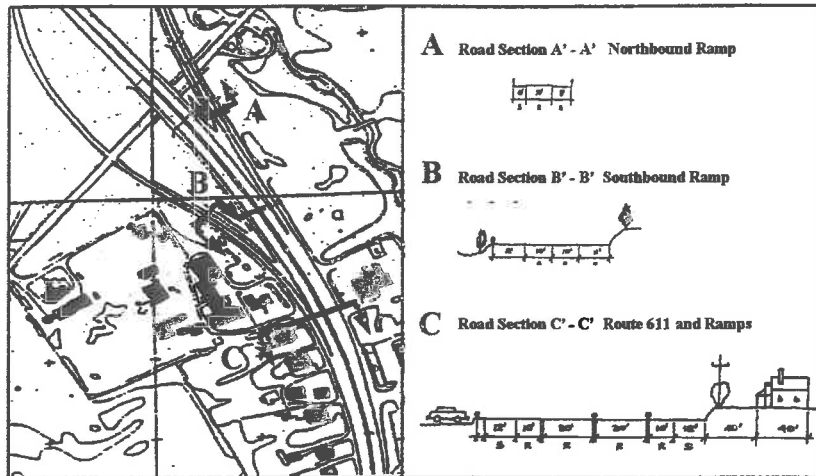
## Route 611 Corridor



Route 611 within the study area can be characterized as strip commercial. On the east side of the road is completely commercial except for on residence on the southeast corner of Edison-Furlong Road. On the west side of the road, about half the properties are distinctively commercial while the remainder are or were residences. They stand on numerous small and narrow properties in the northern half of that side of the street. The strip is a result of piecemeal conversion to commercial uses with little coordination. All of the commercial enterprises that do exist are highway oriented. Many are not the highest and best use of the land.

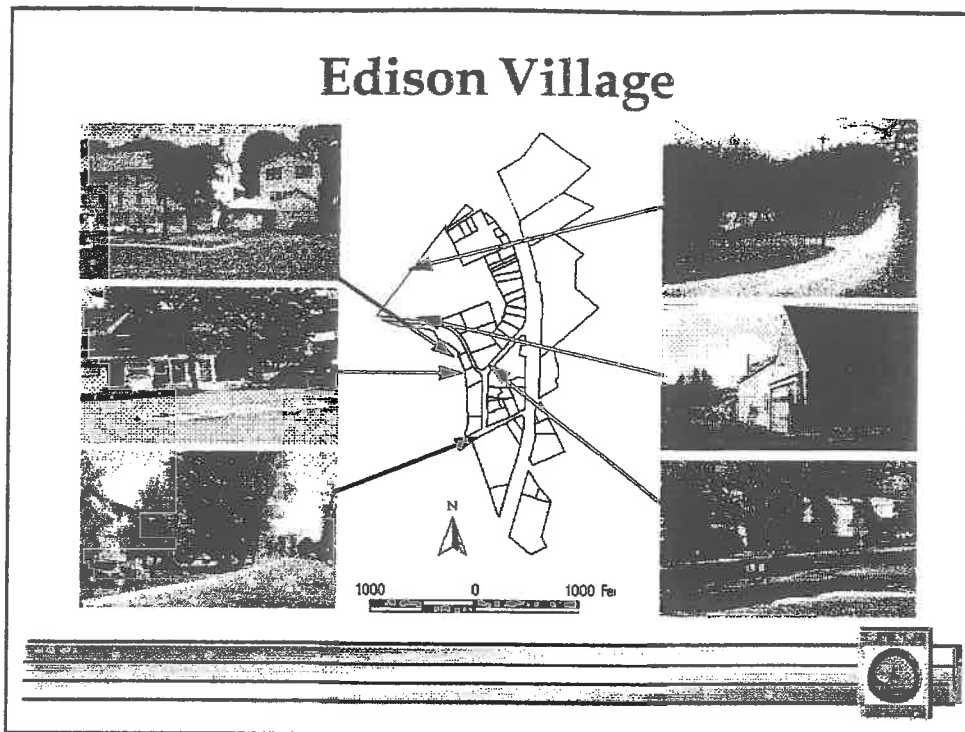
The above ground utilities and lack of landscaping further detracts from the corridor's appearance. Route 611 has no pedestrian improvements in this stretch of roadway as well.

## The Northern Route 611 Approach



The Route 611 roadway in the north segment effects the properties in an other way. The highway transitions into a by-pass and adds ramps that carry the traffic to and from Easton road above Turk Road (old Route 611 into the Borough). Road dividers and the need to concentrate on the merging traffic, severely limited visibility of and access to the adjacent parcels.

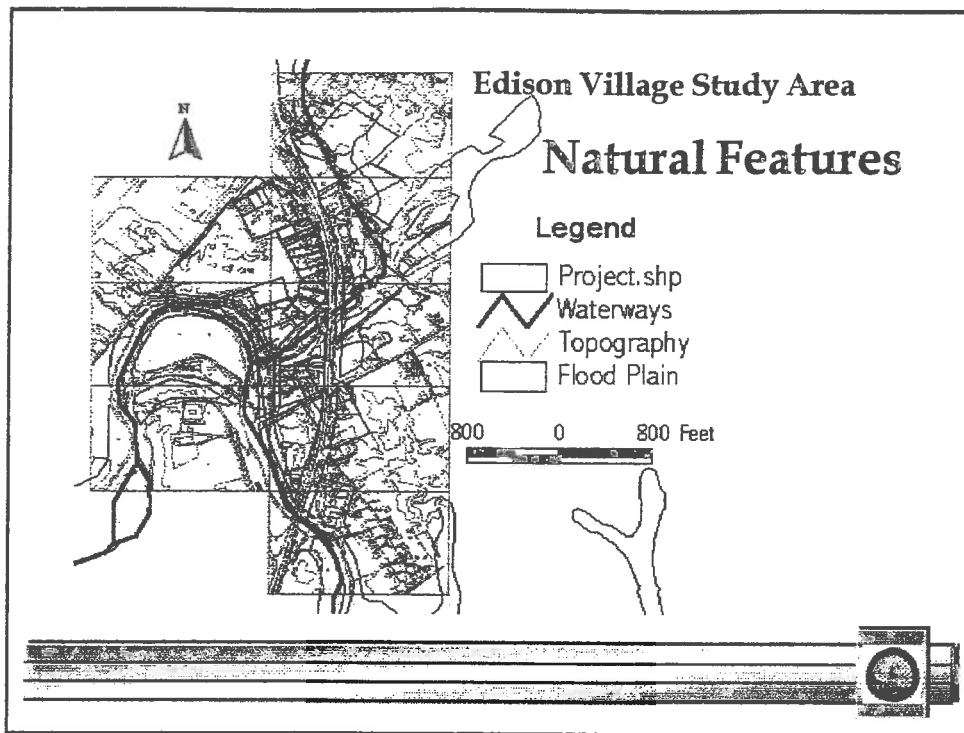
## Edison Village



Edison Village originally extended to the east as well as across the Neshaminy Creek. The village was permanently segmented when Route 611 was widened and realigned. Easton Road used to cross the Neshaminy at Edison over a stone bridge. The approaches of which still remain. Tracks can be seen in the road pavement which once carried trolleys from Doylestown to Philadelphia.

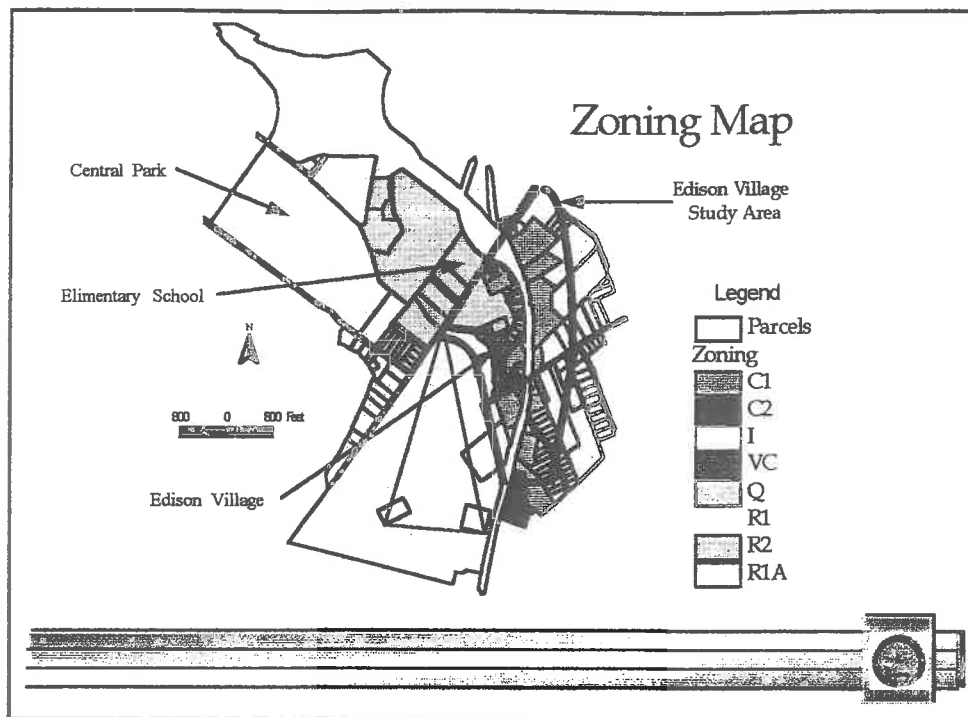
The village is the best example of the village form remaining within the township and has recently been designated a historic district. The surviving structures are located on Edison and Quarry Roads and are primarily residential with some commercial uses. The mixed uses coexist side by side with no real mixed use buildings remaining. Several barns have been converted into apartment houses.

The township's only stone quarry is located in the northern section of the village. Except for the quarry trucks, the village is a quiet oasis just adjacent to the heavily traveled Route 611. The land adjacent to the creek containing the stone structure that housed the first township offices has been refurbished and is now Bridge Point Park.



The dominant natural feature within the Edison Village Study Area is the Neshaminy Creek and its tributary. The tributary originates in Doylestown Borough and joins the main branch in Edison Village. It flows south and then west through many of the properties on both sides of Route 611. These waterways, and their floodplains and the steep slopes along their banks significantly affect the northern and central portions of the study area.

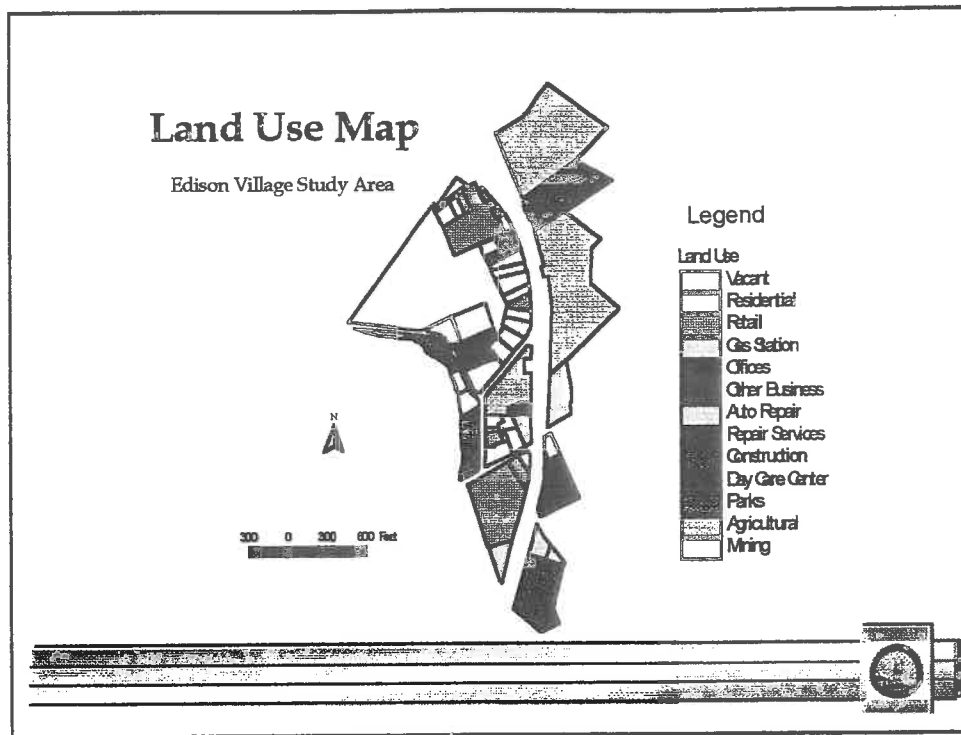
The tributary in particular, is a major constraint to the use of many of the properties in this upper section. Its east west passage is in a relatively deep trench that divides the study area. The tribute's limiting effect on all the parcels on the eastern side of Route 611 is road accessible depth of the property for economic viable development. The quarry is and will be a similar man made barrier on the western side of the road.



The zoning districts in and around the study area are a cross section of the available zoning within the township. The quarry district is the only unique district. The study area itself is comprised of three zoning districts. Edison Village, the quarry and parcels that are adjacent to Route 611 are VC (Village Center), Q (Quarry) and C1 (Highway Commercial), respectively.

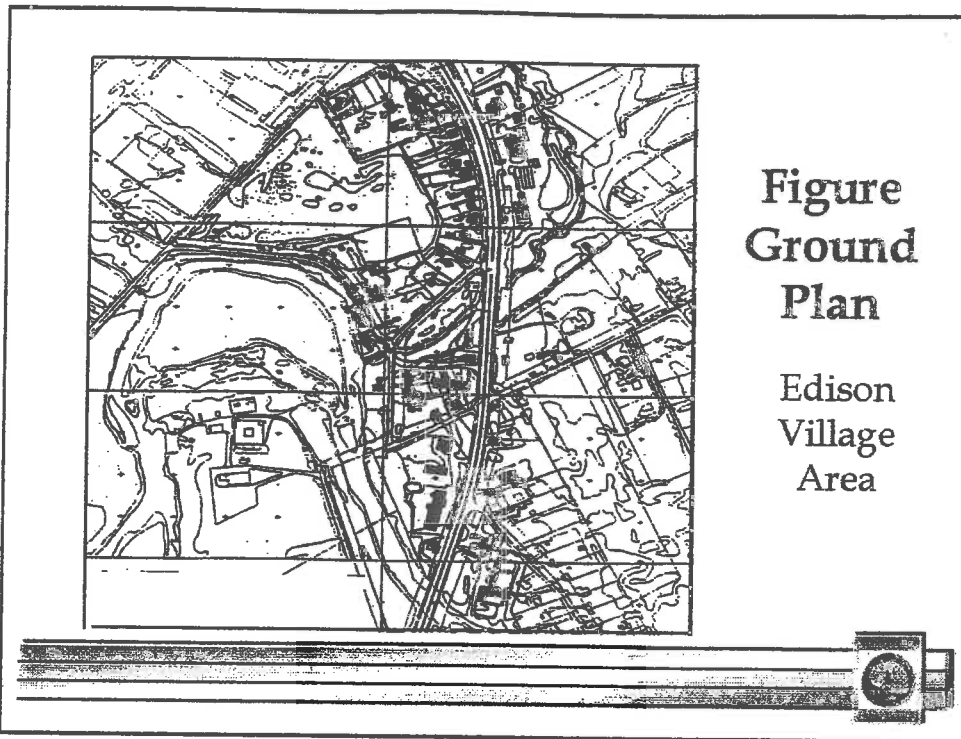
The districts to the south of the study area are Institutional (I) containing Bucks County property on the west and a shopping center district (C2) on the east. Several restaurants are located in these shopping centers with a movie theater under reconstruction on the property to the immediate south of the study area.

The remainder of the adjacent districts are varying density residential zoning. Zone R1 allows for nominal density (one acre lots) single-family residential uses and for single-family developments on smaller lots (down to one-half acre) where open space is preserved and centralized sewer and water services are provided. Zone R2 allows for higher density and multifamily developments where public services are available. Lot areas as small as 1600 square feet per dwelling unit are permitted for multifamily housing. Zone R1A allows for low-density residential uses such as single-family large lot developments and cluster developments where a large portion of the lot area or tract can be used to preserve natural features such as stream valleys, floodplains, wooded areas, farmland and other valuable natural features. The district is basically two acre zoning with minor lot size reductions in the cluster configuration.



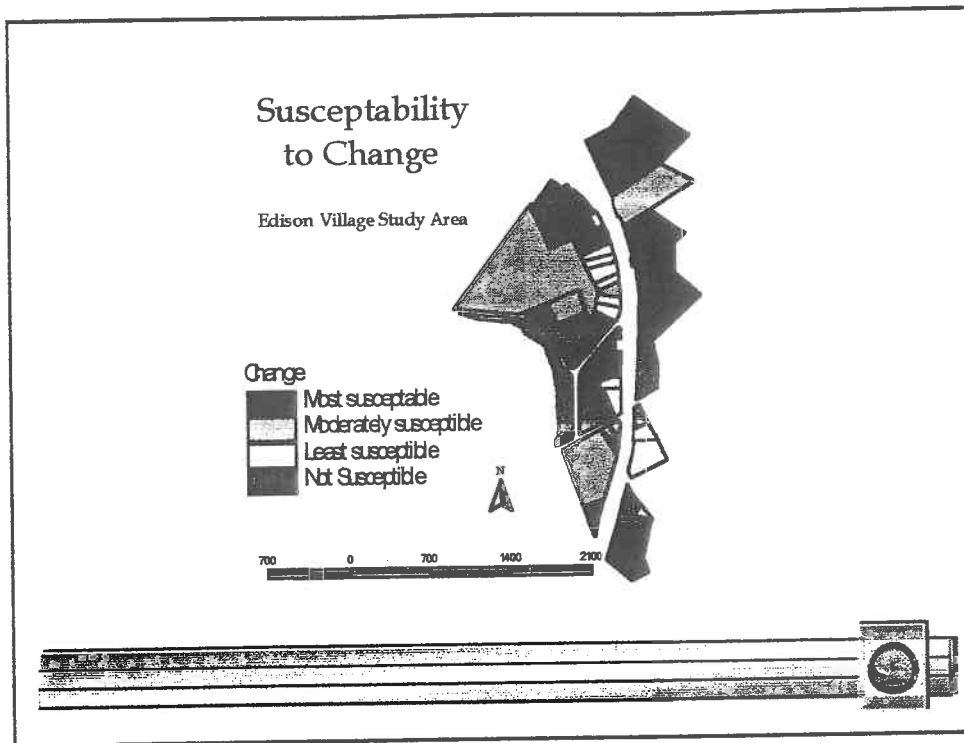
The Edison Village study area and its surroundings reflect the growth that has occurred in the last thirty-five years. Doylestown Township evolved from a farming community to a residential community with all the attendant commercial growth. This segment of the Route 611 corridor seems to be lagging behind this evolution. Even the properties east of the quarry have remained primarily residential despite their commercial zoning. Several factors may account for the present situation. In the northern portion of the area, the Creek, and its floodplain and the steep slopes along its banks have been a major constraint to the use of properties. The parcel sizes and both their visibility and access from the roadway have further constrained the properties. Overall, most of the parcels are under developed and do not reflect the highest and best uses for this land.

The permitted uses are for the most part, still applicable to these zones. These are tabulated as Attachment A. The table indicates whether the use is by right or by special exception via the Zoning Hearing Board. The uses that seem most visibly absent from the list are six for the Village Center district. These are uses usually associated with traditional villages. They are office, retail, repair shop, service business, financial establishment and dual use. Several of these uses still exist in Edison including apartments, though the latter might be the result of residential conversion.



This is a view of the Edison Village Study Area showing all the physical features of the area. The footprints of the structures have been filled-in for ease of viewing. The lot lines have been superimposed as well. The composite map is called a combination planimetric (physical features) and cadastral (legal features) map.

Note the structures east of the quarry. They are close to the roadway in a configuration very similar to those in the village.

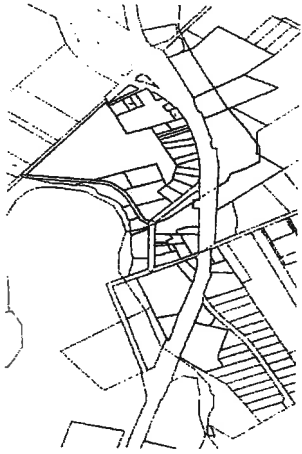


The susceptibility to change map is a subjective assessment of the properties based on a number of factors that would normally indicate more or less permanency. The factors used in this determination was the apparent physical condition of the property, its location with regard to Route 611, and its current use. For the properties east of the quarry as an example, if they were in good condition and had remained residential, the assessment was that it probably have only a slight susceptibility for change due to their location.

Another example is at the southwest corner of Turk Road and Route 611. The corner and the adjacent properties would be expected to change since they are ideal for servicing the new neighborhood to the north and the elementary school. The other most probable properties for redevelopment are on the east side of Route 611. Three of these properties are among the largest in the study area.



## Portrait of the Study Area



- The remnants of a true village hiding along the Neshaminy
- A tired stretch of highway commercial with
  - Small individual parcels
  - Waterway and wetland constraints
  - Restricted highway accessibility
  - Lack of roadside landscaping
  - Lack of pedestrian improvements
  - Lack of public water or sewer

The slide summarizes the physical conditions within the Edison Village Study Area. The area could use a little revitalization. The portrait correlates with the observations recorded in the 1992 Corridor Study which included this area as part of that study. Many of its suggestions were incorporated into township ordinances, but we need to go further. This leads us to the issues arising from the review of the zoning ordinance with respect to infill and redevelopment.

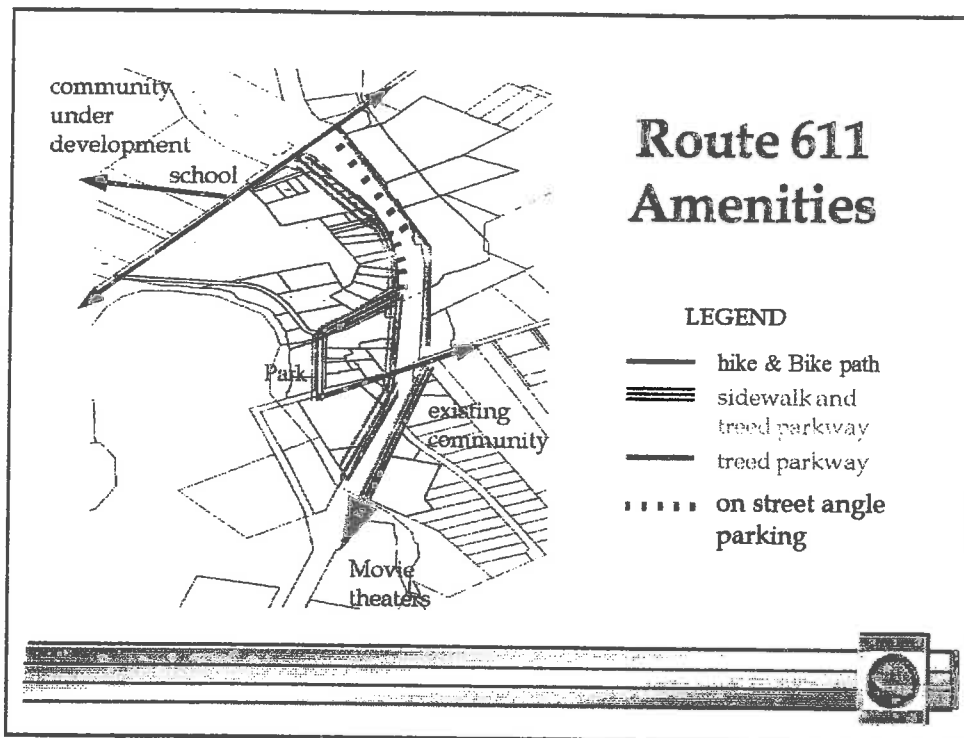
## Zoning Issues

- Parking
- Roadside Landscaping
- Pedestrian Access
- Area & Dimensional Requirements
- Conversions & Mixed Use
- Signage
- Ground & Storm Water Management
- Quarry
- Redevelopment Incentives

The township's zoning and land development and subdivision ordinances were reviewed for adequacy to effectively regulate infill and redevelopment. In addition, interviews were conducted with local officials, planners, developers, lawyers, architects, and engineers to obtain their experiences and perspectives with regard to the ordinances. They were also asked if there were any unnecessary obstacles and constraints to redevelopment imbedded within the ordinances. The zoning issues that kept reappearing throughout the process and were considered as significant are listed on the chart.

There were very few performance standard issues raised. The land development and subdivision ordinance being technical rather than policy is more straight forward and has been kept up to date. Water management and parking lot paving were the most significant issues mentioned in the review process. Storm, waste and ground water are aspects of the same resource and an integral part of our ecological system. The enhancement of the existing storm water regulations needed a thorough review of all three components and so was beyond the scope of the project. I have listed it at the bottom of the chart with two other items, the quarry and incentives, that also require additional efforts.

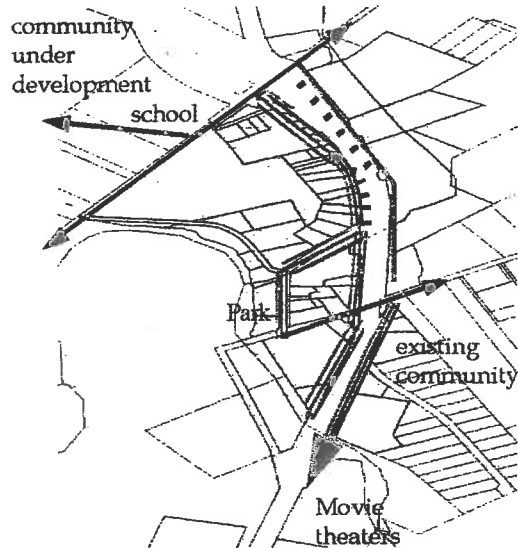
The first three zoning issues will be discussed together, then followed by the second three issues.



Pedestrian access, landscaping and parking are three zoning items that should be modified to enhance the desirability and visual appeal of the study area.





Three segments of the bike and hike path shown. They are connected to the adjacent neighborhoods. They need to be connected to each other, Bridge Point Park and the movie theaters in the shopping center. User residents are there as demonstrated by the existing pathways, all is needed is their transformation into reality. Street trees along Edison Road and Route 611 are envisioned in a parkway configurations which creates a separation between pedestrian and motor vehicle. There were no sidewalk suggested on the northeast section of Route 611 since they would not have led to any viable location.

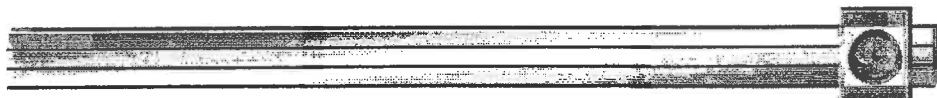
The township's on-street parking prohibition should be re-examined for the particular needs of this section of Route 611 and for Edison Village. Selected angle parking along Route 611 would increase the utility of the narrow and/or shallow parcels along this strip. With required parking pulled out of the heart of the parcel, the buildable area would be increased, enhancing the potential of viability of any redevelopment.



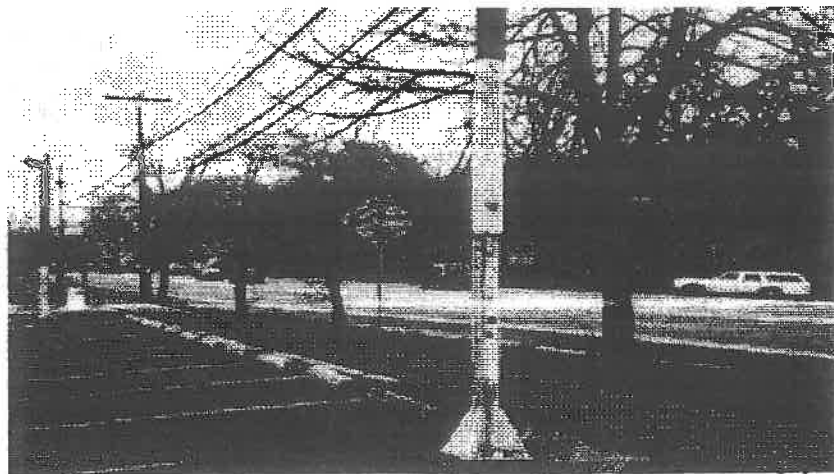
## Route 611 Amenities

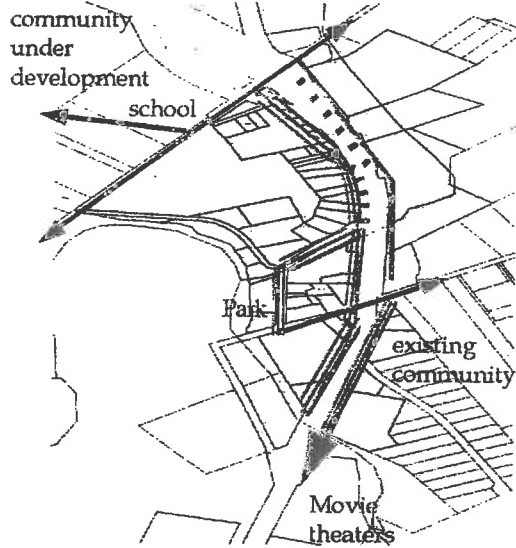
### LEGEND

-  hike & Bike path
-  sidewalk and treed parkway
-  treed parkway
-  on street angle parking







## Pedestrian Realm





## Route 611 Amenities

### LEGEND

-  hike & Bike path
-  sidewalk and treeed parkway
-  treeed parkway
-  on street angle parking

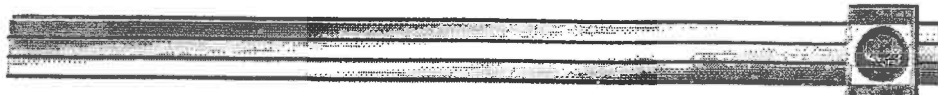


## Benefits of On-Street Parking



**Makes  
Narrow  
Lots Viable**

**Makes Shallow Lots Viable**



## Simplified Signage

Type	Zones	Uses	Max Area	Other Rqmts
Flat	VC,C1,Q	all	12 sf	ea. frontage
	C1	all	12% surface	
	Q	all	5% front surface + bonus to 10% 5% side surface	
Free Standing	VC,C1,Q	not single R	6 sf	ea. frontage
	VC,C1,Q	all	1f/5f frontage to 32sf	5f high & /use
	C1	175-16F	1f/5f frontage to 60sf	14f high
Projecting	VC,C1,Q	all		

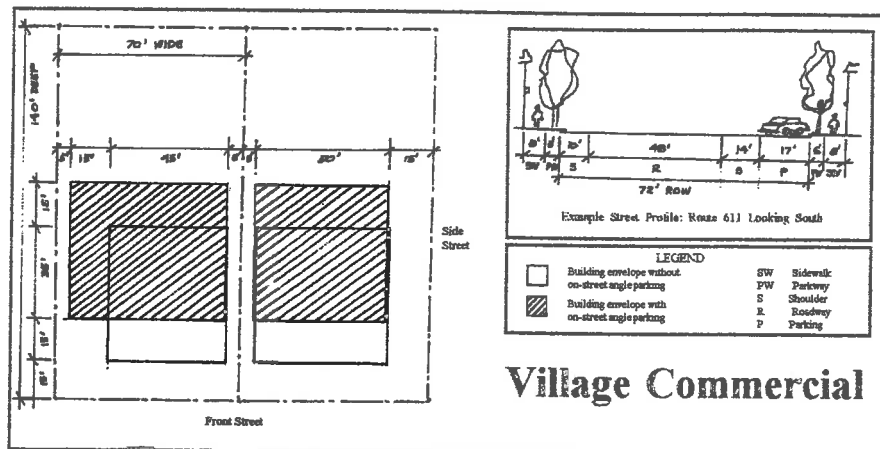
The individual sign requirements for the three zoning districts in the study area were simplified and combined. This table is presented in the chart. The summaries by zoning district prior to their combination are presented in Attachment B. This was not a trivial task due to the complexity and confusing nature of the present sign ordinance. Once the Provisions were identified, they were extended to be more encompassing in a consistent manner within the existing restrictions. All existing incentives were maintained.

A composite table with similar simplifications and extensions for the entire township is provided in Attachment B as well. The township wide table should be considered as a possible template for a more comprehensive revision of the sign sections of the ordinances.

Sign locations are stated to be either on the building or for free standing signs, no closer to the property line than one-half the required yard distance or 20 feet, which ever is larger.

A very pertinent factor with regard to the size and location of signs is not really addressed within the ordinance, that is, viewer movement. To assimilate and comprehend a sign of a particular size takes time and the amount of time available to the viewer is a function of the speed that the sign passes by. Within a shopping mall, the speed of vehicles and pedestrians allow for smaller signs than those observed from automobiles traveling 45 mile per hour. The present allocation of size for flat signs versus free standing signs might be more satisfying to merchants if they were tied the viewing environment. Larger free standing signs, appropriately designed, might be of greater value along Route 611 than large flat signs on the buildings themselves. This might be even significant if street trees are planted in parkways and parking lots.

# Building & Use Regulations



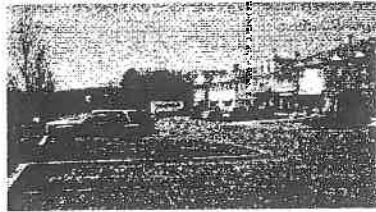
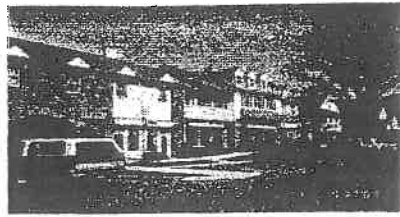
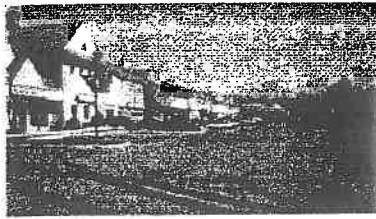
It was already been noted that several uses usually associated with traditional villages, were absent from the permitted use list. The most important of these is the Mixed Use. Mixed Use is where multiple uses are contained in the same building, for example, commercial or office uses on the ground floor and office or housing above. These are a staple configuration seen in all main streets.

The diagram shows a typical mixed use foot print that would be applicable to Edison Village and is consistent to the configurations suggested for use along sections of Route 611. If additional parking was required, it would be required in the side or rear of the buildings as it is suggested in the current ordinance. Additionally, if several mixed use buildings were in a row, than a joint driveway to the rear and side parking would be permitted, again, as in the current ordinance. The physical configuration of non-mixed use buildings containing offices, retail stores or consumer services should be similar.

The area and dimensional regulations for residential use within Edison Village is compatible to these configurations.

## Other Highway Commercial

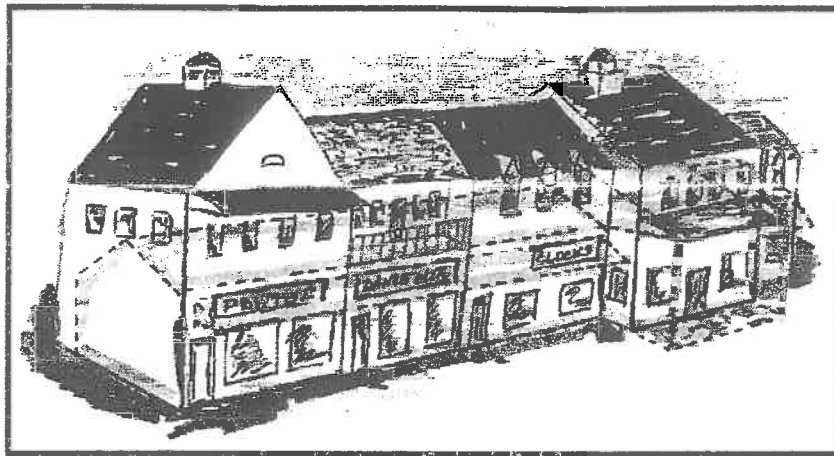
### Buckingham Green



Strip shopping mall need not be unattractive. Just north of Doylestown on US 202 is Buckingham Green. This is a typical and local example of a positive looking C1 district use. The Green contains mixed use buildings except for the restaurant which was built to additional fire protection requirements. The buildings have varied facades emulating a traditional village streetscape. The parking in front services the retail uses while the parking in the rear is for the office uses on the second floors. Route 611 in the study area could look like this.



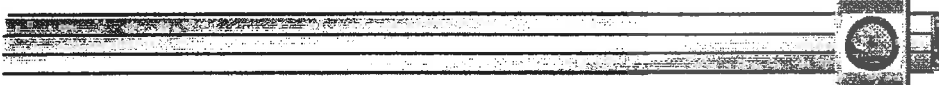
## 1776 Shopping Strip as a Mixed Use Building



This is an artist rendition of how the 1776 Shopping Strip might look with mixed use buildings and a similar facade as the Buckingham Green. The additional revenue coming from the added floor space might be just the incentive needed for its redevelopment.

## Conclusions

- Route 611 within the study area needs upgrading
- Enhanced redevelopment can be encouraged
- Viable zoning changes are available
- We can build upon the strength of Edison Village
- Route 611 can directly serve adjacent community needs



The viable changes are those that have been introduced; street trees to balance the starkness of the landscape; pedestrian walkways to facilitate movement into and around the businesses; connecting sidewalks to tie the adjacent neighborhoods into the village; on-street parking to give more flexibility for the use of the existing shallow and/or narrow lots; signage that will aid the highway oriented retail; and, infrastructure upgrades to support the new activities.

## Zoning Change Recommendations

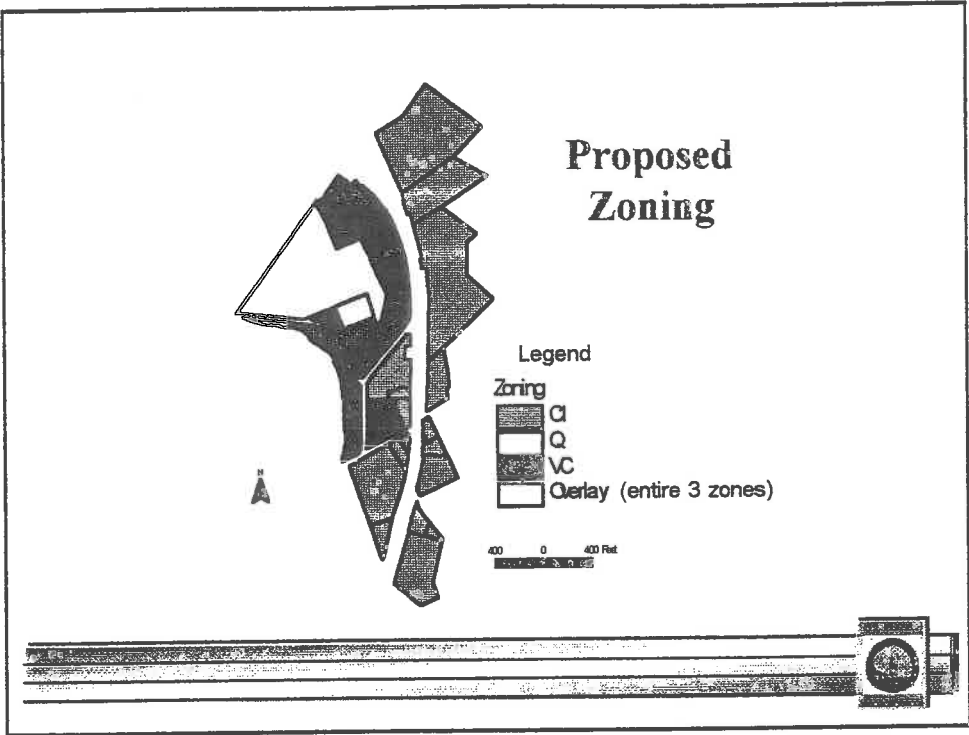
- Expand VC district east on Edison-Furlong and then north on Easton Road to Turk Road
- Overlay a traditional village zone over the entire study area especially the expanded village center district
- If Route 611 requires separation from Edison Village, then Establish a Village Commercial Overlay District
- Consider public water and sewer for the entire study area

The first recommendation has been voiced before and just formalizes what exists and has existed for some time. The physical conditions with regard to its highway access will never entice enhanced highway commercial uses but building on village and neighborhood involvement and use can revitalize that super block.

The use of an overlay district is crucial. It allows greater flexibility to redevelopers without relinquishing township control. As an overlay to the existing underlying districts, it acts as an optional supplement to those underlying district and their provisions. The actual implementation of any or all the overlay provisions would be at the sole and absolute discretion of the Board of Supervisors. If there is not an agreement between the supervisors and the developer on the overlay design, then the underlying district controls as always.

The use of an overlay also allows for the inclusion of architectural design guidelines without becoming in conflict with Act 247.

A skeleton ordinance is provided as Attachment C. This draft contains the details necessary to establish the structure and intent of this overlay district and the zoning enhancements presented.



The map shows both the zoning changes recommended, that is, the extension of the Village Center District to the area east of the Quarry District and the Village Overlay District overlaying all three districts shown.

## Further Study Recommendations

- Authorize a study of ground & storm water management. Consider the Impact with regard to:
  - impervious surface ratio
  - aquifer refresh
  - current storm water management techniques
  - infill and redevelopments projects in general
- Authorize a study to simplify the signage regulations
- Authorize a study of redevelopment incentives both for process and extent

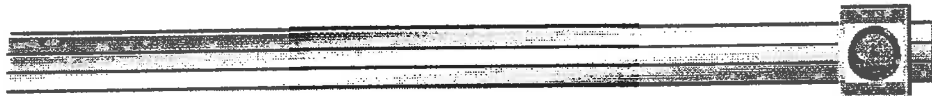
Water and sewer issues are always competing with storm water management for top billing in our land development and subdivision review process. The extent of impervious coverage is not far behind. But in fact, they are all contributing elements of the same ecosystem. With the extent of the present development within the township, a reassessment of the controls and design standards the township imposes on development, or rather infill and redevelopment, is strongly recommended.

Sign regulations could be modified by just reworking the chart provided in the attachment but it would only simplify permanent basic signage. The topic should be looked at in its entirety.

The final recommendation regards incentives. They are a major township resource for enticing developers to provide more than the minimum amenities and design aspects that benefit the public good. If we want to achieve specific development objective within the township, the right incentives must be in place. To be most effective, the incentives must be known before developers initiate their planning process. The existing incentives should be review, modified and expanded to reflect good community planning principles and the results of the present strategic planning process.

## Suggested Plan of Action

- Have the Planning Commission and staff review the
  - Zoning district change recommendations
  - Zoning overlay recommendations
- Have the Planning Commission initiate studies on
  - Ground & storm water management
  - Redevelopment incentives and innovations
- Coordinate the efforts with the on-going strategic planning effort



## References

1. Bureau of the Census. 1997. *Special census of the population of Doylestown Township*. Bureau of the Census letter dated October 10, 1997.
2. Doylestown Bike and Hike Committee. 1995. *Doylestown Community Joint Comprehensive Pedestrian/Bicycle Transportation Plan*.
3. Doylestown Township. 1989. *Comprehensive Plan*.
4. Doylestown Township. 1997. *Subdivision and Land Development Ordinance*.
5. Doylestown Township. 1997. *Zoning Ordinance*.
6. Froehlich, Lynn. 1992. *Doylestown Corridor Study*.
7. Nelessen, Anton C. 1993. *Visions for a New American Dream*. American Planning Association's Planners Press, Chicago, Il.
8. PA Department of Transportation. 1989. *Engineering & Traffic Studies*. Publication 201, July 1989.
9. PA Department of Transportation. 1993. *Highway Occupancy Permit Handbook*. Publication 282, September 1993.
10. United States Housing and Home Finance Agency, Urban Renewal Agency, 1965. *Standard Land Use Coding Manual*. Washington, D.C.
- 11.

Attachment A

Zoning Districts  
C1 Q VC

Standard Land Uses

Permitted Uses	Standard Land Uses	C1	Q	VC
175-16A-1 Agriculture and Horticultural	8100 Agriculture	R	R	R
175-16A-3 Kennel	8100 Agriculture	R	R	R
175-16B-1 Single-family detached dwelling	1100 Household units	R		R
175-16B-2 Single-family semidetached dwelling	1100 Household units			R
175-16B-3 Two-family detached dwelling	1100 Household units			R
175-16B-10 Residential conversion	1100 Household units			SE
175-16B-12 Guesthouse/bed and breakfast	1500 Transient lodgings	SE		SE
175-16C-1 Place of worship	6910 Religious activities			SE
175-16C-4 Library or museum	7110 Cultural activities	R		R
175-16C-5 Recreational facility	7600 Parks	R	R	R
175-16C-6 Athletic facility	7400 Recreational activities	R	R	R
175-16C-8 Private organization	6990 Other misc. services			SE
175-16C-9 Community Center	6990 Other misc. services	R		
175-16C-10 Day-care service	6800 Educational services			
175-16C-15 Municipal/government building	6700 Government services	R	R	R
175-16D-1 Office	6050 Business Offices	R	R	
175-16D-2 Medical Office	6510 Medical & other health services	R		
175-16E-1 Retail shop	5300 Retail trade - general merchandise	R		
175-16E-3 Service business	6200 Personal services	R		
175-16E-4 Financial establishment	6100 Finance, insur. & real estate services	R		
175-16E-5 Eating place	5400 Retail trade - food	R	R	
175-16E-7 Repair shop	6490 Other repair services	R		
175-16E-10 Service station	5530 Gasoline service station	R		
175-16E-11 Automobile sales	6411 Automobile repair services.	R		
175-16E-12 Automobile body repair & paint shop	5500 Retail trade - automobile, ..	R		
175-16E-13 Car wash	6411 Automobile repair services.	SE	R	
175-16E-15 Funeral home	6412 Automobile wash services	R		
175-16E-16 Veterinary office and clinic	6240 Funeral & cremation services.	R		
	8200 Agricultural related activities	R		



Attachment A

Zoning Districts  
C1 Q VC

Standard Land Uses

Permitted Uses	Standard Land Uses	Zoning Districts
		C1 Q VC
175-16F-1	Utility operating facility (station in VC)	R R SE
175-16F-3	Terminal	R R R
175-16G-1	Manufacturing	R R R
175-16G-2	Research	R R R
175-16G-3	Mini warehouse / mini storage	R R R
175-16G-4	Printing	R R R
175-16G-5	Contracting services	R R R
175-16G-6	Trades	R R R
175-16G-7	Fuel storage and distribution	R R R
175-16G-8	Building materials sales	R R R
175-16G-9	Equipment storage	R R R
175-16G-10	Truck terminal	R R R
175-16G-11	Food processing	R R R
175-16G-12	Recycling facility	R R R
175-16G-13	Quarry	SE R R
175-16G-14	Laundry, dry-cleaning or dyeing plant	R R R
175-16G-15	Warehouse	R R R
175-16G-16	Junkyard	R R R
175-16H-1	Home Office	SE R R
175-16H-2	Home occupation	R R R
175-16H-3	Residential accessory structure	R R R
175-16H-5	Temporary structures and vehicles	SE R R
175-16H-6	Swimming pool	R R R
175-16H-7	Spas/hot tubs/pools of restrictive size	R R R
175-16H-9	Garage/yard sales	R R R
175-16H-10	Baby-sitting services	R R R

Legend: R = Permitted by Right  
SE = Permitted by Special Exception

**Attachment B**

**Route 611 (C1 Zoning District)**

Uses	Flat Signs	Free Standing Signs	Projecting Signs
All permitted commercial uses [175-16 E uses]	12 % of building front surface max.	1 sq. ft. per ea. 5 ft. of frontage to a max of 60 sq.ft. (14 ft. high max)	4 sq.ft. from the 12 % max.
Single D1 & Single Institutional	2 sq. ft. max. for ID	1 sq. ft. per ea. 5 ft. of frontage to a max of 32 sq.ft. (5 ft. high max)	
Multi-D1 & Multi-Institutional	2 sq. ft. max. per use	max of 32 sq.ft. per use (5 ft. high max) 2 sq. ft. max. per intersection	

**Edison Village (VC Zoning District)**

Uses	Flat Signs	Free Standing Signs	Projecting Signs
All permitted uses	12 sq. ft. max.		
All permitted 175-16F (common carrier and public utilities )	12 sq. ft. max.	8 sq. ft. max.	
175-16 B(12) use	12 sq. ft. max.	6 sq. ft. max.	

**Edison Village (Q Zoning District)**

Uses	Flat Signs	Free Standing Signs	Projecting Signs
All permitted	5% side surface max or 12 sq. ft. max.		
All permitted	5% front surface + bonuses to 10%		
Single 175-16 C & F uses & Single Institutional uses	12 sq. ft. max.	1 sq. ft. per ea. 5 ft. of frontage to a max of 32 sq.ft. (5 ft. high max)	
Multi 175-16 C & F uses & Multi-Institutional uses	2 sq. ft. max. per use	max of 32 sq.ft. per use (5 ft. high max) 2 sq. ft. max. per intersection	

B. Overlay Concept.

(1) The district described herein shall be considered an overlay to the existing underlying districts specified also herein, and the provisions for the overlay district shall serve as a supplement to the underlying district provisions. The actual implementation of any or all the overlay provisions shall be at the sole and absolute discretion of the Board of Supervisors.

(2) In the case that an overlying provision is disallowed by the Board of Supervisors, then the provisions and requirements of the underlying district shall apply.

(3) In the event that any provision concerning the overlay district is declared inapplicable as a result of any legislative or administrative or judicial discretion, the basic underlying district provisions shall remain applicable.

C. Underlying Districts: The Village Overlay District described herein shall be an overlay to the following existing zoning districts:

- (1) Village Center (VC)
- (2) Commercial District (C1)
- (3) Quarry District (Q)

D. Design Review. Applicants for subdivisions and land development shall submit, in addition to all other required information, architectural drawings of proposed building(s) with information on building materials and colors. The proposed design shall be reviewed as part of the subdivision or land development review process. Design reviews shall consist of a systematic assessment of the three-dimensional configuration, design, and materials to be used to ensure that the proposed development or redevelopment meets the goals for the Village Overlay District.

## 2. Definitions

A. Applicability. For the purposes of this overlay district only, the following words and phrases shall have the meaning indicated herein, unless the context clearly indicates otherwise. Any word used in this article which is not defined herein and which is defined in other articles of this zoning ordinance or the township subdivision and land development ordinance shall, for the purpose of the article, have the meaning defined therein.

### B. Terms Defined.

Articulated Base. A base having clear and distinct joints.

Balustrade. A railing with supporting balusters.

Blank Wall. An exterior building wall with no openings and generally constructed of a single material, uniform texture, and on a single plane.

Design Vocabulary. A style of architecture defined by any specific group of forms or characteristics.

Dormer. A structure containing a vertical window in a projection built out from a sloping roof.

Eaves. An overhanging lower edge of a roof.

Facade. A building face or wall.

Gable. The part of the end wall of a building between the eaves and a pitched roof.

Gateway. A principal point of entrance into a district or neighborhood.

Green. A piece of grassy ground constituting a town or village common.

Hipped Roof. A roof containing angular junctions formed by adjacent sloping sides.

Massing. The three-dimensional bulk of a structure: height, width, and depth.

Mixed Use Building. A building containing more than one use, e.g., retail on the ground floor and offices and/or housing above.

Parapet Wall. A low protective wall or barrier at the edge of a balcony, roof, or the like.

**Parkway.** A planting area typically located within the public right-of-way, located between the curb and the sidewalk, and planted with ground cover and trees.

**Pitch.** The angle of slope of a roof or berm.

**Protico.** An open structure attached to a building sheltering an entrance or serving as a semi-enclosed space.

**Public Viewshed.** That which is reasonably visible, under average conditions, to the average observer located on any public land or right-of-way, or on any semi-public or private space which is normally accessible to the general public.

**Salt Box Roof.** A roof having about the same pitch in both directions on a house generally two full stories high in front and one story high in back, so that the ridge of the roof is well toward the front of the house.

**Streetscape.** The built and planted elements of a street which define its character.

**Topography.** A detailed description of the physical features of a relatively small area of land.

**Vernacular.** pertaining to items native or originating in the place of occurrence or use

**Viewshed.** (See Public Viewshed).

**Visual Termination.** A point, surface, building, or structure terminating a vista or view, often at the end of a straight street or coinciding with a bend.

### 3. Permitted Uses

A building or structure may be erected or altered, to be used either in whole or in part, and a lot may be used, or occupied for any of the following uses and no other, provided that such uses, buildings and structures comply with the Street and Building Regulating Plans and other regulations specified herein.

A. Uses by right. Any of the following uses shall be permitted, provided that the regulations of this and other applicable chapters have been met.

- B-1 Single-family detached dwelling
- B-2 Single-family semidetached dwelling
- B-3 Two-family detached dwelling
- B-10 Residential conversion
- B-12 Guesthouse/bed and breakfast
- C-1 Place of worship
- C-4 Library or museum
- C-5 Recreational facility
- C-6 Athletic facility
- C-8 Private organization
- C-9 Community Center
- C-10 Day-care service
- C-15 Municipal/government building
- D-1 Office
- D-2 Medical Office
- E-1 Retail shop
- E-3 Service business
- E-4 Financial establishment
- E-5 Eating place
- E-7 Repair shop
- E-10 Service station
- E-11 Automobile sales
- E-13 Car wash
- E-15 Funeral home
- E-16 Veterinary office and clinic
- F-1 Utility operating facility
- F-3 Terminal
- G-1 Manufacturing
- G-2 Research
- G-3 Mini warehouse / mini storage
- G-4 Printing
- G-5 Contracting services
- G-6 Trades

- G-8 Building materials sales
- G-13 Quarry
- H-1 Home Office
- H-2 Home Occupation
- H-3 Residential accessory structure
- H-6 Swimming pool
- H-7 Spas/hot tubs/pools of restrictive size
- H-9 Garage/yard sales

New Mixed Use. Mixed Use is where multiple uses are contained in the same building, for example, commercial or office uses on the ground floor and office or housing above.

(a) Permitted uses are C-8, C-9, C-10, C-15, D-1, D-2, E-1, E-3, E-4, E-7 E-16 and residential on upper floors.

(b) Each dwelling unit shall have not less than seven hundred fifty (750) square feet of floor space.

B. Uses by special exception. Any of the following uses shall be permitted upon the findings of the Zoning Hearing Board that all criteria stated in this and other applicable chapters have been met.

- E-12 Automobile body repair & paint shop
- H-5 Temporary structures and vehicles

#### 4. Street Regulating Plan

##### A. General Street Standards.

(1) All lanes, alleys, streets, avenues, and boulevards developed within the overlay district shall conform to the standards as defined herein.

(2) The street configurations were designed to meet the needs of the projected traffic and pedestrian volume and circulation. In addition, the streets have been specifically designed to provide a sense of enclosure, enhance neighborhood character, and provide physical and visual access to public places in the overlay district. Visually terminations are encouraged in all applicable locations. Each street type has been dimensioned and specified for right-of-way, street pavement, parkway, sidewalk, landscaping, lighting, drainage, parking, average daily traffic, and curb radii. Existing and historical conditions were considered. The street types designated within the article refer to the diagrams for that street type in this section. The diagrams specify the minimum requirements for each of the street types.

(3) The following apply to all streets, avenues, and boulevards:

(a) Diagonal head-in (angle) parking may be permitted along the front of commercial uses. Curbside parking shall not be permitted within twenty-five feet of an intersection.

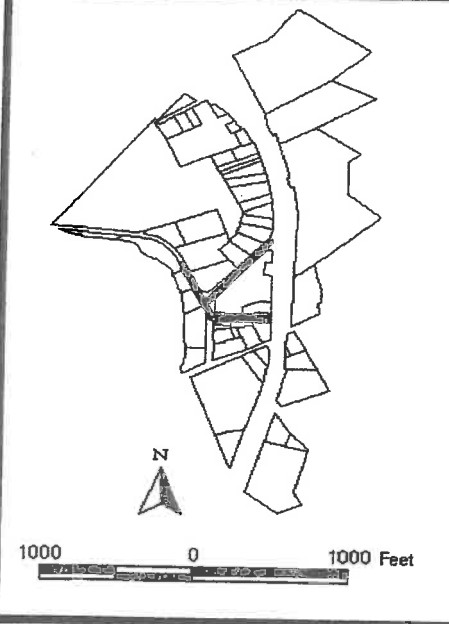
(b) Planted parkways shall be provided, except where the road abuts a community green. The parkway shall be a minimum of five (5) feet in width. Sidewalks shall have a minimum width of five (5) feet, except along commercial uses where the sidewalks shall be larger. At corners, handicapped ramps shall be provided and sidewalks shall be continued across street surfaces using paving materials to delineate crosswalks.

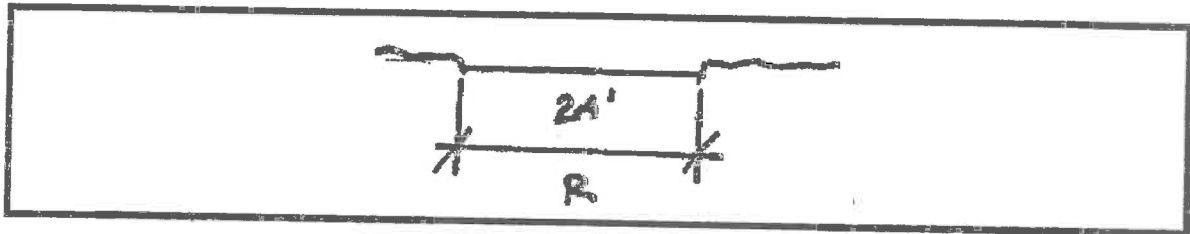
(c) Curbing shall be required on all streets except where specified herein. Granite block curbing, or equivalent, is recommended.

B. Street Type Descriptions. The five (5) street types are specified in the remaining pages of this section.

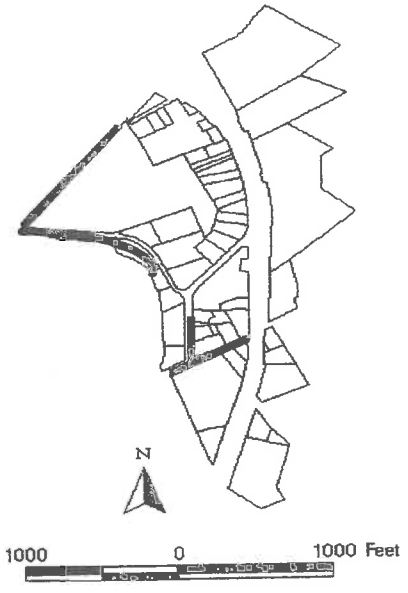


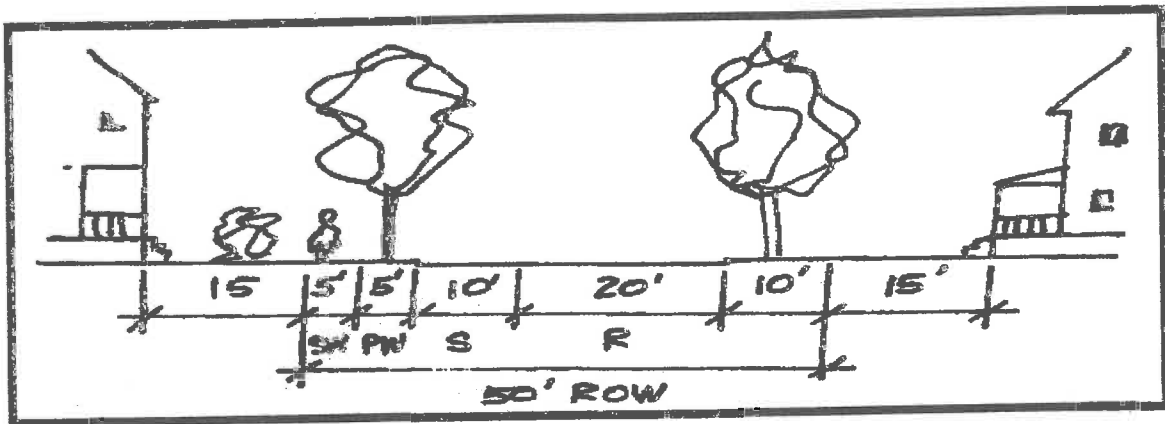
# STREET TYPE 1

 <p>A map showing a network of streets. A north arrow is located in the lower-left corner. Below the north arrow is a scale bar labeled "1000 0 1000 Feet".</p>	<p><b>SPECIFICATIONS</b></p> <ul style="list-style-type: none"><li>Two-Way Traffic</li><li>No Shoulder</li><li>No On-Street Parking</li><li>No Sidewalks</li><li>No Street Lighting</li><li>No Landscaping</li><li>Curbing as Required</li></ul> <p><b>LEGEND</b></p> <ul style="list-style-type: none"><li>R Roadway</li></ul>
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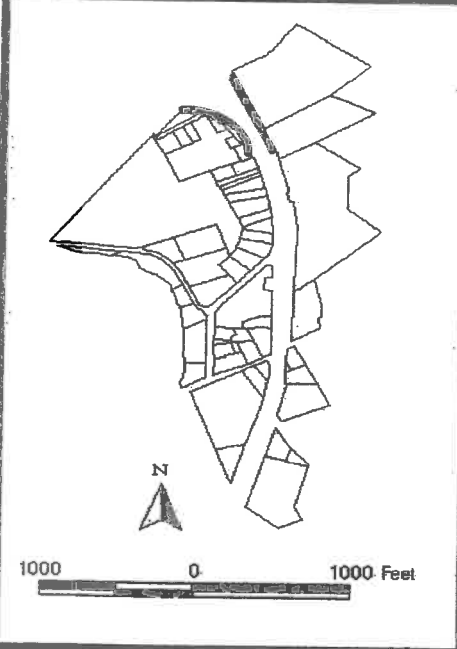


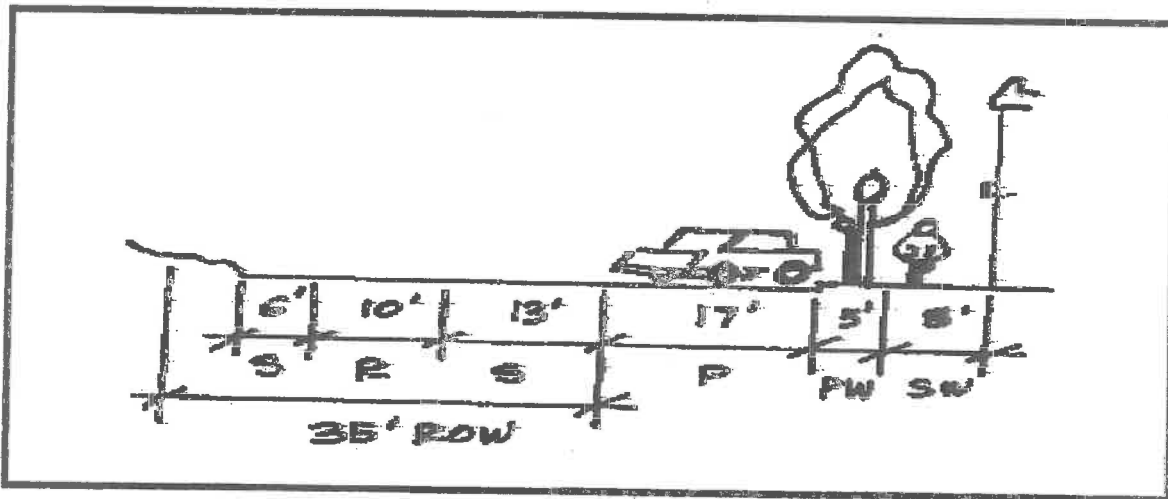
## STREET TYPE 2

	<p><b>SPECIFICATIONS</b></p> <ul style="list-style-type: none"><li>Two-Way Traffic</li><li>No Shoulder</li><li>No On-Street Parking</li><li>Sidewalks &amp; Parkways on One Side</li><li>Street Lighting as Required</li><li>Street Trees at 20 Feet Intervals</li><li>Curbing as Required</li></ul> <p><b>LEGEND</b></p> <ul style="list-style-type: none"><li>P Parking</li><li>PW Parkway</li><li>R Roadway</li><li>ROW Right-Of-Way</li><li>S Shoulder</li></ul>
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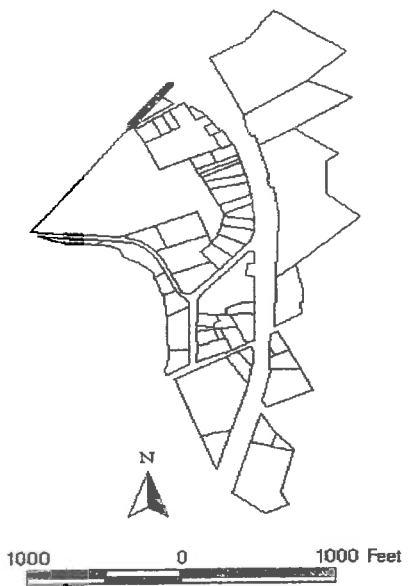


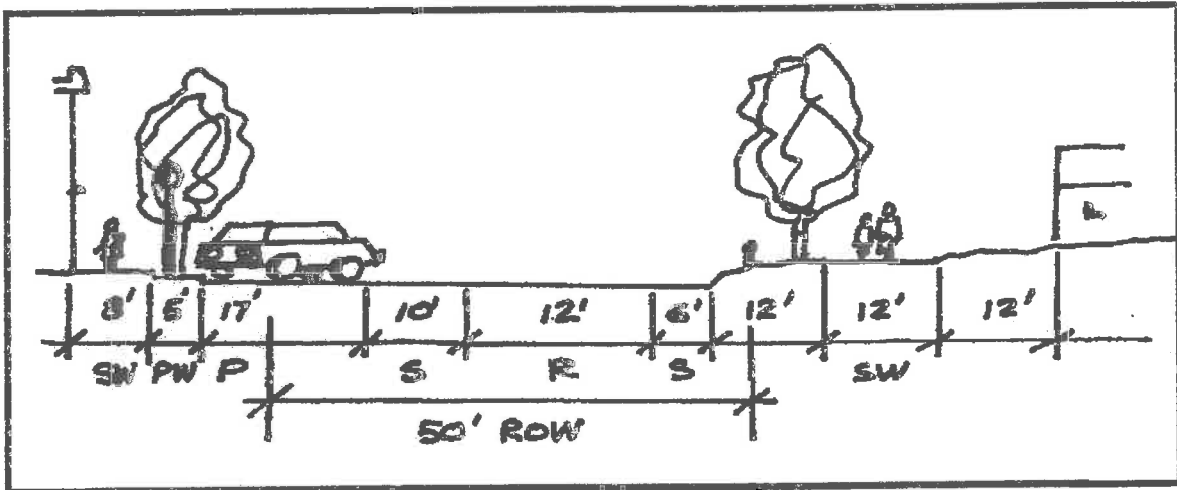
# STREET TYPE 3

	<p><b>SPECIFICATIONS</b></p> <ul style="list-style-type: none"><li>Two-Way Traffic</li><li>10 Foot Wide Shoulders</li><li>Angle On-Street Parking (Northbound)</li><li>Sidewalks &amp; Parkways on One Side</li><li>Street Lighting every 80 Feet (Southbound)</li><li>Street Trees at 24 Foot Intervals</li><li>Curbing as Required</li></ul> <p><b>LEGEND</b></p> <ul style="list-style-type: none"><li>P Parking</li><li>PW Parkway</li><li>R Roadway</li><li>ROW Right-Of-Way</li><li>S Shoulder</li></ul>
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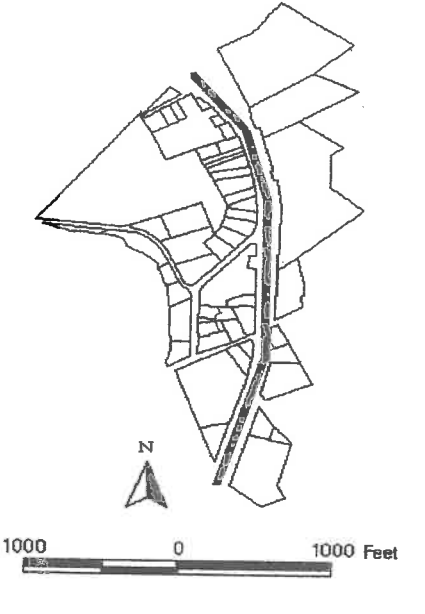


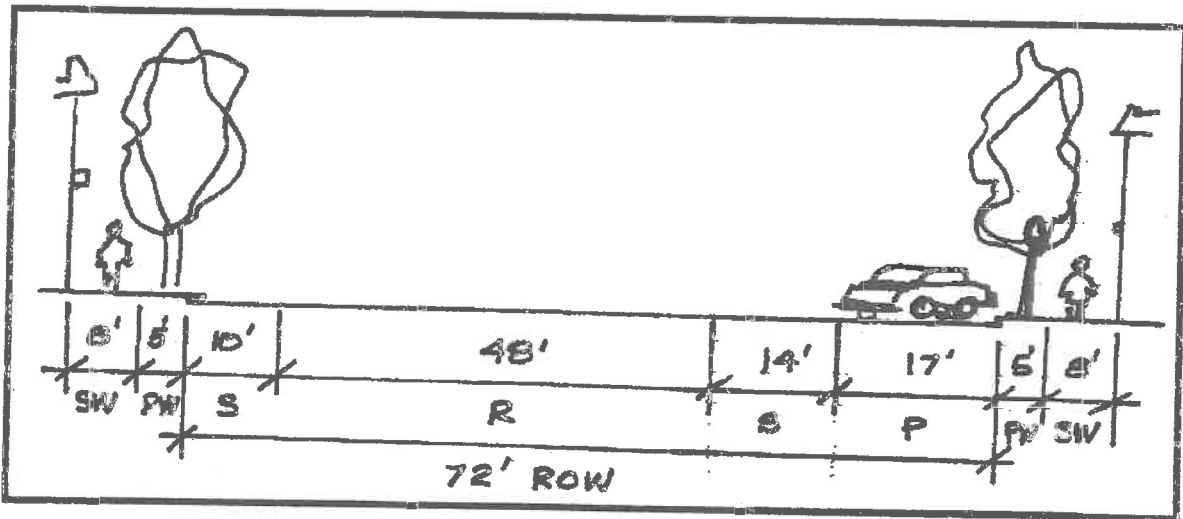
# STREET TYPE 4

	<p><b>SPECIFICATIONS</b></p> <ul style="list-style-type: none"><li>Two-Way Traffic</li><li>10 Foot Wide Shoulders</li><li>Angle On-Street Parking on One Side</li><li>Sidewalks &amp; Parkways on One Side</li><li>Street Lighting every 80 Feet</li><li>Street Trees at 24 Foot Intervals</li><li>Curbing as Required</li></ul> <p><b>LEGEND</b></p> <ul style="list-style-type: none"><li>P Parking</li><li>PW Parkway</li><li>R Roadway</li><li>ROW Right-Of-Way</li><li>S Shoulder</li></ul>
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# ROUTE 611

	<p><b>SPECIFICATIONS</b></p> <ul style="list-style-type: none"> <li>Two-Way Traffic</li> <li>10 Foot Wide Shoulders</li> <li>Angle On-Street Parking on Southbound Side</li> <li>Sidewalks &amp; Parkways on Both Sides</li> <li>Street Lighting every 80 Feet</li> <li>Street Trees at 24 Foot Intervals</li> <li>Curbing as Required</li> </ul> <p><b>LEGEND</b></p> <ul style="list-style-type: none"> <li>P Parking</li> <li>PW Parkway</li> <li>R Roadway</li> <li>ROW Right-Of-Way</li> <li>S Shoulder</li> </ul>
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## 5. Building Regulating Plan

### A. General Requirements.

(1) **Building Variation.** Buildings containing dwelling units shall be designed in conformance with the design standards of section six. Building designs shall vary in terms of footprint, architectural elevations, window placement, type of roof, height, front entrance, and porch locations. Colors, materials, and architectural details should be limited in number, compatibility, and repetition throughout the neighborhood.

(2) **Raised Ground Floor.** The ground floor of all residential units shall be raised above the level of the adjacent sidewalk as specified for the various street types. Residential units shall have their ground floors raised above ground level of the building by a minimum of two (2) feet.

(3) **Front Yards.** All dwelling units, excluding accessory dwellings and urban apartments, shall have a clearly defined front yard using landscaping, hedging, fencing, or a brick or stone wall, none of which shall exceed three (3) feet in height.

(4) **Front Porches.** A minimum of fifty percent (50%) of dwelling units, except apartments shall have a front entrance articulated with a covered front entry porch. Front porches shall generally be located on the front wall of the building. The size of front entry porches shall be a minimum of six (6) feet deep from the front wall of the dwelling to the enclosing porch rail and ten (10) feet long.

(5) **Patios/Terraces.** All dwelling units, except apartments located on upper floors, shall have a private yard or patio a minimum of 400 square feet in area and enclosed by a masonry wall, wooden fence, evergreen hedge, vines, or some combination thereof. The height of such yard or patio enclosure shall not exceed six (6) feet. The bottom four (4) feet shall be solid and the top two (2) feet shall be forty percent (40%) open using decorative trellising and shall be suitable to provide privacy and views of neighborhood uses. Each upper floor apartment dwelling shall be provided with a terrace consisting of a minimum of 64 square feet, recessed inside the exterior building wall of the dwelling, or a balcony of 72 square feet projecting on the outside of the building wall. If a terrace or balcony is not provided for upper floor apartments, each dwelling shall be provided with access to a conveniently located common space, park, or green with a minimum size equal to, or greater than, the total of the combined balconies plus an additional 100 square feet of area per unit more than the required balcony or terrace square footage requirement. Such additional space shall be designed as outdoor rooms with hard surfaces and places for grills, movable chairs, and tables.

(6) **Roof Line Orientation.** Roof line orientation shall vary to the highest extent possible. No neighborhood street or block shall have more than two (2) consecutive units with the same roof type and roof orientation.

(7) Buildings shall be considered in terms of their relationship to the height and massing of adjacent buildings, as well as in relation to the human scale.

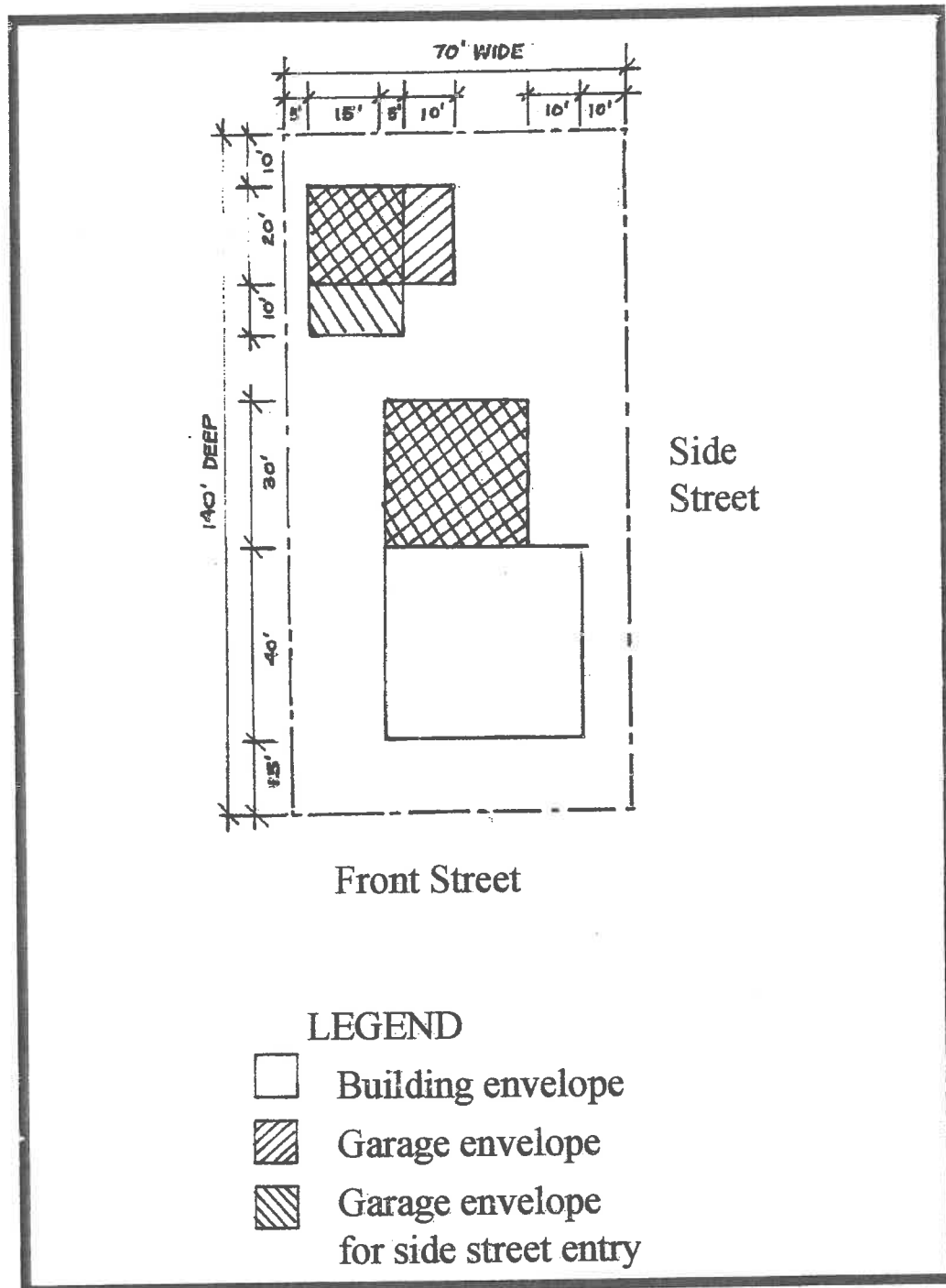
(8) All materials, colors, and architectural details used on the exterior of a building shall be compatible with the buildings style, the Design Standard, and with each other. A building designed of architectural style that normally includes certain integral materials, colors, and/or details shall incorporate such into its design. Where appropriate to the architectural style of a building, shutters shall be provided on all windows fronting a street or visible from public right-of-way. Shutters shall be proportioned to cover one-half (0.5) the width of the window.

(9) **Mixed Use Buildings.** Commercial shall be contained in buildings as specified in this section, including multi-story, mixed use structures with commercial/retail uses on the ground level, and apartment dwellings or offices on the upper levels. Such buildings vary in terms of footprint and architectural elevations. In a three (3) story building, the second floor may contain either apartment dwellings or commercial uses. Commercial uses can be mixed and integrated with dwelling units, public and semi-public uses, community clubs, and community facilities.

**B. Building Lot Type Descriptions.** The following pages describe in detail the following lot types:

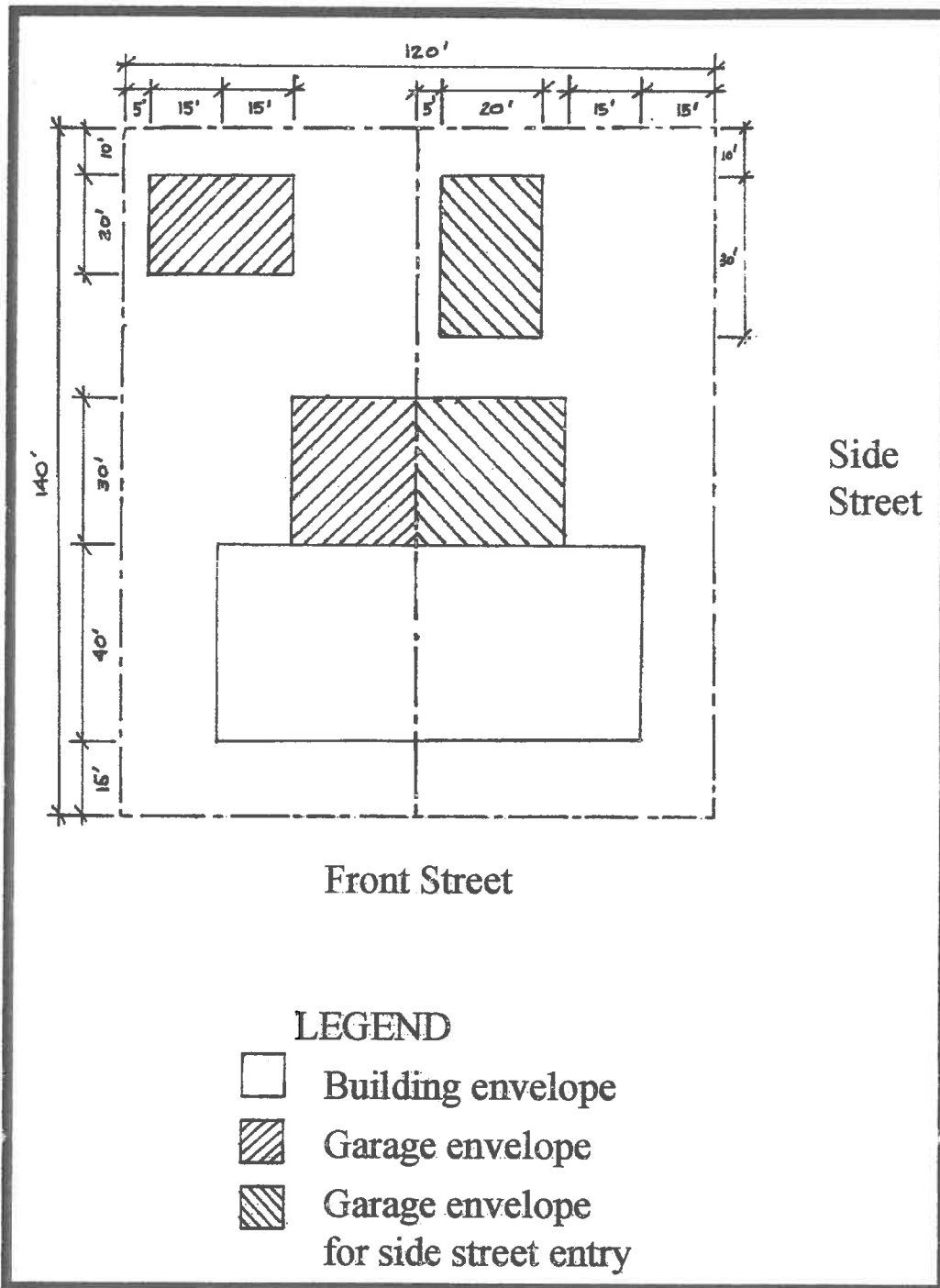
- (1) Village House
- (2) Village Duplex
- (3) Village Commercial / Mixed Use

### VILLAGE HOUSE

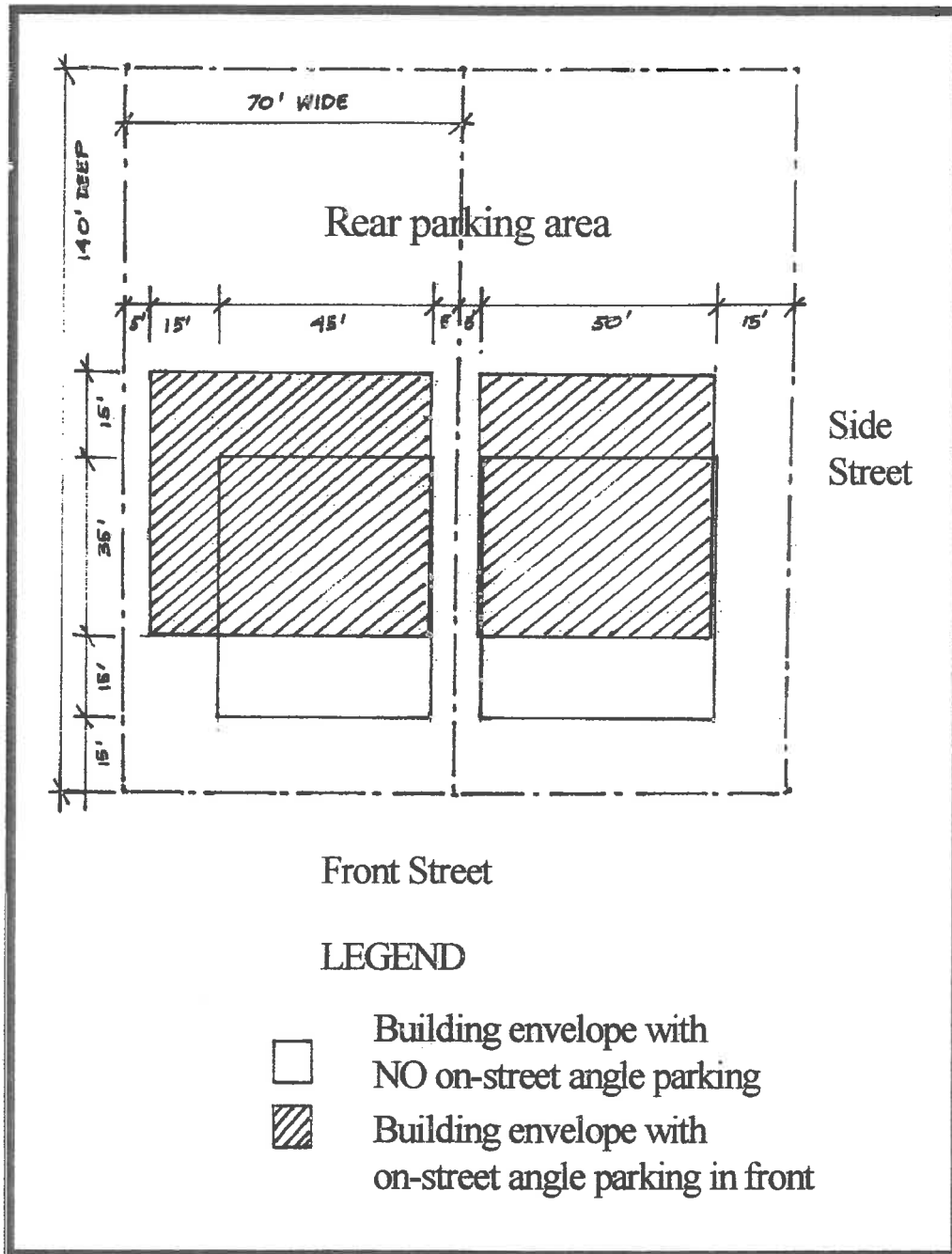




# VILLAGE DUPLEX



### VILLAGE COMMERCIAL / MIXED USE



**6. Design Standards**

The Design Standards is provided to develop unity within the district while encouraging and allowing diversity. This section shall serve as guidelines, illustrating and itemizing the desired architectural styles, configurations, materials, and colors. The written code is enhanced by a pictorial design vocabulary categorized by land use type, residential, commercial, and mixed-use. The photographs were intentionally and deliberately selected for the object of illustrating the desired look and feel of the district.

The submitted design vocabulary shall respond to the general and specific design standards as specified in this article. These must be presented at sketch, preliminary and final plan reviews. At sketch plan review, they can be photographs which capture the intended and desired character. At preliminary plan review, the design vocabulary must be fully developed including plans, elevations, materials, and colors specified. A variation on the existing historical vernacular architectural styles in the region or the township is recommended. The materials, colors, and massing incompatible with the Building Regulating Plan and Design Standards sections, shall be avoided.

**A. Site Orientation.**

(1) Spatial relationships between buildings and other structures shall be geometrically logical and/or architecturally formal. On a lot with multiple buildings, those located on the interior of the site shall front towards and relate to one another, both functional and visually. A lot with multiple buildings may be organized around features such as courtyards, greens, or quadrangles which encourage pedestrian activity and incidental social interaction among users. Buildings shall be located to allow for adequate fire and emergency access.

(2) Buildings shall be located to front towards and relate to public streets, both functionally and visually. Buildings shall not be oriented to front toward a parking lot. All visual sides of a building within any public viewshed from any street, alley, or other public right-of-way shall be designed to be consistent with regard to character, style, material, color, and detail.

(3) Building located at gateways entering the community shall mark the transition into and out of the neighborhood in a distinct fashion using massing, additional height, contrasting materials and/or architectural embellishments to obtain this effect. Buildings located at gateways to a community green area or a commercial area shall mark the transition to such areas in a similar manner.

(4) Focal points, or points of visual termination, shall generally be occupied by more prominent, monumental buildings and structures that employ enhanced height, massing, distinctive architectural treatments, or other distinguishing features.

## B. Building Mass and Style

(1) Commercial buildings shall avoid long, monotonous, uninterrupted walls or roof planes. Building wall offsets, including projections, recesses, and changes in floor level shall be used in order to add architectural interest and variety, and to relieve the visual effect of a simple, long wall. Similarly, roof-line offsets shall be provided, in order to add architectural interest and variety to the massing of a building and to relieve the visual effect of a simple, long roof. The exterior of duplexes may be designed to appear as a single building, such as a large single-family detached dwelling.



Photo 6.1 Buildings creating a varied street wall



Photo 6.2 Single building Duplex design

## C. Roofs and Roof Materials

(1) Roof types shall be front or side gable, hipped, salt box, or combinations thereof. The principle roof pitch shall be 9 over 12. The principle pitch may be lowered if there are overhanging eaves that are either bracketed or have exposed rafters.

(2) A shed roof shall be permitted only when attached to a principle roof or parapet wall.

(3) A flat roof shall be permitted only as a habitable deck enclosed by a continuous parapet or balustrade.

(4) Permitted roof materials for pitched roofs are:

- (a) Slate
- (b) Cedar Wood Shingles
- (c) Dimensioned Asphalt
- (d) Composite tile (slate)
- (e) Standing Seam copper or green anodized aluminum



Photos 6.3 - 6.6 Roof Styles and Materials

#### D. Facade Treatment and Facade Materials

(1) The architectural treatment of the front facade shall be continued, in its major features, around all visibly exposed sides of a building. All sides of a building shall be architecturally designed to be consistent with regard to style, material, colors, and details. Blank wall or service area treatment of side and/or rear elevations visible the public viewshed is prohibited.

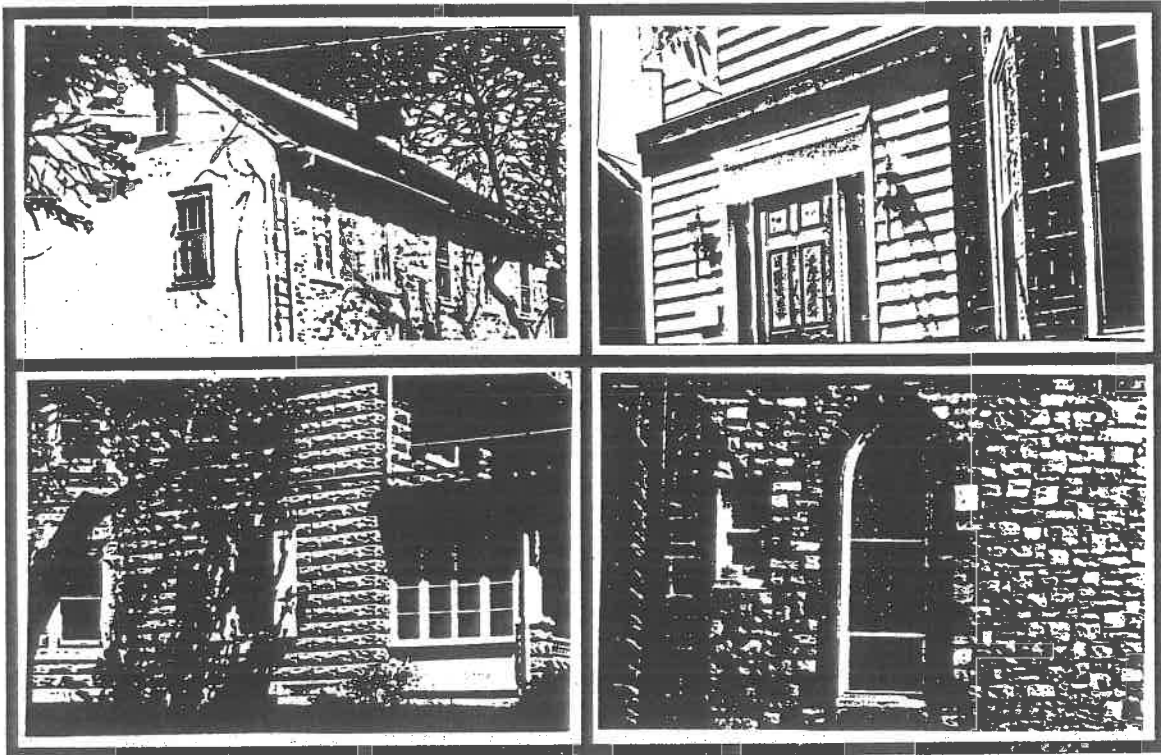
(2) Permitted facade treatment and facade materials for residential, commercial and/or mixed use buildings are:

- (a) Wood Clapboard
- (b) Simulated Clapboard
- (c) Brick
- (d) Wood Shingles
- (e) Indigenous Stone
- (f) Stucco
- (g) Decorative Block

(3) All residential buildings shall be raised a minimum of three (3) feet above the residential sidewalk line. Basement windows or crawl space entrances shall be visible at ground level, topography permitting. All visible facades shall have an articulated base.

The above grade foundation to the sill height shall be covered with either brick, fieldstone or brick patterned concrete.

(4) In mixed use buildings, Storefronts are an integral part of the building and shall be integrally designed with the upper floors to be compatible with the overall facade character. Ground floor retail, service, and restaurant uses shall have large pane display windows. Buildings with multiple storefronts shall be unified through the use of architecturally compatible materials, colors, details, awnings, signage, and lighting fixtures.



Photos 6.7 - 6.10 Facade Textures and Materials

#### E. Entry and Doors

- (1) All residences shall have their primary entrance on the street facade.

#### F. Windows

- (1) Solid metal security gates or solid roll-down metal windows shall not be permitted. Link or grill type security devices shall be permitted only if installed from the inside, within the window or door frames. Other types of security devices fastened to the exterior walls are not permitted.



Photos 6.11 - 6.18 Entries, Doors and Windows

### G. Porches and Stoops

(a) All residential units shall have either a porch, covered porticoes, or decorated entrance on the street facade of the building.

(b) Front porches shall be located on the facade facing the sidewalk, and may be wrapped around the side wall of a dwelling. The minimum porch size shall be six (6) feet deep from the front wall of the dwelling to the enclosing porch rail and ten (10) feet long.



Photos 6.19 - 6.22 Porches and Stoops

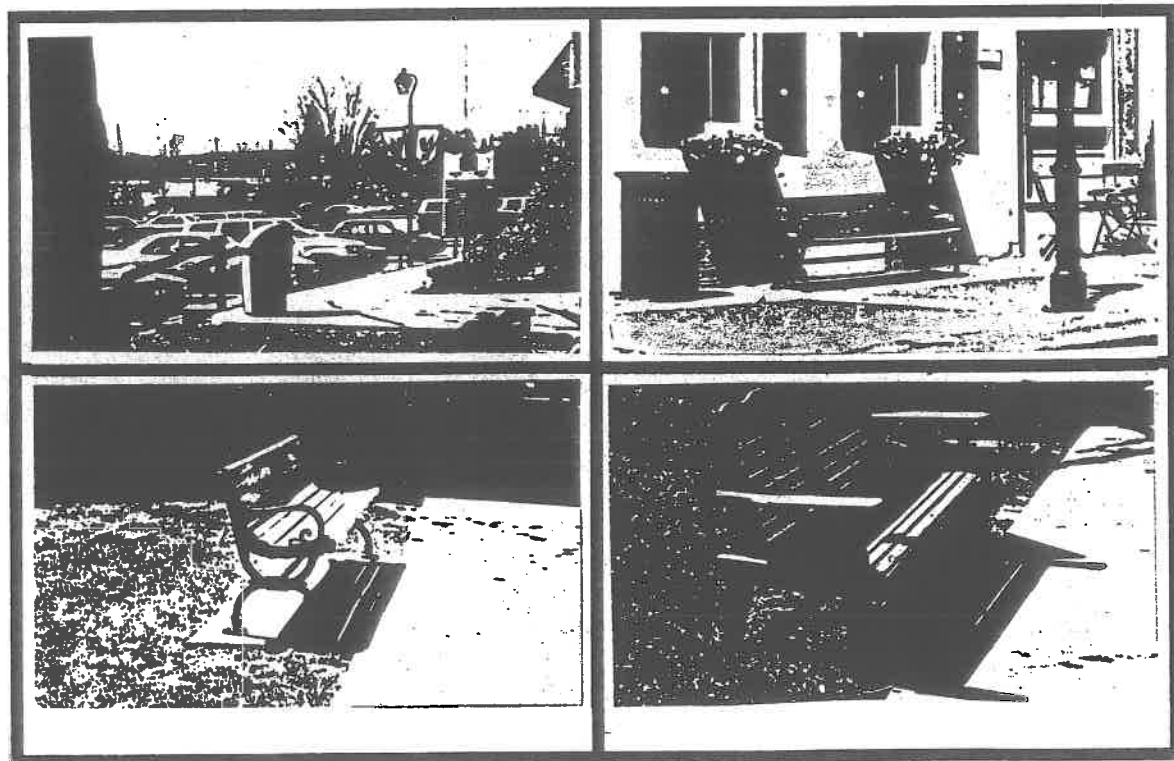
### H. Colors

(1) All buildings and roofs shall be designed to use primarily earth tones or colors of natural materials.





Photos 6.23 - 6.26 Gables, Dormers, Gutters and Chimneys



Photos 6.27 - 6.30 Street & Park Furniture and Lights

# Doylestown Corridor Study

A Study of the Easton Road/Route 611 South Corridor  
in Doylestown Township

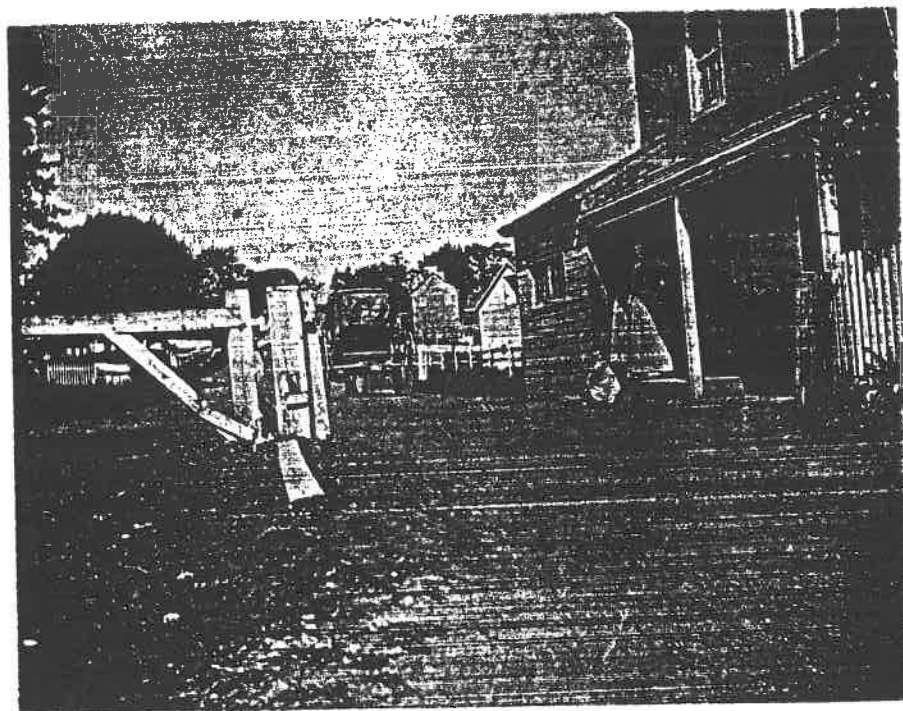
1992



Prepared for the Doylestown Township Board of Supervisors

Prepared by Lynn Froehlich, AICP  
Graphics prepared by  
Carter van Dyke Associates, Landscape Architects

The Tollhouse at Edison, where tolls were collected along Easton Road (now Route 611) in the days when the corridor was smaller and traffic was lighter.



---

## Doylestown Township Central Corridor Study

### **Purpose and Content of the Study**

The purpose of the study is to take a close-up look at the Route 611/Easton Road corridor and surrounding area in the southern part of Doylestown Township. This 1.5 mile stretch extends from the Neshaminy Creek, where it flows under Route 611, to the Route 202 bypass near the Doylestown Borough border.

The Corridor study looks at existing conditions:

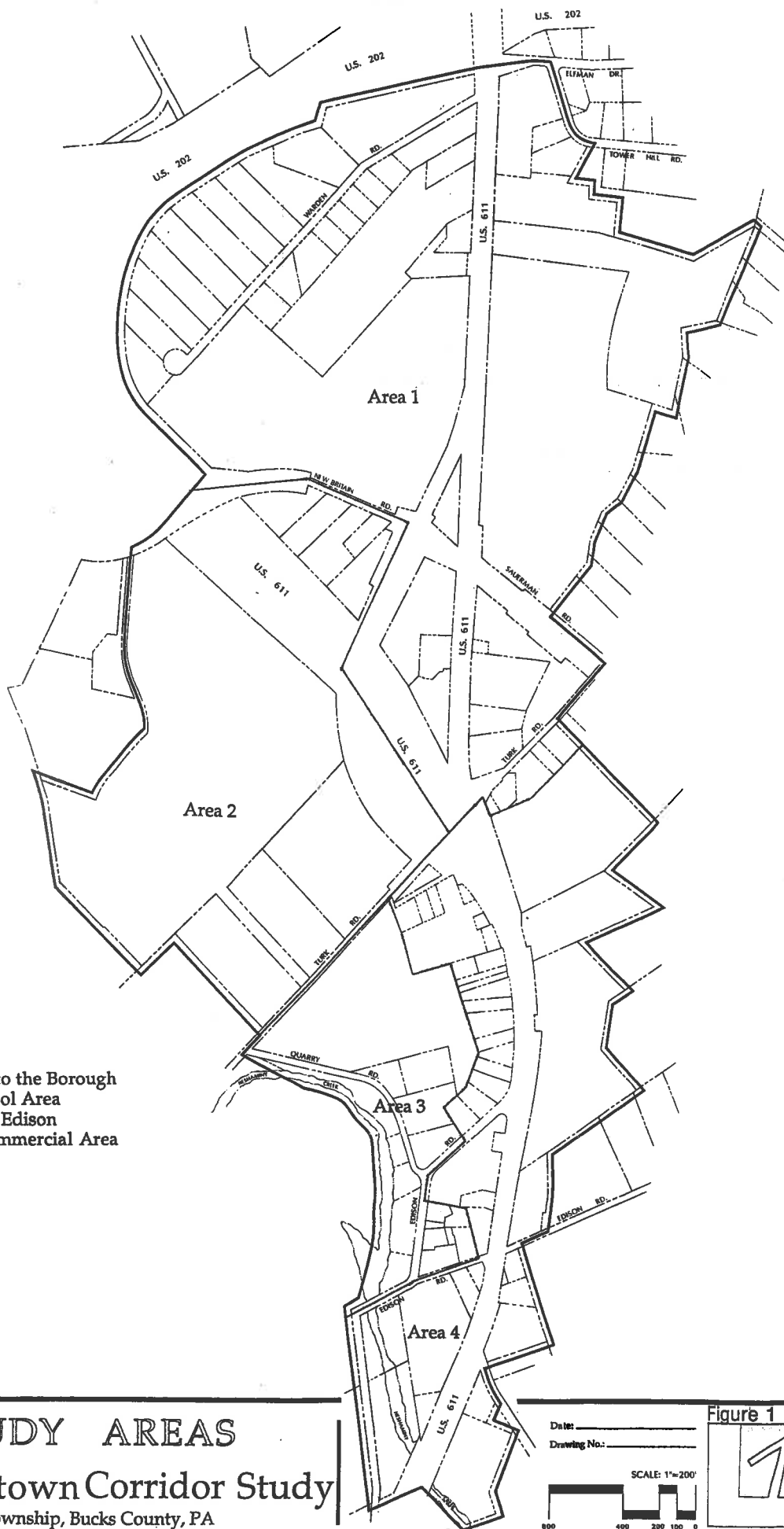
- Land uses
- Natural Features
- Constraints to Development
- Opportunities for development to meet township goals
- Public services and facilities
- Circulation

The Corridor Study makes recommendations dealing with:

- Future land uses on vacant properties
- Changes to developed areas
- Design and aesthetics in the corridor

### **Four Study Areas: Different Characteristics, Different Recommendations**

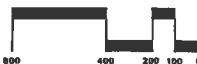
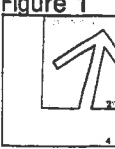
The corridor area, shown in Figure 1, contains four somewhat distinct subareas. The sections of the corridor have different characteristics leading to different recommendations. They are Area 1, Gateway to the Borough; Area 2, Kutz School Area; Area 3, Village of Edison; and Area 4, Route 611 South Commercial District.



Area 1 Gateway to the Borough  
 Area 2 Kutz School Area  
 Area 3 Village of Edison  
 Area 4 South Commercial Area

**CVDA**      **STUDY AREAS**  
**Doylestown Corridor Study**  
 Doylestown Township, Bucks County, PA

CARTEL VAN DYKE  
 ASSOCIATES  
 1000 Valley Forge Road, Suite 200  
 P.O. Box 2000, Doylestown, PA 18901  
 LYNN FRIEDRICH, AICP

Date: \_\_\_\_\_  
 Drawing No.: \_\_\_\_\_  
 SCALE: 1"=200'  
  
**Figure 1**  


---

## Area 1 Gateway to the Borough

**Characteristics:** This area begins at the point on Easton Road where Main Street divides from the Route 611 bypass and extends to the Route 202 bypass at the edge of Doylestown Borough. This area includes the Tabor Children's Services facility, a vacant property (owned by Tabor Children's Services on the other side of 611), an established neighborhood of single family residences along Warden Road, a mobile home park containing 16 mobile home units, several residences fronting on Easton Road, and a few buildings containing offices. Figure 2 shows existing land uses.

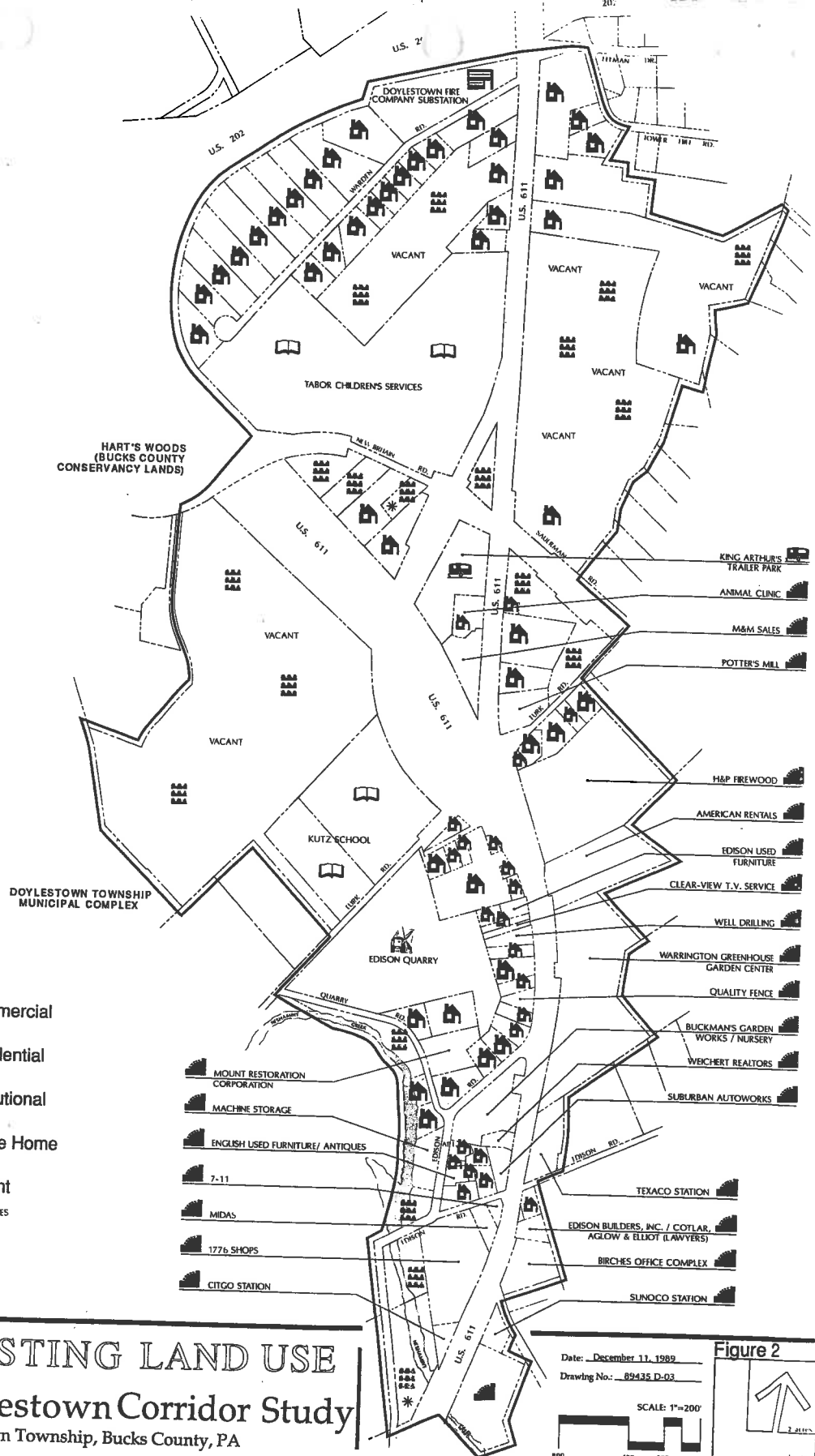
**Natural Features:** On the east side of Main Street, steep slopes, floodplains, and woodlands all constrain to some degree the type and intensity of development which can occur. A tributary of the Neshaminy Creek, which flows into the Neshaminy at Edison, lies at the rear of these properties, and its associated floodplain limits development potential.






Properties on the west side of Easton Road are influenced only by woodlands. Much of the wooded area is already developed for single family residences along Warden Road. The remaining woodlands are at the rear of the Tabor Children's Services property and on the vacant property immediately to the north. Figure 3 shows the wetlands, steep slopes, floodplains, and wooded areas through the corridor study area.

### **Constraints:**

**Access:** Because of the divided highway, access to most properties is limited. Several of the properties can only be reached by traffic going in one direction because left turns across the roadway are not possible.

**Mobile Home Park:** The mobile home park has existed at New Britain Road and 611 for many years, and, while it provides affordable housing for families, it does not live up to the appearance and housing quality standards for which the Township strives.

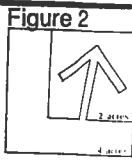
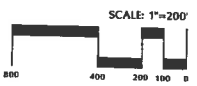


-  Commercial
-  Residential
-  Institutional
-  Mobile Home
-  Vacant
- \* UTILITIES

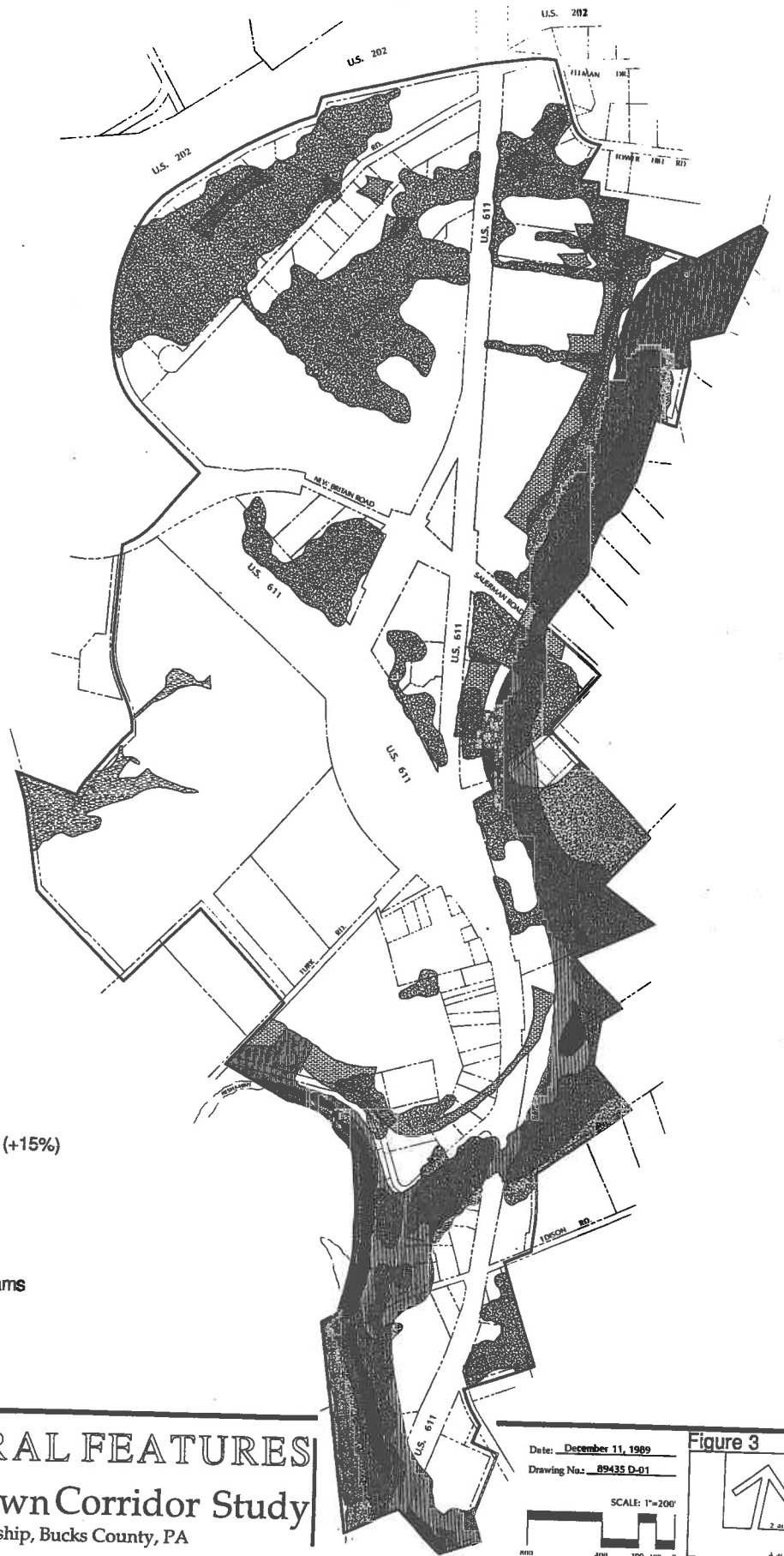
**CVDA EXISTING LAND USE**  
**Doylestown Corridor Study**  
 Doylestown Township, Bucks County, PA






CARTER VAN DYKE  
 ASSOCIATES  
 4000 Walnut Street, Suite 200  
 Philadelphia, PA 19104  
 Tel: 215-382-1000 Fax: 215-382-1001

Date: December 11, 1989  
 Drawing No.: 89435 D-03



**Figure 2**



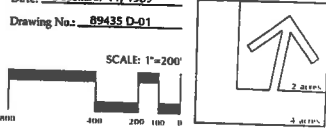
-  Wetlands
-  Steep Slopes (+15%)
-  Floodplain
-  Wooded Area
-  Ponds & Streams

**CVDA NATURAL FEATURES**  
 Doylestown Corridor Study  
 Doylestown Township, Bucks County, PA

Date: December 11, 1989  
 Drawing No.: B9435 D-01

SCALE: 1"=200'

Figure 3





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**Services:** Public sewers and public water supply are not currently available to any of the properties in Area 1. The Neshaminy interceptor may make sewer service available to the western side of the highway, but serving the eastern side will be costly. Similarly, public water may become available to the western side, but no plans exist for making it available to the eastern side of the highway.

**Opportunities:** The area contains several vacant parcels which can be used to enhance the Township. The future development can be guided so that the Gateway to the Borough continues to be a pleasant stretch of highway.

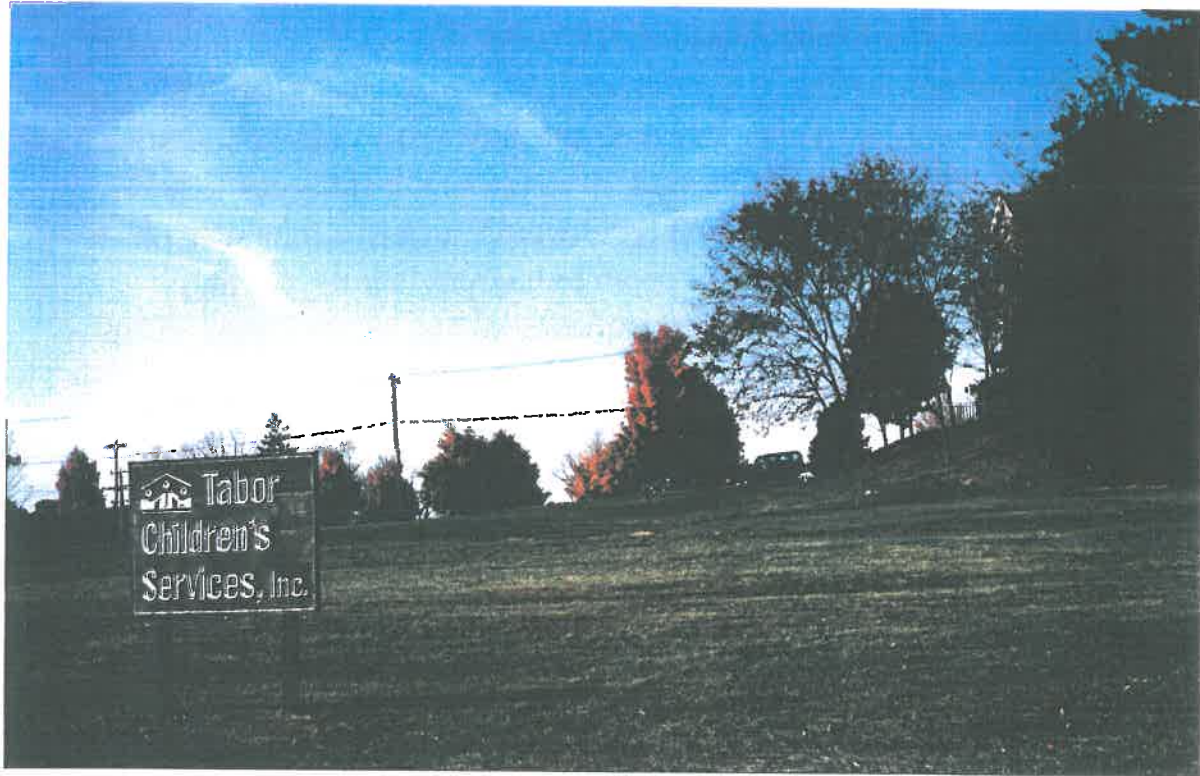
### **Recommendations for Area 1**

1. Maintain the "openness" of the roadway on the approach to the borough. The Tabor Children's Services buildings are about 200 feet from the road on the west side of the highway. Development, including parking, on the east side of the road should have a large setback to maintain this open feeling for people approaching the Borough from the south or entering the Township from the Borough.

2. Enhance the existing natural features by establishing a tree line along the road. Area 1 is one of the few areas in the corridor which retains some of the natural elements of the landscape. Figure 4 shows concept plans for the development of Area 1. It indicates that a tree row should be established along Easton Road in this area. This tree row should not be a dense visual buffer but should contain street trees which allow visibility at eye level to passers-by.

3. Encourage the continued use of the Tabor Children's Services property for a variety of institutional/office/educational uses which provide a valuable service to the community. Consider as a long-term goal the development of this area in a comprehensive manner with a mix of office/institutional/nonresidential uses along the highway, with residential uses toward Warden Road. Current planning philosophies would suggest that this area could be developed with a mix of uses, where offices and

Large setbacks on the Tabor Children's Services property should be mirrored on the opposite side of Easton Road to maintain a tree-lined roadway linking Doylestown Township and Doylestown Borough.



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institutions could function side by side and support each other. This long-term development option would include an office/institutional area, in an architectural style compatible with the central Bucks community.

4. Allow for residential development in the rear portion of the Tabor property, in a fashion similar to that which exists on Warden Road. This type of development would be compatible with the Tabor uses and with existing residential uses. It is assumed that such development could occur with on-site sewage disposal systems. The soil types would suggest a limitation on the use of on-site systems due to limited depth to bedrock, but the existing Warden Road residences, underlain by the same soil types, are served by on-site systems. This would provide some indication that on-site systems may be feasible in this area.

5. Continue to allow for the use of properties along Easton Road, between Sauerman Road and Turk Road, for residences and small-scale office use. There is some office usage now, along the western side of Easton Road. The buildings on the eastern side of this section could also be used for residences with accessory offices. Because this stretch of roadway is one-way and has limited access, retail uses would probably not be feasible. Current zoning would allow for more intense development for office uses in this area, and a series of residences with accessory offices designed to be compatible with the community might be accomplished. Offices with associated apartments might provide a source of much-needed rental units. A suitable design might incorporate office units with residential units on the second floor.

6. Mobile home development - This existing mobile home development will probably continue in its present use. Current zoning would allow redevelopment for office uses, but it is unlikely that this change can occur easily and it is not recommended that the Township initiate redevelopment. <sup>1</sup> The mobile home development provides affordable

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<sup>1</sup> In order for redevelopment to occur, the Township would have to show that the area is blighted. Funds from Community Development or other sources would have to be found to pay for purchase, clearance, and relocation of the families who reside there. Relocation expenses in the case of renters usually includes paying rent subsidies for five years. The process would be

Warden Road: the single-family nature of Warden Road and area adjacent to it should be maintained.



New development along Easton Road could contain residences and offices in a style consistent with surrounding areas, as in this example.

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housing for the families who live there, and it may not be in the interest of the Township or the residents to try to alter this.

7. Allow for office or light industrial use on the Tabor property (east side of Easton Road). This 27-acre parcel should be developed in a manner which preserves the openness of the corridor by encouraging a 100-foot setback from the roadway and which preserves the natural features of the site. Presently zoned for townhouse use, the property has been considered for both townhouse and apartment development. However, the site constraints (natural features at the rear and slopes elsewhere) make it difficult to develop where the buildings are spread out over the site. Figure 4 shows a development concept for the site using one large and one small building in which the activities are concentrated. Such a large structure, which would have the mass and form of a large barn, could be situated on the site and would sit back from the road, much like the Tabor building on the other side. (See photograph of the type of building proposed which follows.) The height could be increased somewhat to allow for more floor area with less building coverage. This type of facility could be used as a rental office building or by a single large corporation. The sketch in Figure 4 shows approximately 87,600 square feet of office space and 449 parking spaces, enough to meet the current township standards for office parking. The small building is one-story and contains 9,000 square feet. The large building contains a 52,400 first floor and a 26,200 square foot loft area.

This represents a departure from the planning and zoning concepts which have been in place for this area for many years. Because of the site constraints due to access and natural features, it is recommended that a nonresidential concept be considered.

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prohibitively expensive. Furthermore, the human cost of dislocating families, even to possibly better physical conditions, would be significant.



CVDA CONCEPT PLAN  
 Doylestown Corridor Study  
 Doylestown Township, Bucks County, PA

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 DOYLESTOWN, PA 18901  
 TEL: 610-341-1000  
 FAX: 610-341-1001

Figure 4

The property on the east side of Easton Road: the front of the property is flat but slopes, floodplains, and woodlands at the rear affect the site planning decisions.



Example of a single structure which complements traditional architecture: this office building, located elsewhere in Bucks County, is an example of what could be accomplished on the east side of Easton Road.

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## **Steps Needed to Implement Recommendations**

**1. Zoning for Tabor property (east side) should be changed from R2b to new district which allows for offices or research uses of the type shown on the concept plan.**

**Setback should be established at 100 feet for all development, including parking, to maintain the openness along Easton Road.**

**To encourage this type of building, a bonus in terms building height should be permitted as a way of limiting site disturbance and preserving the 100 foot setback.**

**A special district could be created which would embody the design standards deemed appropriate for the area.**

**2. Zoning for Tabor Home property and for the adjacent properties along Easton Road should be revised to allow for residential development as well as a mix of office/nonresidential uses in a unified manner.**

**3. Establish tree-lined boulevard effect by requiring/encouraging street tree planting.**

**4. Coordinate traffic improvements and entrances to the two Tabor sites on either side of Easton Road.**



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## Area 2 Kutz School Area

**Characteristics:** The dominant features of this area are Kutz Elementary School, the Route 611 bypass, and a vacant parcel on the west side of the 611 bypass of approximately 54 acres. The Route 611 bypass divides the school and the vacant land from a few residences located on New Britain Road

**Natural Features:** The area has fewer resource restrictions due to topography than Area 1. The vacant parcel has an area of wetlands on the western edge. The vegetation on this parcel appears to be successional, with a large number of small trees (maples, dogwoods, etc.), some mature trees, and dense successional vegetation such as multiflora rose. This pattern is typical of areas which were once cultivated and which have been allowed to revert to natural vegetation.

The site is adjacent to a 19-acre parcel owned by the Bucks County Conservancy and known as Hart's Woods. This area is protected from disturbance by conservation easements and restrictions but is available for passive recreation.

**Constraints:** Access to the vacant parcel is difficult because of the location of the bypass on its northern boundary. There is access from New Britain Road and from Turk Road, but this is not direct or easy access. When traveling in a northbound direction on Easton Road, there are two possible routes to this site. It is possible to turn left onto Edison Road from Easton Road and take Quarry Road through the village of Edison to Turk Road. The alternative route would be to travel north on 611, taking the Doylestown exit onto Main Street, turn left at New Britain Road, and enter from New Britain Road. Travelling south on Easton Road from Doylestown Borough, the site can be reached by way of either New Britain Road or Turk Road by turning right at either of these streets.

There is no public sewer or water service to this area now, but the Neshaminy interceptor system will be completed in 1992, and connections

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can be made by way of a pipe along Turk Road. Public water supply will be available to the north of the site and could probably be extended to reach the site.

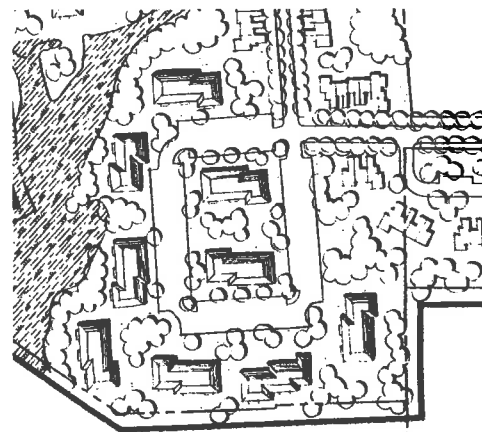
**Opportunities:** The vacant tract provides an opportunity for the Township to allow for residences on a site which has many benefits. It is adjacent to the elementary school, putting it within convenient walking distance of the school. On the other side, the site is bordered by the Township building and the Township park site. It is relatively isolated from other residences because of the bypass, the school, and the Township property. It is possible to create a convenient and pleasant neighborhood on this site if it is properly planned and designed.

### **Recommendations for Area 2**

The area is presently zoned for R-1 development. The Township has engaged in many discussions about the future development of this area, based upon a Bucks County Planning Commission recommendation that it be used for affordable housing, and a landowner's application for a zoning change. Throughout these discussions, the objectives of the Planning Commission have been clear:

1. Provide for safe access to the site, without creating a difficult or dangerous traffic situation.
2. Ensure the preservation of large areas of open space which protects the wetlands and older vegetation on the site and which would provides a decent transition between the residential area, Hart's Woods, and the Township property.
3. Allow for development which will not adversely affect the nearby school.
4. Allow for development which would be compatible with the surrounding neighbors.

Vacant land in Area 2 (Kutz School area): Land is relatively flat and abuts township properties; development should occur in a manner which preserves large areas of open space and which takes advantage of the terrain by incorporating a traditional, rectilinear street pattern.



---

5. Allow for development which would enhance and add to the Township's open space adjacent to the Township building on Wells Road.

With these guidelines in mind, the following recommendations are made for this area.

1. Allow for residential development with a mix of unit types at a density somewhat higher than that presently permitted under R-1 zoning, in the area of four dwelling units per acre. Allow for a mix of unit types, including small lot single family housing and multi-family housing.

2. Provide pedestrian connections between this neighborhood, the school, the township complex, and the Tabor Home area.

3. Provide a setback from the Route 611 bypass and plant a row of trees along this frontage to reduce the effects of noise and air pollution on the residents of the area.

4. Protect the wetlands on the property; and open space in this area should supplement the park area to be established on the adjacent township property.

5. Take advantage of the relatively flat site to create a "traditional" street pattern, with a rectilinear street layout and green space between units. Streets should be tree-lined.

6. No access should be permitted to this site from the Route 611 bypass because of safety concerns. Adequate access can be provided by means of Turk Road and New Britain Road, with only one entrance along each of these two roadways.

7. Any development scheme will require the improvement of New Britain Road from Easton Road to the edge of the study area.

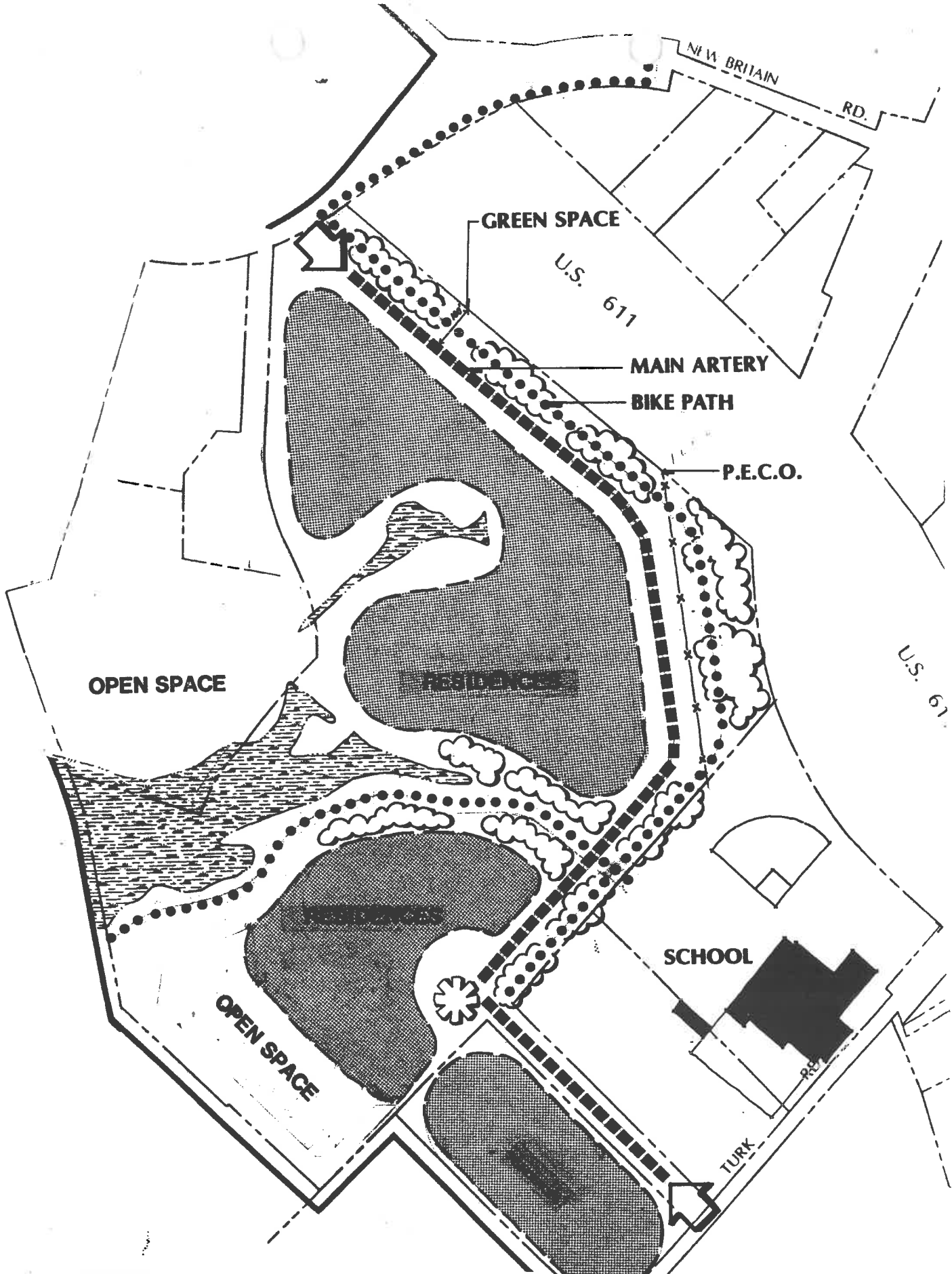


Figure 5

# CONCEPT PLAN

Doylestown Corridor Study  
 Doylestown Township, Bucks County, PA

CARTER VAN DYKE  
 ASSOCIATES  
 Planning, Design, Research and  
 Construction  
 LYNN FRIEDRICH, AICP

---

### **Steps Needed for Implementation**

Revise the zoning requirements for the vacant portions of the study area to: allow for a density increase; allow for a mix of housing types; require the set-aside of open space adjacent to the township open space equal to fifty percent of the site; provide for adequate setbacks from the Route 611 bypass.

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## Area 3 Village of Edison

**Characteristics:** The Village of Edison, an historic village once famous as a manufacturing center because of the mills and factories which located here on the Neshaminy Creek, contains a mix of residences and commercial uses. The village is not on Easton Road itself, but is off the highway on Edison Road and Quarry Road. There exist a few historic structures -- most notably the old Bridge Point School which has been converted for residential use. The tracks from the old trolley which crossed the Neshaminy by means of a stone bridge can be seen in the pavement of the street. Some of the larger buildings and barns are used for other purposes -- an apartment building, an antique dealer, and a building maintenance company are located in the village. Along the western edge of the village flows the main branch of the Neshaminy with surprising tranquility, only a few hundred feet from the heavy traffic on Easton Road. There is no room for new development in this area.

Also contained in the Village is the Edison Stone Quarry, located on Quarry and Turk Roads.

**Natural Features:** The village was established along the banks of the Neshaminy which provided power for the mill located there. The stream and its floodplain affect most of the village area. A small tributary of the Neshaminy joins the main branch near the intersection of Edison Road and Quarry Road. The stream valley is wooded.

**Constraints:** The lack of vacant land allows for no new development potential. The land uses, though mixed, seem to exist in relative harmony, much as they would have in the early days of the village. The major discordant note seems to be the truck traffic from the quarry. Quarry trucks travel to and from Route 611 along Quarry Road and Edison Roads, both of which are narrow, winding roads. There is no public sewers or water service and no plans to provide it to this area.

Postcard view of Edison, 1906



BUCKS COUNTY (PA.) VIEW'S.  
Arnold Bros., Printers, Rusland, Pa.

OLD TURK'S HEAD TAVERN, NEAR EDISON.

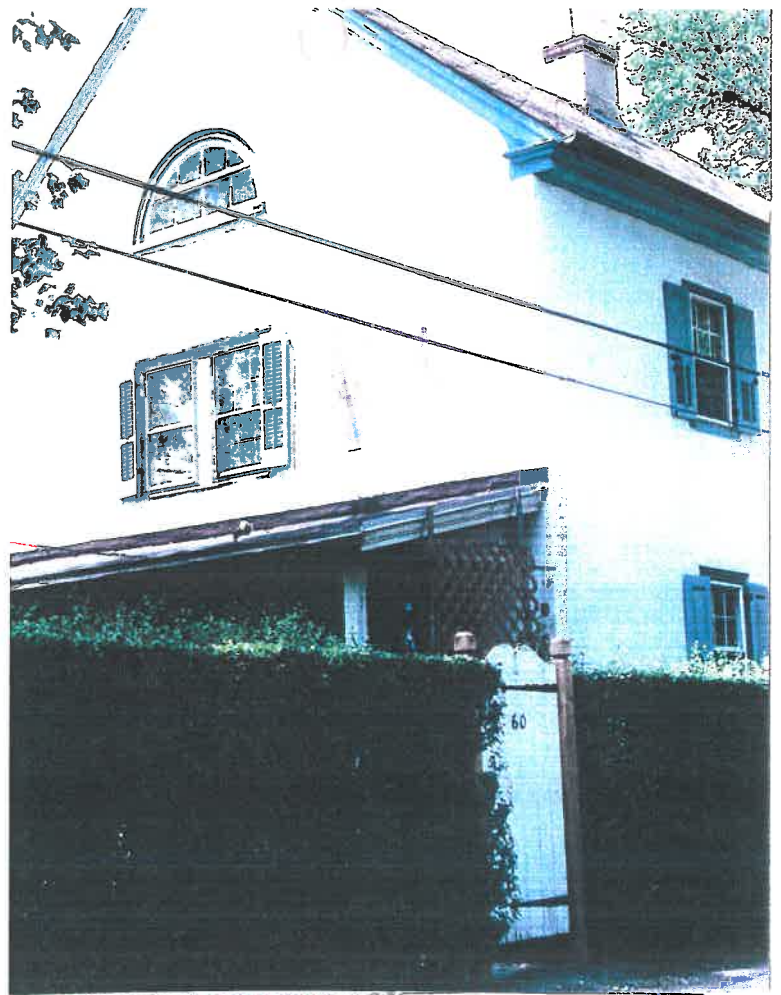
*(Houghville). 1906.*

Village house along Quarry Road in Edison.





The former Bridge Point school is now a residence.



Mixed uses coexist in Edison, although the village is primarily a residential area.

---

**Opportunities:** The Township can encourage the continuation of the mixed uses in the village. Edison is probably the best example of the village form left in Doylestown Township, and the mix of residential types with nonresidential uses should be encouraged to remain.

The quarry is a needed commercial establishment, providing stone for construction and road projects in the area.

### **Recommendations for Area 3**

1. Quarry - No change is recommended.

2. The Village area is presently zoned – and has been zoned for many years – as a commercial area. Residences are now nonconforming uses. It is recommended that this area be considered for rezoning to allow for the mix of uses which currently exists. It should not be Township policy to encourage the conversion of residences to commercial use; Township policy should allow for and encourage the mix of uses which works well and which helps retain the village character. The village standards prepared by the Bucks County Planning Commission as part of the Village Planning Handbook should be used as guidelines. A new village center zoning district should be created which can be applied here which would encourage a compatible mix of residences and existing nonresidences.

3. Truck traffic - It will be difficult to get trucks heading north on 611 toward the quarry site to use roads other than Edison Road/Quarry Road to reach the quarry. Trucks leaving the quarry, however, and heading south on Route 611 could be encouraged to use Turk Road to 611 south rather than traveling through the village to get to Route 611.

4. Physical Improvements - The Township has committed funds in 1991 to physical improvements to the area for village-type street lighting and street improvements. This will enhance the village character. A study commission on Edison Village was formed by the Township in 1991 and will provide advice on these improvements, based on their assessment of village history and goals for the future.



The Neshaminy Creek at Edison: the creek is used for recreation by fishermen and picnickers.

This stone structure was the first Doylestown Township Building. Now leased from the County, the land on which it sits can provide an access point to the Neshaminy Creek at Edison village.



The trolley tracks in the roadway at Edison provide a reminder of the trolley line which connected Edison with Philadelphia.



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5. Provide a public access to the Neshaminy Creek near the former bridge. This section of the creek is close to the township population center and is now frequently used by residents. If a more formalized access area were developed, it would enhance the area and provide recreational opportunities. There are four parcels of land in the area which are owned by Bucks County, and these could be developed in a cooperative fashion with the county.

6. Consideration should be given to the connection between Edison Road and Route 611. This is an unsignalized intersection where making a left turn onto Route 611 is extremely difficult. The intersection should be examined to determine if this entrance should be closed or made one-way onto Edison Road to eliminate a potentially dangerous situation. Access to this area can easily be accomplished by way of Edison-Furlong Road and Quarry Road.

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## Area 4

# Route 611 South Commercial Area

**Characteristics:** This section of Route 611 lies between the Neshaminy Creek crossing at the southern end and the beginning of the Route 611 bypass at the northern end. It could appropriately be called a commercial strip, and it has many of the attributes associated with commercial strips: an "uncoordinated" approach to the design, location and planning of improvements; numerous signs; few or no pedestrian improvements; above-ground utilities; little landscaping; and poorly delineated, closely spaced driveways. <sup>2</sup> Significant steps have been taken in the area containing the 1776 shops and the 7-11 market to coordinate driveways and provide for planting strips, helping to eliminate many of the undesirable aspects of strip commercial development.

The eastern side of Route 611 in this area is almost completely devoted to commercial uses, beginning with the Sunoco Service Station at the southern end and ending with the H & P Firewood sales facility at the northern end. In contrast, the western side has buildings which are retained as residences. Many of those which are commercial have been converted from residential to nonresidential use. Because the area has developed through piecemeal conversion of residences to commercial uses, there has been little opportunity for coordination and little control over the cumulative effect of many small-scale projects.

Many of the commercial enterprises are highway-oriented, providing goods or services which one would not look for or find in a town setting or even in a typical suburban shopping center. Examples of this are the two garden centers, American Rentals, firewood sales, used car sales, used furniture sales, and service stations.

**Natural Features:** Although the Neshaminy Creek and its tributary exert a major influence on the area, they are barely visible. People traveling through the area or even stopping at the stores along the corridor may be unaware of

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<sup>2</sup> American Planning Association, Designing Urban Corridors, 1989

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the creek and its floodplain because it flows so far below the level of the road and is hidden in the trees. The tributary which enters the Neshaminy at Edison Road originates in Doylestown Borough and flows along the rear of many of the properties in Area 4, on both sides of Route 611. Along its banks the slopes are steep and the floodplain is wooded.

**Constraints:** The slopes and floodplain are constraints to the use of some properties in this area. Without the flexibility of using the rear portion of properties, some of the standard corridor design recommendations (such as placing parking lots in the rear) become impractical. Some properties are almost too narrow to use and have remained undeveloped.

The numerous small properties serve as another constraint. As each property owner decides individually how to use his property, the possibility for coordination of development and establishing a coordinated appearance diminishes. Because much of this area is developed, the opportunities to improve design and appearance through the development process are reduced.

Access from both sides of the highway, though technically feasible for a large part of Area 4, is in fact difficult due to the heavy traffic volume. Although commercial establishments along here are highly visible, they are not highly accessible from both directions.

The properties at the upper end of this area (those opposite American Rentals and Warrington Greenhouses) are not very visible because of the curvature of the road. People traveling south on Route 611 are concentrating on the merger of the two roadways and have a limited view of these properties. It is perhaps for this reason that the properties have remained in residential use, despite a long-term commercial zoning pattern.

One of the major obstacles to development has been the lack of public sewers and public water to this section of the corridor.

**Opportunities:** The opportunities for improving the corridor will occur mainly during the process of redevelopment or conversion from one use to

Numerous driveways onto the high-volume highway are confusing to motorists and are dangerous.



Coordinated driveways for the 1776 Shops, Midas, and the 7-11 market make circulation safer and clearer.





Many of the commercially-zoned buildings on Route 611 have poor access and limited visibility, making commercial use difficult.



Overhead utility lines and lack of adequate landscaping detract from corridor appearance.



Dramatic changes in grade along the stream corridors and narrow lots widths make it impossible to implement some site design changes, such as rear parking, increase setbacks, landscaped areas, and alternative entrance drives. Here, parking is placed at the rear of an office building.



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another. The natural course of events would suggest that the residences in this area will eventually be converted to nonresidential uses. Some of the underutilized parcels or seasonal businesses may be converted to other uses. However, the constraints of visibility and access make it difficult to predict or recommend a total conversion to commercial uses. The continuation of residential usage should perhaps be facilitated by making residences permitted uses in the zoning ordinance. Some of the residential structures appear to contain more than one unit. It would be appropriate to allow for conversions of larger structures for more than one dwelling unit.

#### **Recommendations for Area 4**

The recommendations are based on the goals of improving corridor appearance and on protecting the safety of residents and travellers. The area is not envisioned as having a pedestrian orientation. It is clearly a major arterial road whose function is carrying vehicular traffic. Its role as a route between points and as a commercial area are often in conflict. The road has to carry large volumes of traffic quickly, yet the commercial establishments need people to stop, creating disruptive turning movements. The recommendations are aimed at trying to minimize this conflict.

1. Limit the points of access along Easton Road by placing controls on curb cuts. This should be accomplished by:

- requiring a minimum lot frontage in order to be converted to commercial use;
- providing zoning bonuses for properties which develop jointly using shared driveways;
- limiting the number of driveways per property
- requiring land development plans which will allow for future connections between adjacent properties.

2. Require all conversions, renovations, and expansions to go through the a zoning and land development application process. <sup>3</sup>

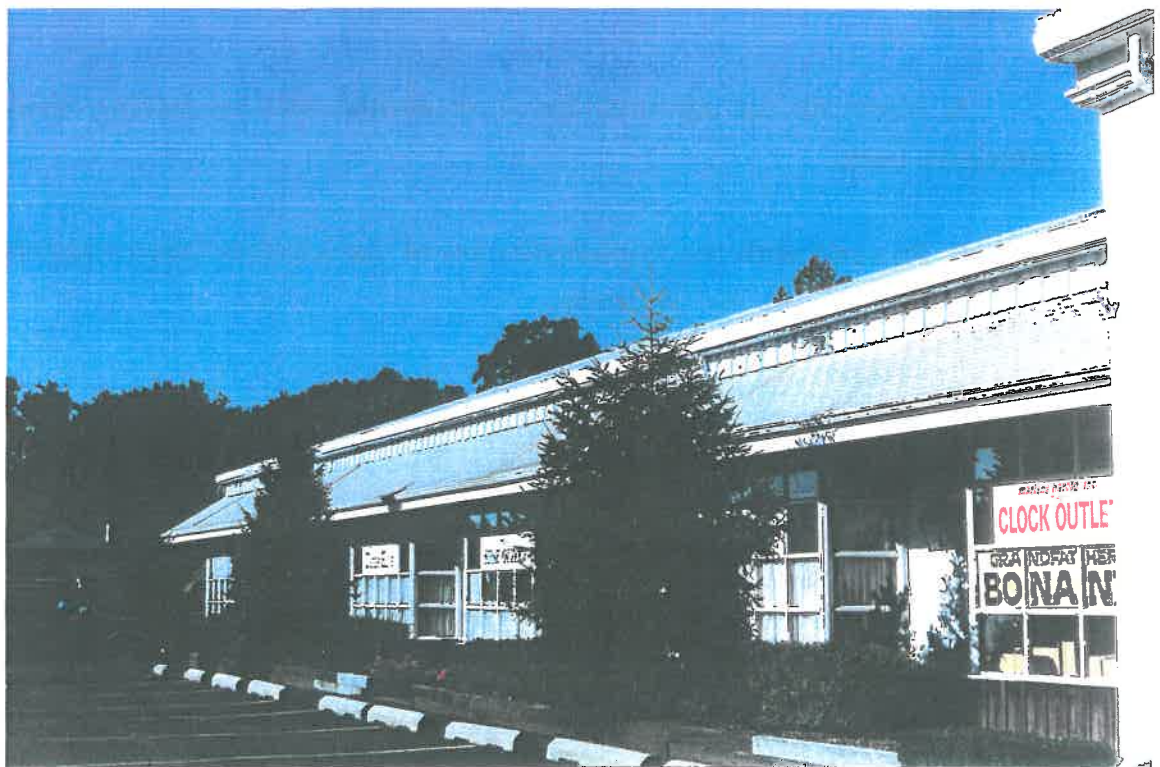
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<sup>3</sup> The Pennsylvania Municipalities Planning Code allows for special zoning requirements in areas affected by major thoroughfares and their intersections. MPC Section 605.(2) (i)

Larger setbacks, where possible, allow for landscaping and buffering which provide for a better view from the road, a clearer definition of where driveway entrances are, and a more pleasant shopping environment on the store side of the buffer.



Trees, even in narrow planting strips, will improve corridor appearance.



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3. Offer development incentives to undertake site improvements. For example, allow for the elimination of side yard setbacks for properties which propose to coordinate their driveways and parking (see example).

4. Encourage any nonconforming signs to be brought into conformance with ordinance standards. Consider the adoption of a special sign style for the corridor.

5. Require all conversions or new uses to establish planting areas and street trees along the highway.<sup>4</sup> The landscaped areas help to identify where driveways exist and provide an improved appearance to the corridor.

6. Where there is no opportunity to require that the landowner install landscaping (that is, when no plans are proposed or permits sought), the township should consider installing trees. This could be linked to a township reforestation policy, where developers who are required to provide tree replacements could contribute to a tree planting program along Easton Road.

7. Allow for light industrial and office uses in this area. These uses may fit well into the highway corridor, would create less traffic and fewer turning movements, and could enhance the appearance of the corridor if properly designed.

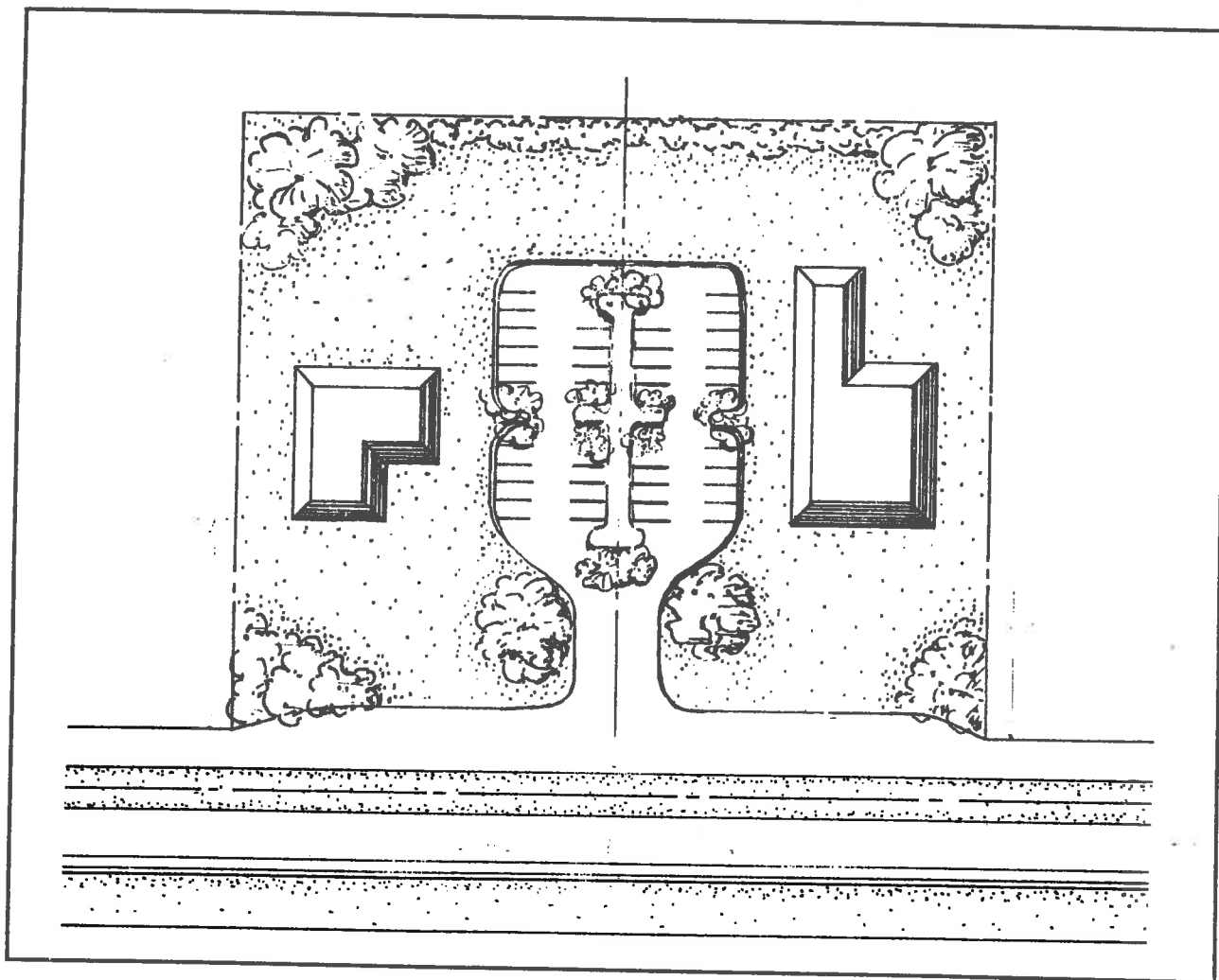
8. Allow for the continuation of residential uses by making residences permitted uses.

9. Proceed with the implementation of the left-turn lanes suggested by the Township-Wide Traffic Study.

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<sup>4</sup> The Warrington Township Growth Management Plan, now in draft form, has recommended that Route 611 in Warrington be developed as a tree-lined boulevard. While the physical limits on this stretch of Route 611 preclude a wide boulevard with sidewalks, the concept of a tree-lined Route 611 could be continued into Doylestown Township.

Shared driveway and shared parking for two buildings on two individual lots can be encouraged through zoning incentives and changes to the side yard requirements where shared facilities are planned.



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10. Consider requiring a minimum tract size in order to convert to commercial usage as a way of limiting the piecemeal, haphazard commercial growth on the corridor.

The Route 611 corridor should be made as inviting and hospitable as possible. It can be an exciting commercial area, benefiting the township and its residents and serving as a foil to the quiet residential neighborhoods surrounding it. Though few changes can practically be instituted, those dealing with landscaping, signs, and driveway access can be made to improve appearance and safety.

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**APPENDIX**  
**Zoning Changes**  
**Recommended to Implement Planning Recommendations**





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## Introduction

The following section provides a summary of the specific recommendations made in the Corridor Planning Study and the zoning amendments which would be needed to implement those recommendations.

Some Planning Recommendations will have to be implemented in ways other than zoning changes (example: tree planting along Route 611). Some zoning amendments proposed have logical linkages to other amendments. Specifically, the changes proposed in Area 1 (Gateway) and Area 2 (Kutz School) have a logical connection in that the higher density designation is shifted from one area to another. Other proposed amendments, such as the creation of a village center district for Edison, can stand alone.

### Brief Summary of Major Recommended Changes

1. Properties along both sides of Easton Road in the Tabor Home area should be rezoned to allow for office/research/institutional uses. This involves a modified C-3 district which is new and designed for this area.
2. Vacant properties near Kutz School should be rezoned to encourage a mix of higher density housing types and a higher proportion of open space for township use. This is accomplished by changing the R-2 district requirements and applying it to certain properties.
3. A village center district should be created at Edison to allow a mix of residential and other uses; area is now zoned as a commercial district and residences are nonconforming uses.
4. Make minor adjustments to the C-1 district to apply better development standards to commercial uses along Route 611. Properties now included which are located in residential areas or in floodprone areas should be removed from the commercial C-1 district and rezoned for residential use.

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### **Major Zoning Recommendations for Area 1: Gateway to the Township**

Revise zoning for Tabor properties and a few adjacent properties to encourage unified development of office/professional uses which protect the character of the gateway to the township and the natural features of the area.

This would involve a map change and a text change. The text change is designed to protect current uses at the Tabor Home and to encourage new uses in accordance with our assessment of the vacant parcel on the east side of Easton Road. The new district would include standards requiring a 100-foot setback; limited uses; a large minimum lot size to require unified development; preservation of natural features; and relatively low building coverage allowed.

The intent is to provide for professional offices, community institutions, and related uses on large tracts which will enhance the central area of the township along Route 611 and preserve the appearance and safety of Route 611. Development should be planned in a unified manner.

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## **Zoning Amendments Recommended for Area 2 - Kutz School Area**

1. Allow for residential development with a mix of unit types at a density higher than that presently permitted under R-1 zoning. Allow for a mix of unit types, including small lot single family housing and multi-family housing. This should be accomplished by changing the R-2 zoning standards and by rezoning a portion of land from R-1 to R-2.

The purpose of the revised R-2 Residential District is to allow for higher density and multi-family development in suitable areas where public services are available. The regulations are designed to foster a mix of housing types, a unified planned community, and greater preservation of open space for recreational or open space uses. A fifty percent open space requirement is recommended, with a maximum gross density of four dwellings per acre.

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### **Zoning Amendments Recommended for Area 3: Edison Village**

The Village area is presently zoned as a commercial area. Residences are now nonconforming uses. It is recommended that this area be considered for rezoning to allow for the mix of uses which currently exists. The village standards prepared by the Bucks County Planning Commission as part of the Village Planning Handbook have been used as guidelines to encourage a compatible mix of residences and nonresidences.

The purpose of the VC Village Center District is to encourage a continuation of the established development pattern in the township's traditional villages. The minimum lot size should be 10,000 square feet to reflect existing development; accessory home offices should be permitted uses.

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## **Zoning Amendments Recommended for Area 4 - Route 611 South**

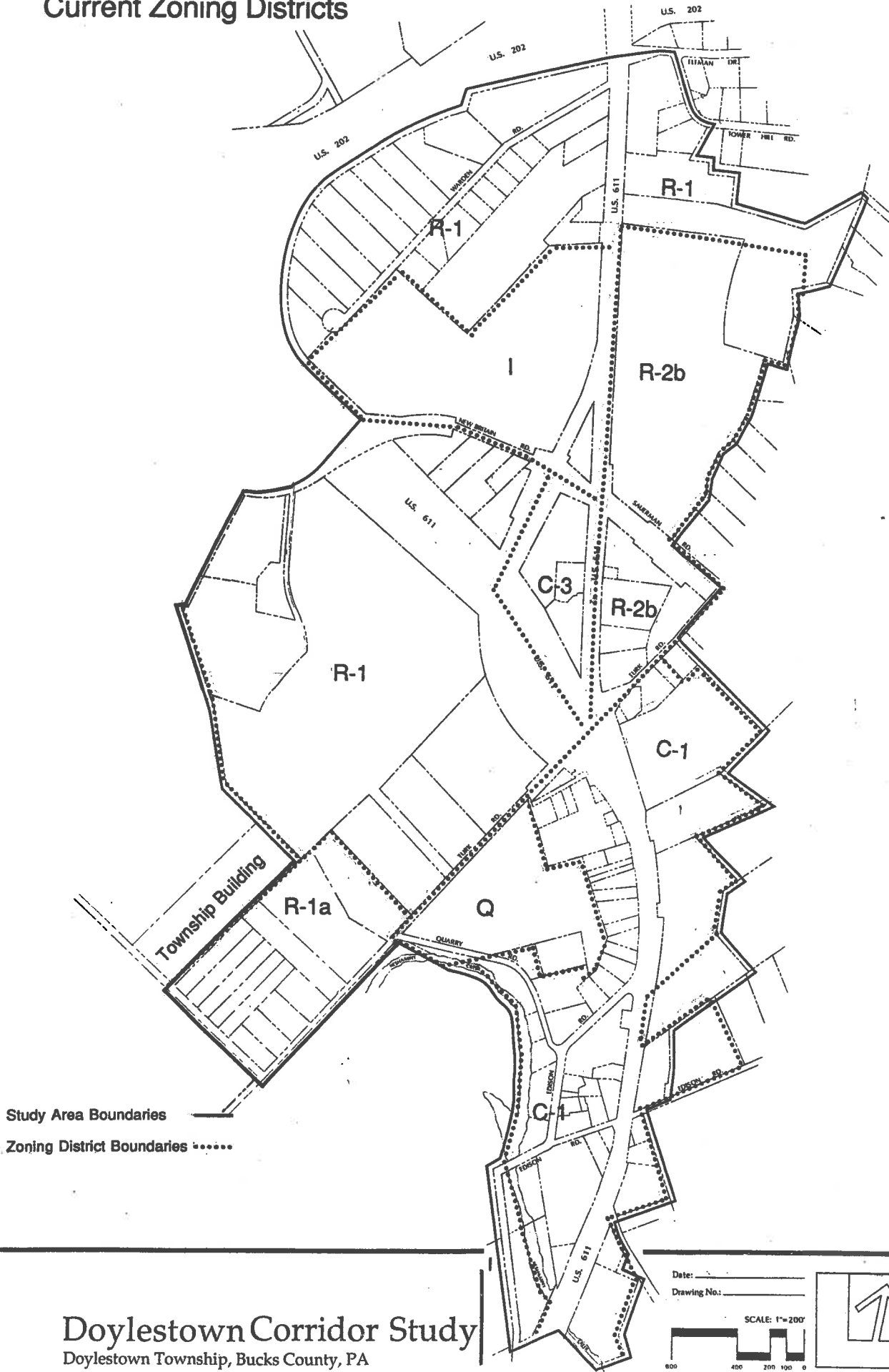
These amendments address the issues of curb cuts and parking area design, as well as the review process for commercial conversions. It is also suggested that residences be permitted uses.

The changes to be made are a modification of the C-1 district which encompasses this area. Minor map changes are recommended: the rear of some properties which fall within floodplains should be removed from the C-1 district; and several existing residences along Turk Road near Easton Road should be rezoned from C-1 to R-1 to reflect their residential nature.

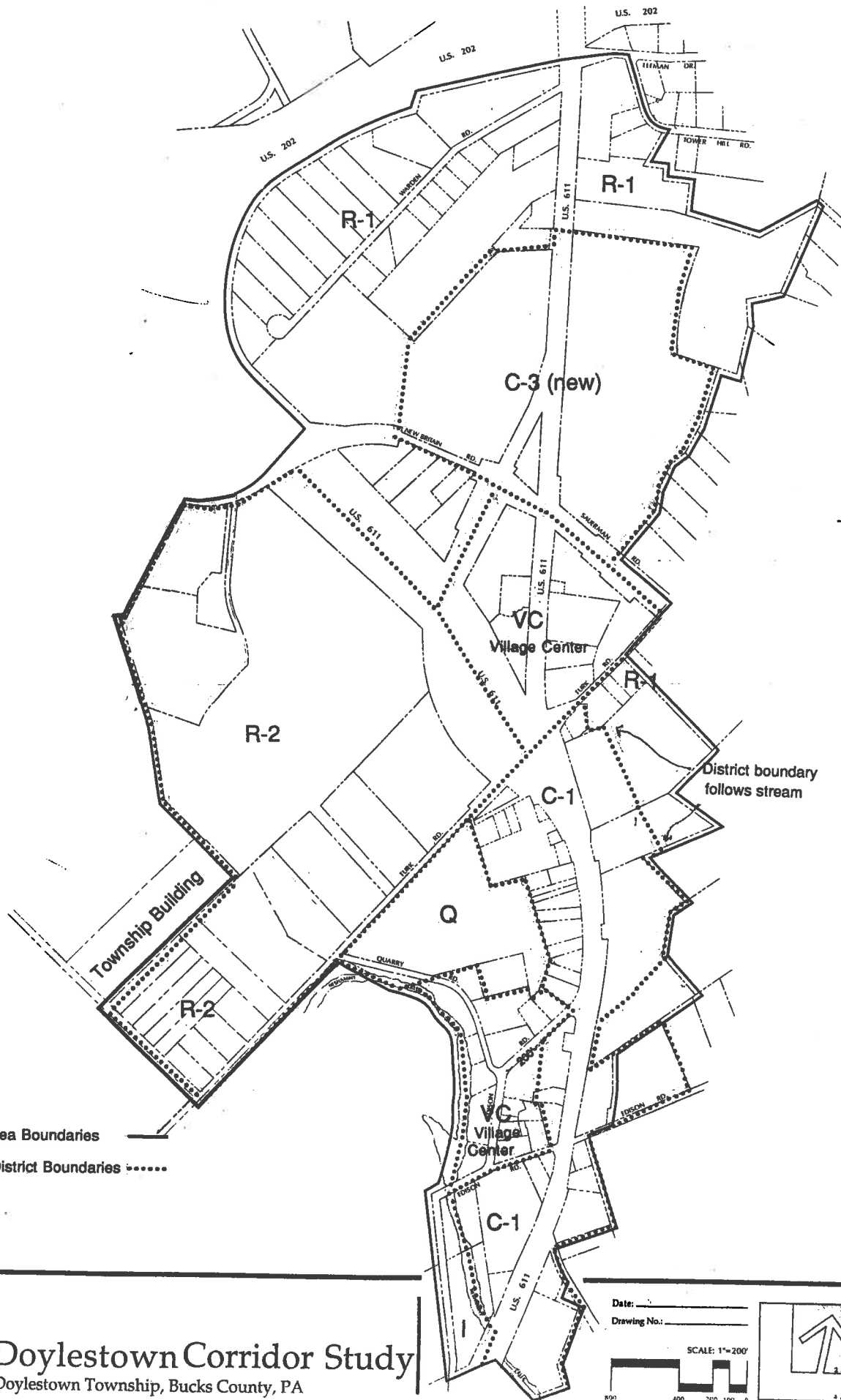
The intent of the C-1 Commercial District is to provide for general highway commercial services in areas where commercial activities predominate and to accommodate existing residential development. The district requirements are designed to encourage development which will protect traffic safety and enhance community appearance.

It is recommended that zoning permit applications for new nonresidential uses or conversions from residential to nonresidential uses be reviewed by the township Planning Commission and Board of Supervisors so that issues relating to driveway configuration and land development can be addressed.

# Current Zoning Districts



# Proposed Zoning Districts



**RECOMMENDED ZONING AMENDMENTS (Refer to Doylestown Township Zoning Ordinance for complete and current zoning ordinance requirements.)**

**Create a new C-3 District for Area 1, Gateway**

**C-3  
Office/Professional District**

**§ 175- Intent**

The intent of the C-3 District is to provide for professional offices, community institutions, and other related uses on large tracts which will enhance the central area of the township along Route 611 and preserve the appearance and safety of Route 611. Development should be planned in a unified manner.

**§ 175- Permitted Uses**

Buildings may be erected or altered, to be used either in whole or in part, and a lot may be used or occupied for any of the following uses and no other, provided that such uses shall comply with such regulations as yard, lot sizes, lot width, building area and heights, impervious surfaces, easements, buffer yards, off-street parking, and other provisions as specified herein.

**A. Uses by Right** Any of the following uses shall be permitted provided the regulations of this ordinance have been met:

- A-1 Agriculture and Horticulture
- C-2 School
- C-5 Recreation Facility
- C-8 Private Organization
- C-10 Day Care Service
- C-11 Nursing Home
- D-1 Office
- D-2 Medical Office
- E-4 Financial Establishment
- E-16 Veterinary Office and Clinic
- E-18 Banquet Facility
- F-1 Utility Operating Facility

**B. Uses by Special Exception**

- G-2 Research

**C. Signs, in accordance with this Ordinance.**



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**§ 175- Area and Dimensional Requirements**

A. The following minimum dimensional requirements shall apply:

Minimum Lot Size	Minimum Lot width at building setback line	Maximum Building Coverage	Maximum Impervious Surface Coverage	Maximum Building Height (feet)	Minimum Yards: Front Side (each) Rear
10 acres	400 ft.	.20	.50	45 ft.	100 ft. 75 ft. 75 ft.

**§ 175- Additional Requirements**

A. No products or goods shall be publicly displayed on the exterior of the premises or from windows in the building.

B. All uses shall be served by approved public water and public sewage disposal facilities.

C. All utilities shall be placed underground.

D. In order to meet the intent of this district, no parking areas, buildings, accessory buildings, detention/retention basins, or other structures shall be placed closer than 100 feet from the street line of Route 611 (Easton Road) with the exception of signs.

**Article VIII**  
**R-2 RESIDENTIAL DISTRICTS**

**§ 175-41 Intent**

A. The purpose of the R-2 Residential District is to allow for higher density and multi-family development in suitable areas where public services are available. The regulations are designed to foster a mix of housing types, a unified planned community, and greater preservation of open space for recreational or open space uses.

B. In all R-2 Residential Districts the following regulations shall apply.

**§ 175-42 Permitted Uses**

A building may be erected or altered, to be used either in whole or in part, and a lot may be used or occupied for any of the following uses and no other, provided that such uses shall comply with such regulations as yard, lot sizes, lot width, building area and heights, impervious surfaces, easements, buffer yards, off-street parking, and other provisions as specified herein.

A. Uses by Right Any of the following uses shall be permitted provided the regulations of this ordinance have been met:

- A-1 Agriculture and Horticulture
- B-1 Single Family Detached Dwelling
- B-4 Single Family Attached
- B-6 Multi-Family Dwelling
- B-7 Single Family detached cluster
- B-9 Single Family Detached with Lot Averaging
- C-5 Recreational Facility
- C-15 Municipal/government building
- F-1 Utility Operating Facility
- H-2 Home Occupation
- H-3 Residential Accessory Structure
- H-6 Swimming Pool
- H-7 Spas/Hot Tubs/ Pools of Restrictive Size
- H-9 Recreational Vehicle
- H-10 Garage/Yard Sales
- H-11 Babysitting Service

B. Uses by Special Exception - The following uses shall be permitted by Special Exception upon a finding by the Zoning Hearing Board that all criteria stated in Article XXIII of this Ordinance have been met.

- B-12 Guest House/Bed and Breakfast
- C-2 School
- C-8 Private Organization
- C-9 Community Center
- C-14 Cemetery
- H-5 Temporary Structures and Vehicles

C. Signs, in accordance with this Ordinance.

**§ 175-43 Area, Open Space, and Impervious Surface Requirements**

The following dimensional regulations shall apply:

	Maximum Net Density du/acre	Minimum Open Space Ratio	Maximum Impervious Surface Ratio	Minimum Gross Site Area	Minimum Lot Area
Single-family detached: B-1	--	--	.20	40,000 sq ft.	40,000 sq.ft.
Single-family detached: B-1	--	--	.20	20,000 sq ft.	20,000 sq.ft. (1)
Single-family detached: B-1		.50	.40	10 acres	8,000 sq.ft.
Single Family with Lot Averaging: B-9 (1)	--	.50	.30	10 acres	16,500 sq.ft.
Single family attached: B-4 (1)	8	.50	.50	10 acres	2,000 sq.ft.
Multi-family: B-6	8	.50	.50	10 acres	1,600 sq.ft.
All other uses	--	--	.30	3 acres	3 acres (2)

(1) Must be served by public water and public sewer

(2) If minimum lot areas are specified for specific uses in Article IV, then those lot areas shall be required. If no specific lot sizes are specified, then the minimum lot area in this chart shall apply.

**§ 175-44 Area and Dimensional Requirements**  
 The following area and dimensional regulations shall apply.

	Minimum Lot Area per Dwelling Unit	Minimum Lot width at Building Setback	Maximum Building Height	Minimum Yards Front Side (each) Rear
Single-family detached: B-1	40,000	150 ft.	35 ft.	50 ft. 25 ft. each 50 ft.
Single-family detached: B-1	8,000	70 ft.	35 ft.	25 ft. 10 ft. each 35 feet
Single-family detached cluster B-7	30,000	125 ft.	35 ft.	50 ft. 20 ft. each 40 ft.
Single-family detached: B-1	20,000	100 ft.	35 ft.	50 ft. 10 ft. minimum - 30 ft. total 35 ft.
Single Family Lot Averaging: B-9	16,500	100 ft.	35 ft.	50 ft. 10 ft. minimum - 30 ft. total 35 ft.
Single Family Attached: B-4	2,000	22 ft.	35 ft.	
	Yards for individual units			20 ft. 10 ft. end units
	Yards/setbacks for entire site			25 ft. 100 ft. 75 ft. each 75 ft.
Multi-family: B-6 (1)	1,600	300 ft.	35 ft.	100 ft. 75 ft. each 75 ft.
All other uses (2)	3 acres	150 ft.	35 ft.	50 ft. 25 ft. 50 ft.

- (1) Additional area and dimensional requirements for multi-family developments (Use B-6) as specified in Articles IV (Use Regulations) and V (General Provisions) shall apply.  
 (2) Unless otherwise specified in Article IV for the specific use, in which case the provisions of Article IV shall apply.

**§ 175-45 Other Requirements**

A. All utilities including telephone and television cables shall be placed underground within lot lines.

B. Provisions for mix of permitted housing types.

1. A mix of any permitted housing types is allowed, provided that the following requirements for the tract shall be met:

	Minimum Lot Area per Dwelling Unit	Minimum Lot width at Building Setback	Maximum Building Height	Minimum Yards Front Side (each) Rear
Mixed Residential Uses	(1)	400 ft.	35 ft.	100 ft. 75 ft. each 75 ft.

Net Density Maximum (DU/acre)	Open Space Ratio Minimum	Tract Size Minimum (acres)
8	.50	10 acres

(1) Lot areas shall be in accordance with the requirements of §175-44 for each individual housing types and in accordance with any other applicable provisions of this ordinance.

3. Architectural Standards - Multi-family and townhouse dwellings shall be federal, Colonial, traditional, or other architectural style which are compatible with the style and architecture of the Doylestown, Bucks County, area. Cinder block, concrete block, or T 1-11 siding are discouraged from use on any exposed exterior wall.

C. Open space Requirements: 50% of gross site area shall be open space which shall be offered for dedication to Doylestown Township.

a. Open space may contain areas with natural resource restrictions. Required setbacks from the property lines are not considered to be open space. Stormwater management facilities may be located within the open space but the area of stormwater management facilities shall not be used to meet the open space requirements.

b. Open space must be set aside in a manner which contributes to the township's overall open space system and which meets with the approval, in terms of layout and location, of the township Board of Supervisors. Standards for open space layout and design shall be in accordance with the Doylestown Township Subdivision/Land Development Ordinance.

In order to address the question of a modified unit type known as the flat (a one-story unit with individual outside access to each unit), a minor adjustment to Article IV, Use Regulations, is recommended:

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**Article IV - §175-16**

**B-6 Multi-Family - An attached dwelling unit which may be arranged in a variety of configurations: side by side, back to back, or vertically. Access shall be by way of an individual outside entrance to each dwelling unit.**

- 1. The maximum length of such a building shall be one hundred and eighty (180) feet.**
- 2. Multi-family units shall be arranged in groups or clusters and not in long rows parallel to street lines.**

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Establish new Village Center District

Article ---

VC Village Center District

§ 175- Intent

The purpose of the VC Village Center District is to encourage a continuation of the established development pattern in the township's traditional villages. In all VC Village Center Districts the following regulations shall apply.

§ 175- Permitted Uses

A building may be erected or altered, to be used either in whole or in part, and a lot may be used or occupied for any of the following uses and no other, provided that such uses shall comply with such regulations as yard, lot sizes, lot width, building area and heights, impervious surfaces, easements, buffer yards, off-street parking, and other provisions as specified herein.

A. Uses by Right Any of the following uses shall be permitted provided the regulations of this ordinance have been met:

- A-1 Agriculture and Horticulture
- B-1 Single Family Detached Dwelling
- B-2 Single family semi-detached dwelling
- B-3 Two-family detached dwelling
- C-5 Recreational Facility
- H-2 Home Occupation
- H-3 Residential Accessory Structure
- H-6 Swimming Pool
- H-7 Spas/Hot Tubs/ Pools of Restrictive Size
- H-10 Garage/Yard Sales
- H-11 Babysitting Service

B. Uses by Special Exception - The following uses shall be permitted by Special Exception upon a finding by the Zoning Hearing Board that all criteria stated in this Ordinance have been met.

- B-10 Residential Conversion
- B-12 Guest House/Bed and Breakfast
- C-1 Place of Worship
- C-8 Private Organization
- F-1 Utility Operating Station
- H-1 Home Office
- H-6 Temporary Structures and Vehicles

C. Signs, in accordance with Article XX of this Ordinance.

**§ 175- Area, Open Space and Impervious Surface Requirements**

The following dimensional regulations shall apply to all permitted uses (1):

	Minimum Lot Width and Yards	Maximum Building Coverage Ratio	Maximum Impervious Surface Ratio	Minimum Gross Site Area	Minimum Lot Area Per Dwelling Unit
All permitted uses	70 ft.	.30	.50	10,000 sq ft.	10,000 sq.ft.
	20 ft. front 10 ft. side 30 ft. rear				

(1) Unless otherwise specified in Article IV for the specific use, in which case the provisions of Article IV shall apply.

**§ 175- Additional Provisions**

A. All utilities including telephone and television cables shall be placed underground within lot lines.

B. All permitted uses shall be compatible with the village character in terms of scale, architectural design, and type of use and shall reflect the traditional architecture and design of the older village buildings.

C. Parking for nonpublic nonresidential uses shall be provided at the side or rear of the building and shall not be permitted within the front yard area or at the front of the building.



Modify the C-1 District standards:

**Article XIII**  
**C-1 COMMERCIAL DISTRICT**

**§ 175-66      Intent**

The intent of the C-1 Commercial District is to provide for general highway commercial services in areas where commercial activities predominate and to accommodate existing residential development. The district requirements are designed to encourage development which will protect traffic safety and enhance community appearance.

**§ 175-67      Permitted Uses**

A building may be erected or altered, to be used either in whole or in part, and a lot may be used or occupied for any of the following uses and no other, provided that such uses shall comply with such regulations as yard, lot sizes, lot width, building area and heights, impervious surfaces, easements, buffer yards, off-street parking, and other provisions as specified herein.

A. Uses by Right Any of the following uses shall be permitted provided the regulations of this ordinance have been met:

- A-1    Agriculture and Horticulture
- B-1    Single family detached dwelling
- C-4    Library or Museum
- C-5    Recreational Facility
- C-6    Athletic Facility
- C-9    Community Center
- C-15   Municipal/Government Building
- D-1    Office
- D-2    Medical Office
- E-1    Retail Shop
- E-3    Service Business
- E-4    Financial Establishment
- E-5    Eating Place
- E-7    Repair Shop
- E-10   Service Station
- E-11   Automobile Sales
- E-15   Funeral Home
- E-16   Veterinary Office and Clinic
- F-1    Utility Operating Facility
- F-3    Terminal
- G-5    Contracting Services
- G-6    Trades

B. Uses by Special Exception - The following uses shall be permitted by Special Exception upon a finding by the Zoning Hearing Board that all criteria stated in this Ordinance have been met.

- B-12   Guest House/Bed and Breakfast
- E-13   Car Wash
- G-8    Building Materials Sales
- G-15   Warehouse

C. Signs, in accordance with Article XX of this Ordinance.

**§ 175-68 Area, Height and Dimensional Requirements**

The following minimum dimensional requirements shall apply: (1)

Minimum Lot Size	Minimum Lot width at building setback line and at street line	Maximum Building Coverage	Maximum Impervious Surface Coverage	Maximum Building Height (feet)	Minimum Yards: Front Side (each) Rear
20,000 sq.ft.	100 ft.	<u>.20</u>	<u>.50</u>	35	50 ft. 20 ft. 25 ft.

(1) Unless otherwise specified in Article IV for the specific use, in which case the provisions of Article IV shall apply.

**§ 175-69 Additional Requirements**

- A. Regulations relating to Outside Storage, Article IV, shall apply to all uses.
- B. All uses permitted by right or by special exception shall be served by approved public water and public sewage disposal facilities.
- C. All utilities shall be placed underground.
- D. Parking shall be located at the side or at the rear of properties wherever possible.
- E. Required side yards may be used for parking where a jointly used and coordinated parking area is planned for the abutting property along the side yard line.

It is recommended that zoning permit applications for new nonresidential uses or conversions from residential to nonresidential uses be reviewed by the township Planning Commission and Board of Supervisors so that issues relating to driveway configuration and land development can be addressed.

§175-125 Zoning Permit Required, shall be amended by adding the following new subsection.

All applications for zoning permits for nonresidential uses within the C-1, and C-3 districts shall be submitted to the Township Planning Commission and the Board of Supervisors, unless the use has been approved by a previously approved zoning permit or land development application, to ensure compliance with this ordinance and to encourage compliance with the planning guidelines set forth in township plans and policies regarding driveway access, street trees, and traffic safety.

# Park, Recreation, and Open Space Plan

1992



Doylestown Township

Buck County, Pennsylvania

Doylestown Township  
Park, Recreation and Open Space  
Plan

1992

**Doylestown Township  
Park, Recreation and Open Space Plan**

**Doylestown Township Park and Recreation Board, 1991**

Thomas Cockley, Chairman

Carol Noonan

Robert Abecasis

Donald Borden

Elizabeth Larlick

Clara Stock

Carolyn Stover

**Doylestown Township Board of Supervisors**

Walter J. Conti

Jeffrey Williams

John Carson

Gregory Dubas

Richard Gaver

**Doylestown Township Staff**

David R. Jones, Township Manager

Stephanie J. Mason, Assistant Township Manager

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ADOPTED MAY 5, 1992

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## Purpose of the Plan

A plan for parks, recreation and open space has been prepared for Doylestown Township to guide township officials in: making decisions about the acquisition/preservation of land for recreation purposes; the development of recreational programs to meet present and future community needs; and to support other township plans and ordinances aimed at protecting natural features and environmental quality. These purposes are interrelated. A solid residential community such as Doylestown Township needs to provide adequate land to accommodate recreational activities, needs to support recreational programs, and must protect natural areas for their contribution to the character to the community and the preservation of the environment.

**Plan Contents** • The Plan describes the natural and cultural features existing in the Township, the recreational facilities and programs serving township residents, the anticipated future need for parks and recreation facilities and services based on anticipated future population growth, administrative requirements for managing a park and recreation system, guidelines for mandatory dedication, and guidelines for preserving natural features.

**1992 Plan is an Update of the 1972 Park and Recreation Plan** • The Plan is an update of the 1972 Park and Recreation Plan for Doylestown Township and is a component of the township Comprehensive Plan. Several important features distinguish this plan from previous efforts. First, the plan incorporates a concern for preservation of important natural and cultural features. Second, the plan is designed to provide guidance for the township on the use and development of a central park complex in the center of the township on land purchased in 1991. Third, this plan addresses the requirements for developers to dedicate land or funds to meet the recreational needs created by new development. The Pennsylvania Municipalities Planning Code allows townships to require the dedication of recreation land or fees when specific criteria are met. This plan provides the foundation for new mandatory dedication requirements.

**Citizen Survey Used to Develop Plan Recommendations** • The results of a citizen survey form the basis of the Plan's recommendations regarding programs and future facility needs. Both the Park and Recreation Board and the Township Board of Supervisors feel that the concerns and interests of township residents must be reflected in the development of an expanded park, recreation and open space system. Therefore, a survey was sent to all households in the Township in the summer of 1991. The results of the survey are summarized and have been used in developing the Plan's recommendations.

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## Goals of the Plan

**Importance of Local Recreation and Parks** • Providing for recreation is recognized as a function of local government. Since most people spend a large portion of their leisure time in the area where they live or work, the opportunity for recreation within the community becomes important.

According to the Pennsylvania Recreation Plan, local governments own less than two percent of lands available for public recreation, but about 70 percent of all public recreation takes place at these local facilities. Local governments should play a role in providing recreational services to the community. Local governments should accept responsibility for providing recreation and park services because:

1. Township government can focus on the needs of residents to see that citizen interests are met;
2. Township government can provide adequate areas and facilities and see that they are developed and maintained properly;
3. Local recreation programs provide a large proportion of the population with their primary opportunity for recreation;
4. Local government programs can be less expensive and more accessible than private recreation;
5. Local government gives permanency and continuity to recreation.

The following goals were developed by the Township Park and Recreation Board at their meeting on February 4, 1991. The goals considered to be most important are noted in **bold**. The goals are divided into four areas of concern: open space preservation and land acquisition; park and recreation facilities; recreational programs; and administration and operation of the park and recreation program.

### **GOALS: OPEN SPACE PRESERVATION AND LAND ACQUISITION**

1. **Preserve land to meet a variety of purposes, including parkland, open space, agriculture, sensitive natural areas (floodplains, etc.) and areas of historic interest and importance.**
2. **Acquire land from developers through mandatory dedication procedures which meet the requirements of the Pennsylvania Municipalities Planning Code.**



- 
3. Develop land next to the Township Building for a township-wide central park.
  4. Preserve as a natural area the Pine Run reservoir and surrounding land.
  5. Provide an area for nature study and appreciation.
  6. Protect wildlife habitat.
  7. Preserve open space in the township so that there will be areas which retain their natural character.
  8. Encourage cooperation among township boards and commissions to meet joint goals: open space preservation, recreation, environmental protection.

#### GOALS: PARK AND RECREATION FACILITIES

1. Plan for the acquisition of land and the development of facilities to keep pace with the demands of the growing population.
2. Acquire/develop a community center as a place for recreation activities, cultural events, meeting place for community members.
3. Plan for a township swimming pool.
4. Provide facilities and instructions for tennis.
5. Establish a permanent township location for the summer recreation program.
6. Establish playgrounds and smaller neighborhood parks.
7. Provide facilities for soccer and for basketball.
8. Develop greenways and trails along the township waterways. Greenways are areas along waterways that are kept in their natural state and used for activities such as walking. Work with County on Link Park Program.
9. Develop bike trails, hiking trails, and other means of pedestrian circulation; establish links between recreational areas.

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## GOALS: RECREATIONAL PROGRAMS

1. Provide a full range of recreational programming for all segments of the township population, including sports, arts and crafts, social activities, without duplicating the efforts of other community groups.

2. Foster a sense of community and pride among township residents through the sponsorship of trips, activities, cooperative activities and establishment of community facilities.

- Provide instruction for township residents in sports, including swimming, tennis, volleyball, and others.

- Continue the summer recreation program and investigate ways to involve older children.

- Continue to sponsor the Park Board's successful programs, including ice skating and the Christmas open house at the Township.

- Sponsor special trips, such theater or sporting event trips.

## GOALS: IMPLEMENTATION

1. Assure adequate township staffing for the recreation and park program.

2. Plan for coordination and cooperation with the surrounding municipalities, with the area athletic associations, with community institutions, and with the school district.

3. Encourage volunteerism as a means of supporting recreational opportunities and programs.

4. Increase community awareness of recreational facilities and programs and foster better communication about township activities.

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## Inventory of Natural Features

**Community Description** • Doylestown Township lies in the center of Bucks County and surrounds Doylestown Borough, the county seat, and New Britain Borough. It has an area of approximately 10,000 acres and a 1990 population of 14,510 persons. During the last two decades, the township has changed from a relatively low density agricultural area to a suburban residential community. The need for public services and facilities to serve the growing population has been addressed by the Township through a variety of programs which provide public sewers, public water, roadway improvements, recycling and waste disposal, and expanded township administration. Providing adequate recreational facilities and programs for the growing population is part of the overall Township commitment to meet community needs.

The first part of the plan examines the assets of the community -- natural features and recreational resources -- which are to be utilized in a comprehensive system of parks, open space and recreation.

**Natural Features** • Open space involves two types of land use: open areas preserved from development to protect sensitive environmental areas which leaves in tact a portion of the land as a cultural and educational resource; and recreation space which is designed to be used for outdoor activities and sports.



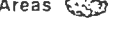
Doylestown Township's Comprehensive Plan (1989) includes a description of the features which form the natural environment within which development takes place. This discussion, attached as an appendix to this plan, describes the location and significance of: steeply sloped areas, soils, waterways, wetlands, floodplains, agricultural lands, and geology. The Comprehensive Plan proposes policies to protect these natural features. Among those policies is the recommendation that development be clustered in order to protect floodplains, wetlands, wooded areas, stream valleys, and steep slopes.

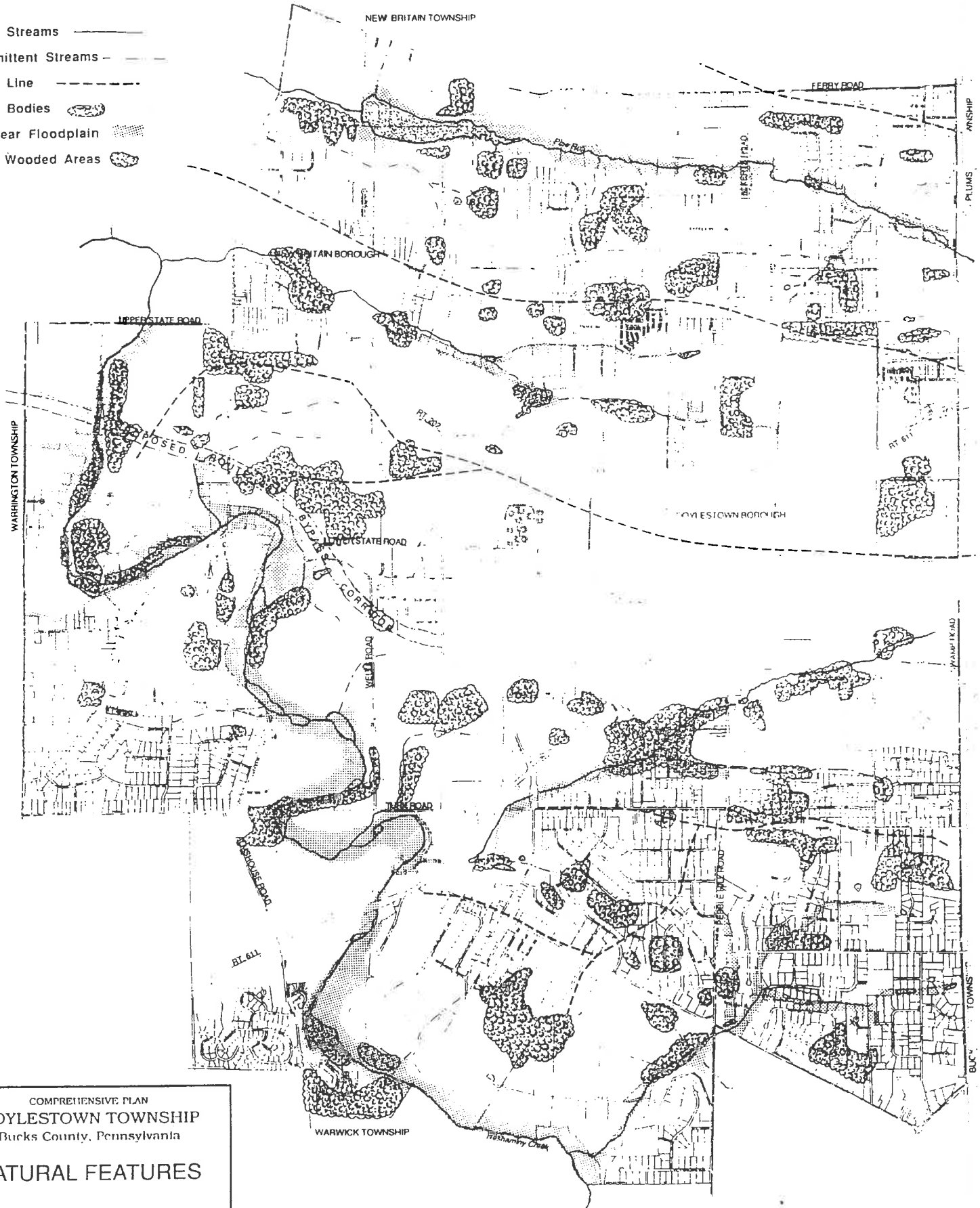
The most significant natural features to take into account in developing open space and recreation plans are the Neshaminy Creek and the Pine Run Reservoir area.

### Neshaminy Creek

The main branch of the Neshaminy Creek winds through Doylestown Township for a distance of over eight miles, fed by numerous tributaries such as Cook's Run, Pine Run, Rich's Mill Creek, which flows into the Neshaminy at Edison, and an unnamed tributary originating in the Pebble Hill section of the township and flowing into the Neshaminy at Bridge Valley. The Neshaminy originates above Doylestown and meanders through the County, forming a focal point for


# Legend

- Major Streams ———
- Intermittent Streams - - - - -
- Ridge Line - - - - -
- Water Bodies 
- 100 Year Floodplain 
- Major Wooded Areas 



COMPREHENSIVE PLAN  
**DOYLESTOWN TOWNSHIP**  
 Bucks County, Pennsylvania

**NATURAL FEATURES**



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several parks and recreation areas before it reaches the Delaware River. County parks have been established at Dark Hollow (Warwick and Doylestown Townships) and Playwicki (Middletown Township). Two state parks (Tyler Park in Newtown and Northampton Townships and Neshaminy State Park in Bensalem and Bristol Townships) take advantage of the creek's recreational and natural assets.

As currently practiced, open space/recreation planning embraces the concept of incorporating stream valleys into a system of passive recreation areas. The Township's most "undevelopable" land is located along the Neshaminy valley. This includes areas of steep slopes, floodplains, wetlands, and wooded areas. (See Map of Natural Features) While these areas are poorly suited for development, they are ideally suited for passive recreation, providing natural areas for walking, fishing, nature study, and picnicking.

There are numerous smaller tributaries to the Neshaminy which share the characteristics of the Neshaminy in that they are bordered by floodplains, wooded areas, and, in some cases, steep slopes.

#### Pine Run Reservoir

The Pine Run Reservoir is a man-made impoundment located at the northern end of the township which was created as a flood control project. The area is surrounded by low-density residential development. Once controlled by the Neshaminy Water Resources Authority, the 328 acres of land and 39 acres of water is now under the control of Bucks County. It serves as a wildlife area and is used occasionally by fisherman, ice skaters, and bird watchers.

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## Recreational and Open Space Resources

Land and facilities available to meet recreational and park needs are provided by the township, Bucks County, the Central Bucks School District, and private or quasi-public organizations. In several instances, facilities are provided through a partnership arrangement. The chart which follows is an inventory of these facilities.

## Open Space and Recreational Facilities in Doylestown Township

Name	Location and Size	Use and Facilities	Ownership Maintenance	Comments
<u>TOWNSHIP FACILITIES</u>				
Sauerman Park	13 acres; Sauerman Road	Adjoins Neshaminy Creek; nature trails, playground equipment; ice skating pond; parking area; volleyball	Township-owned property; maintained by Township	
Neamand Tract Open Space	41 acres; located along the Neshaminy Creek, near Wells Road and Lower State Road; access is through the Doylestown Crossing development	Open space includes floodplain areas, woodlands	Township owned and maintained	A concept plan should be developed for this property which takes into account the natural features, floodplain, possible connections to other trail segments along the Neshaminy. Vehicle access and parking needed.
Township Land at Township Complex	108 acres adjacent to the Township Building; acquired in 1991 for recreation, for agricultural preservation, and sewage disposal	Location and type of facilities needs to be determined.	Township owned and maintained; lease agreements with Delaware Valley College for agricultural use on a portion of the property.	This land is earmarked for a central community park. The township will need to develop a master site development plan for the site, using general guidelines from this Plan.

Name	Location and Size	Use and Facilities	Ownership Maintenance	Comments
<u>TOWNSHIP/</u> <u>COUNTY</u> <u>PARTNERSHIP</u> Turk Field I	6 acres at Turk and Almshouse Roads	Used by youth athletic organizations for baseball and football; parking area; rest rooms.	Land is owned by Bucks County and leased by Doylestown Township; maintenance by Township	Recent improvements include expanded parking area and installation of football goal posts to expand use to the fall season.
Turk Field II	20 acres at Turk and Almshouse Roads	Fields to be used for soccer, hockey, and baseball; tot lot; 10-station fitness trail; walking/jogging trail; parking and rest room facilities provided	Land is owned by Bucks County and leased by Doylestown Township; maintenance by Township	Use of fields to be determined by Township; youth athletic associations have agreed to assist with field maintenance.



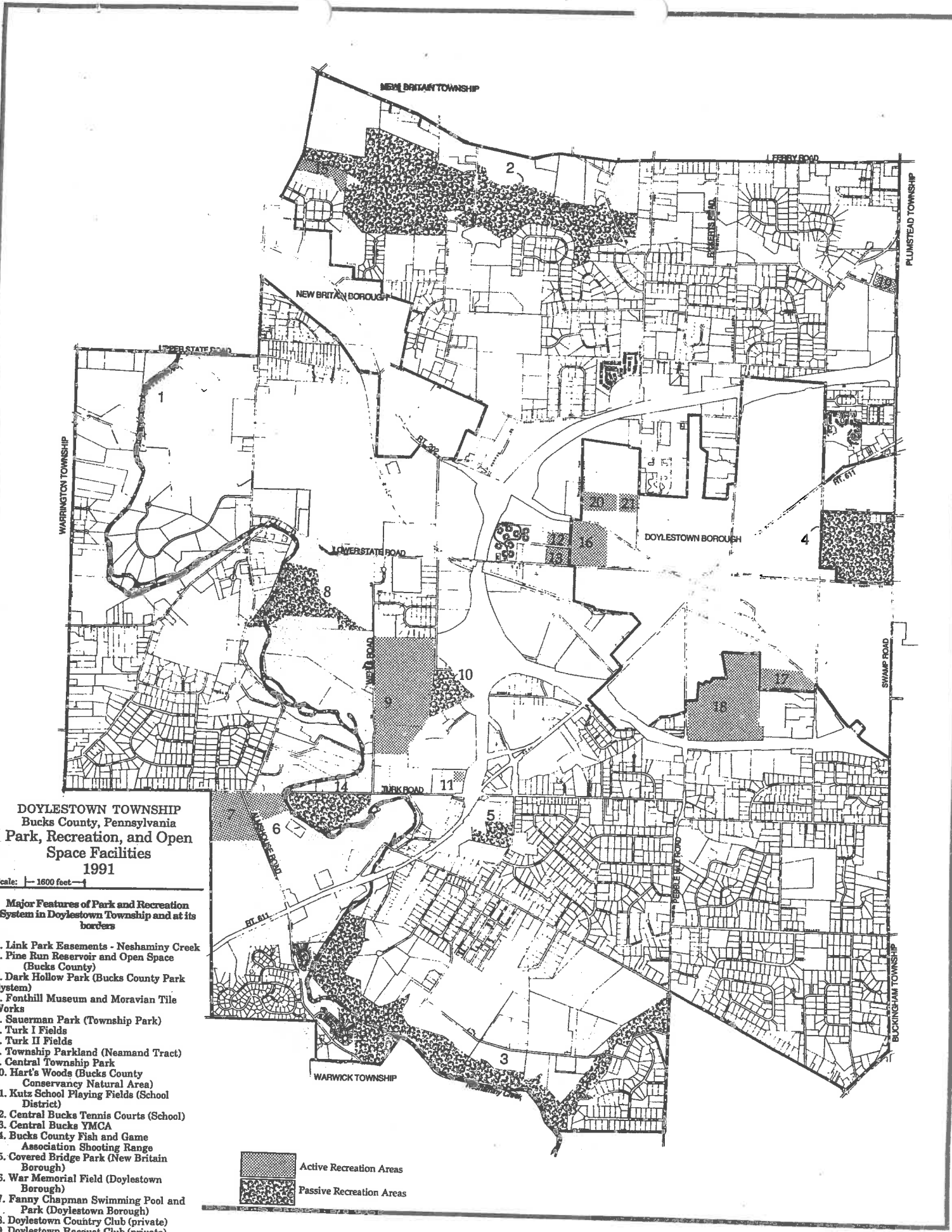
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Name	Location and Size	Use and Facilities	Ownership Maintenance	Comments
<u>TOWNSHIP/ SCHOOL PARTNERSHIP</u>				
Kutz Elementary School	12 acres at Turk Road and Route 611	A ball fields and playground equipment are provided for school children; the Township has cooperated with the school district for use of facilities; fields have been used by local athletic associations	Central Bucks School District owns and maintains the grounds	Recent school and parking area expansion has eliminated a playing field.
Central Bucks West High School	School located in Doylestown Borough; 6 tennis courts and playing fields located in the Township	Tennis courts are used by school teams during certain times of the year and are available to the community on weekends and when not used by school. Field used primarily by school district.	Central Bucks School District owns and maintains.	Township has cooperated with the school district in setting up tennis instruction program for summer, 1991.

Name	Location and Size	Use and Facilities	Ownership Maintenance	Comments
<u>COUNTY/ CULTURAL FACILITIES</u>				
Fonthill and Moravian Tile Works	77 acres on Swamp Road and Route 313, surrounded by Doylestown Borough	Fonthill is the former home of Henry Mercer and is operated as a museum by the Bucks County Historical Society. The Tile Works is a museum and tile production facility. The large wooded areas and open fields are used for numerous community events.	Land at Fonthill is owned by the Bucks County Historical Society. Tile Works property is owned by Bucks County.	No changes are anticipated in these lands or facilities.
COUNTY OPEN SPACE				
Pine Run Reservoir	Located in northern end of Township, between Ferry Road and Sandy Ridge Road;  340 acres of land and 39 acres of water	The land is largely floodplain area. The construction of the dam to make the impoundment altered the area but it remains as a natural area. No formal access or parking facilities. It is used for bird watching, riding, walking, fishing.	Land is owned and maintained by Bucks County	The Bucks County Parks Department indicates a long-term goal of bringing this area into the County Park System as part of the Peace Valley Park, to be used as a natural area. The County Park Plan proposes a walking path through this area.

Name	Location and Size	Use and Facilities	Ownership Maintenance	Comments
Dark Hollow Park	Land in Doylestown is located along the Neshaminy Creek at the lower end of the Township. Land area is 223 acres.	The Dark Hollow Park has been established in 1990 as an addition to the County Park System. The land was originally acquired for a flood control project. Access to Neshaminy is provided in Warwick Township on York Road.	Owned and maintained by Bucks County.	Access to Park from Doylestown Township would be desirable in the future.
COUNTY/ PRIVATE PARTNERSHIP Bucks County Fish and Game Association	Land is located on Turk Road, between Wells Road and the end of Turk Road. 34 acres; access from Turk Road; large gravel parking area is provided.	The Fish and Game association leases 34 acres from Bucks County along the banks of the Neshaminy Creek for use by its members for archery and riflery.	Land owned by Bucks County; maintained by Fish and Game Association.	

Name	Location and Size	Use and Facilities	Ownership Maintenance	Comments
<p>QUASI-PUBLIC OPEN SPACE</p> <p>Harts Woods</p>	<p>New Britain Road, between Route 611 bypass and Township Building. Area = 19 acres</p>	<p>Land is wooded and is preserved as a natural area. The public is permitted to visit the property, but there are not provisions for access or parking.</p>	<p>Owned and maintained by the Bucks County Conservancy.</p>	<p>Land should be considered in planning recreation facilities for the central part of the township; passive use only.</p>
<p>PUBLIC FACILITIES</p> <p>Fanny Chapman Swimming Pool</p> <p>(Located in Doylestown Borough but service area includes Doylestown Township)</p>	<p>Located in Doylestown Borough, adjacent to Township at East Street and West State Street; 8 acres</p>	<p>Facilities include three swimming pools; playground; picnic facilities; volleyball; basketball; fitness trail; walking path. Swimming instruction and teams.</p>	<p>Pool is maintained through the revenues from pool memberships; Board of Managers is appointed by Doylestown Borough Council to oversee operations.</p>	<p>Membership is open to anyone in the Central Bucks School District area which includes Doylestown Township.</p>



**DOYLESTOWN TOWNSHIP**  
 Bucks County, Pennsylvania  
**Park, Recreation, and Open  
 Space Facilities  
 1991**

Scale: 1" = 1600 feet

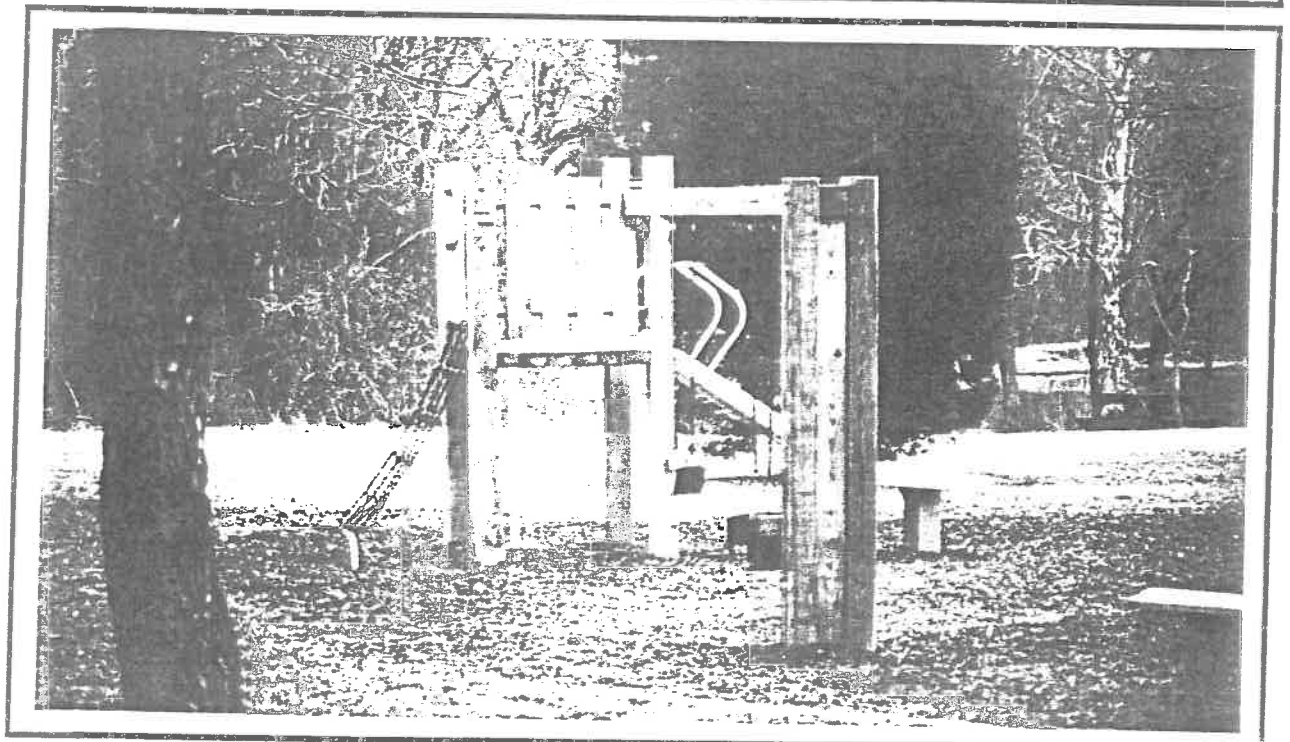
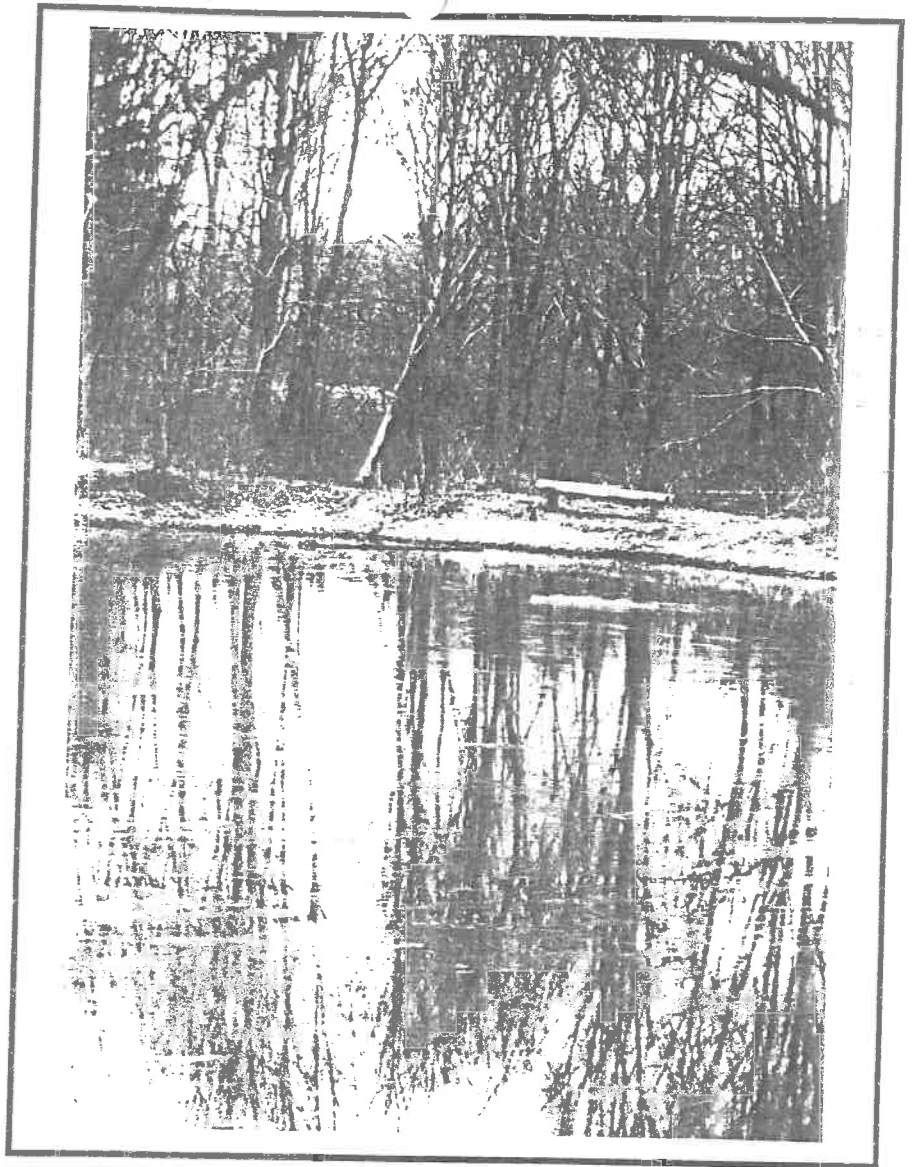
**Major Features of Park and Recreation  
 System in Doylestown Township and at its  
 borders**

1. Link Park Easements - Neshaminy Creek
2. Pine Run Reservoir and Open Space (Bucks County)
3. Dark Hollow Park (Bucks County Park System)
4. Fonthill Museum and Moravian Tile Works
5. Sauerman Park (Township Park)
6. Turk I Fields
7. Turk II Fields
8. Township Parkland (Neamand Tract)
9. Central Township Park
10. Hart's Woods (Bucks County Conservancy Natural Area)
11. Kutz School Playing Fields (School District)
12. Central Bucks Tennis Courts (School)
13. Central Bucks YMCA
14. Bucks County Fish and Game Association Shooting Range
15. Covered Bridge Park (New Britain Borough)
16. War Memorial Field (Doylestown Borough)
17. Fanny Chapman Swimming Pool and Park (Doylestown Borough)
18. Doylestown Country Club (private)
19. Doylestown Racquet Club (private)
20. Lenape Junior High School
21. Doyle Elementary School

 Active Recreation Areas  
 Passive Recreation Areas

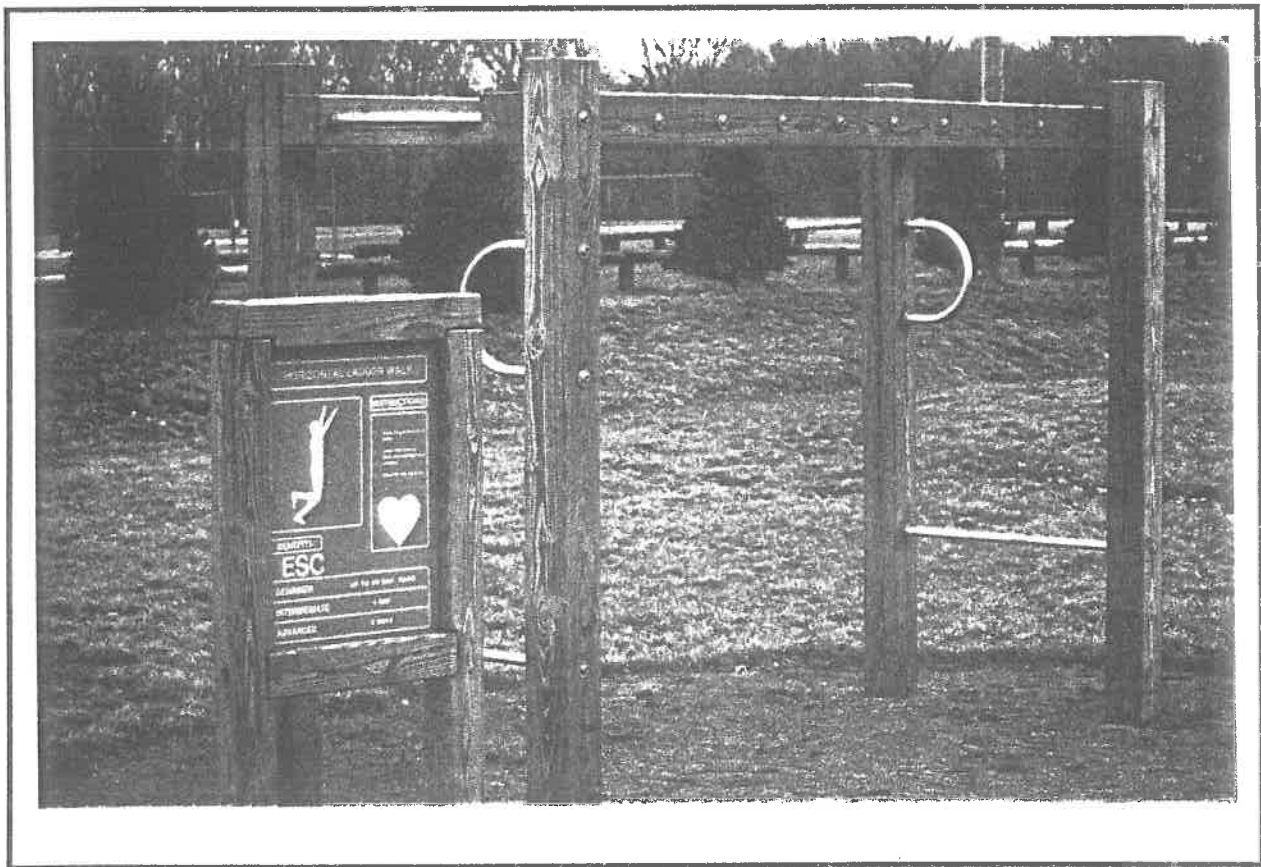
## SAUERMAN PARK

Pond and playground equipment at Sauerman Park on Sauerman Road provide opportunities for passive and active recreation.



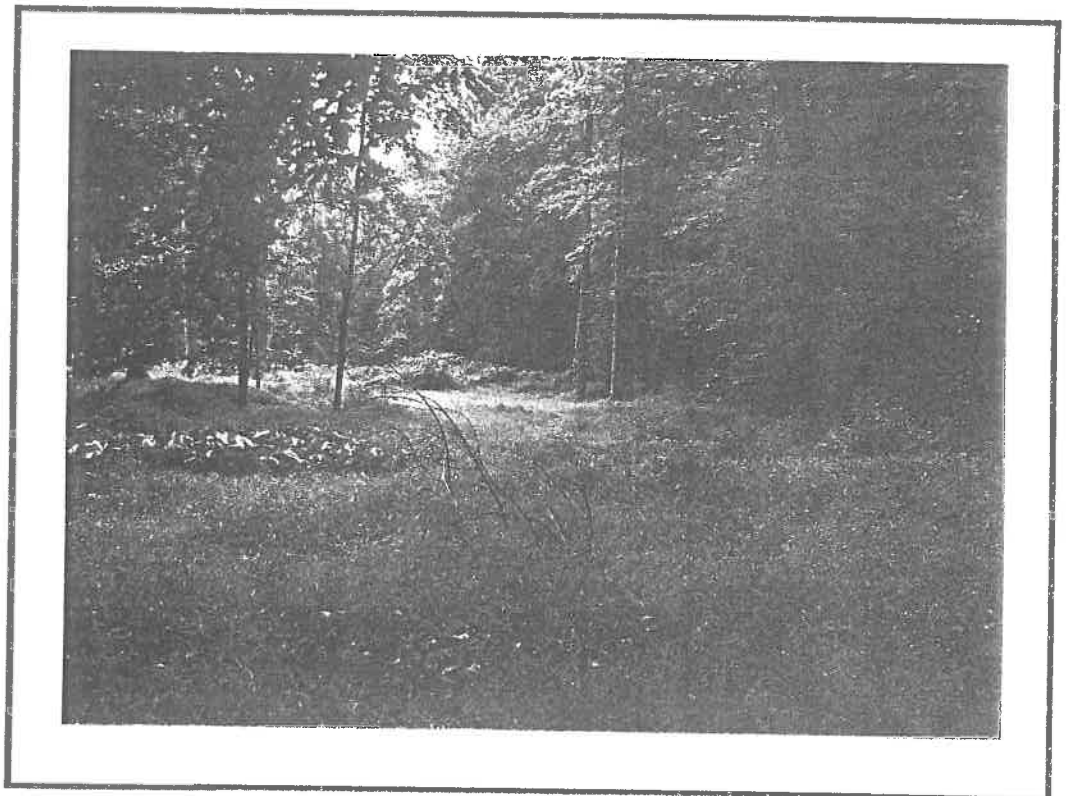
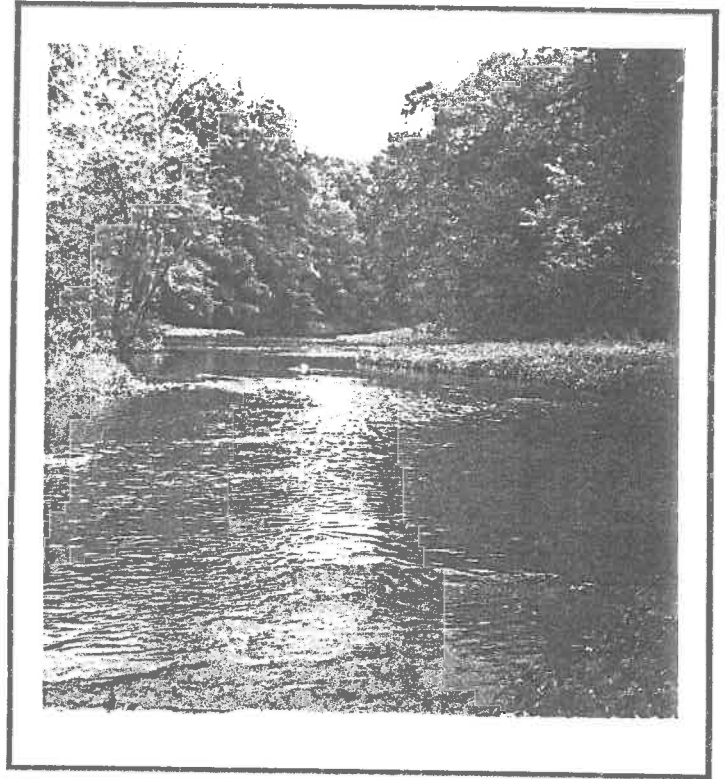
## TURK PARK II

The twenty-acre Turk Park II site at Turk and Almshouse Roads includes several ballfields, a walking/jogging trail, a fitness course, and play-ground equipment.



## NEAMAND TRACT OPEN SPACE

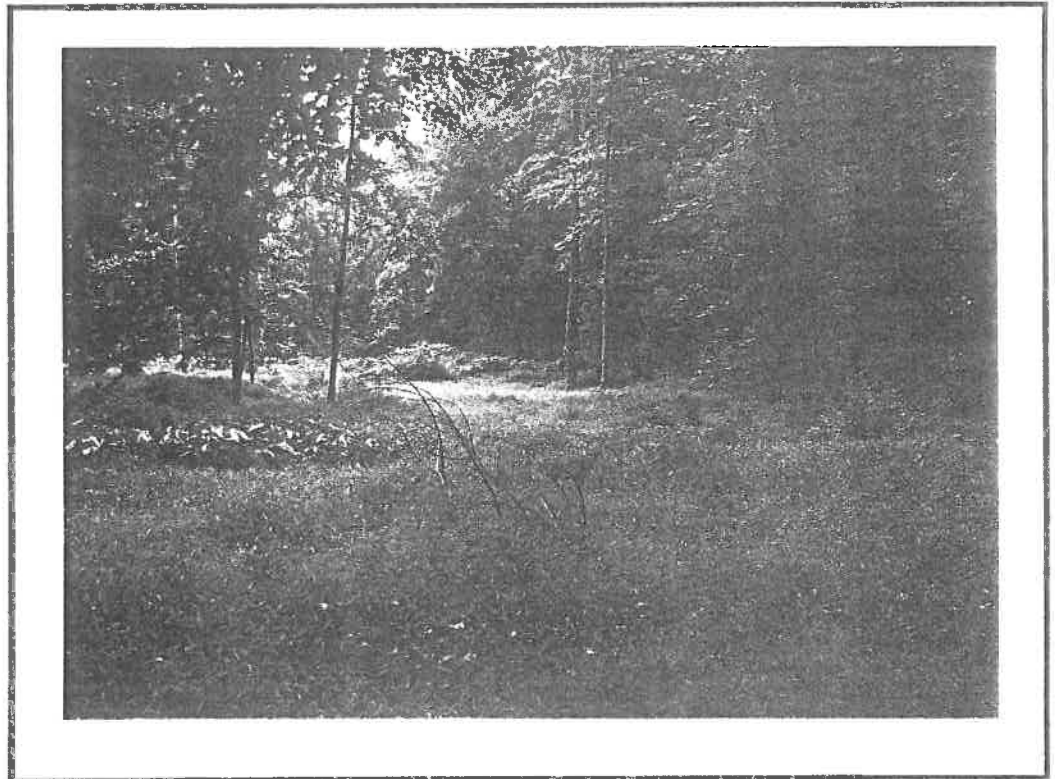
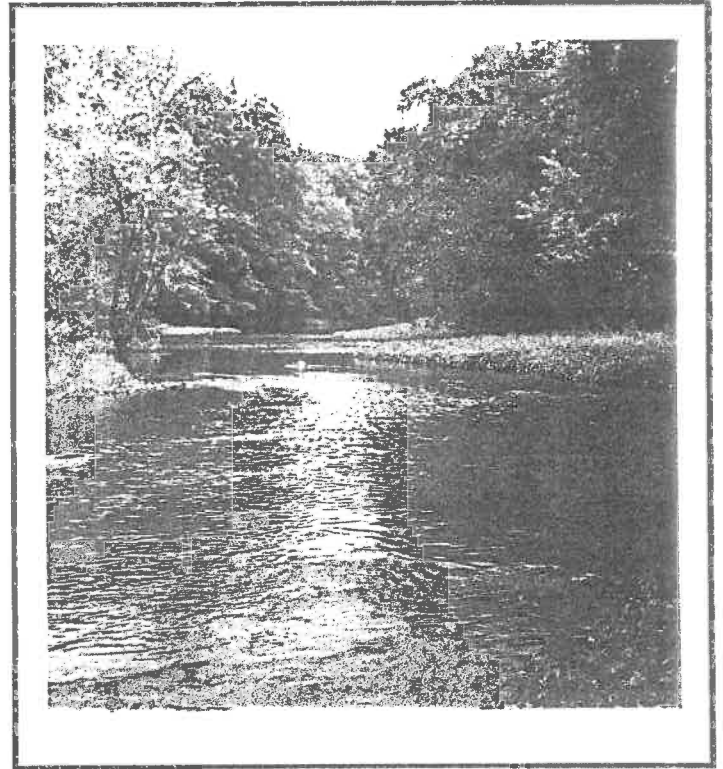
Forty-three acres of open space along the Neshaminy Creek near Lower State and Wells Roads provide access to the creek for fishing, walking, nature study, and other outdoor recreation. This Township park land includes the stream corridor, wooded areas and open fields.





## NEAMAND TRACT OPEN SPACE

Forty-three acres of open space along the Neshaminy Creek near Lower State and Wells Roads provide access to the creek for fishing, walking, nature study, and other outdoor recreation. This Township park land includes the stream corridor, wooded areas and open fields.



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## Regional Park and Recreation Facilities

County and State-owned parks in Bucks County provide recreational opportunities for township residents.

Peace Valley Park located just north of the township is easy to get to for most township residents and is heavily used by residents of the central Bucks County area. It serves as a regional park, providing fishing, walking trails, bike trails, nature areas, boating, picnic areas, playground equipment, and fields for field sports.

Core Creek County Park is located on 1185 acres in lower Bucks County and provides facilities for fishing, hiking, bicycling, horse trails, picnicking, tennis, boating, softball, basketball, shuffleboard, playgrounds.

An appendix lists the county facilities which are available to Township residents.

State facilities within a 12-mile radius of the township are:

**Nockamixon State Park**  
5065.6 acres in Upper Bucks County; facilities for hiking, biking, horse trails, boating, fishing, ice skating, cross-country skiing, cabins, swimming, and picnicking.

**Tyler State Park**  
1711 acres in Central Bucks County; facilities for softball, volleyball, hiking, biking, horse trails, boating, ice skating, cross country skiing, picnicking, playgrounds.

**Ralph Stover State Park**  
45 acres in Plumstead Township along the Tohickon Creek; facilities provide are cabins, fishing, hiking, and picnicking

**Delaware Canal State Park**  
This park extends along the Delaware Canal and contains the tow path which serves as a walking trail; historic elements are also preserved.

**Washington Crossing State Park**  
408 acres in Upper Makefield Township; historic park; picnic facilities

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## Recreational Facilities in Surrounding Municipalities

Residents of the Township utilize some of the recreational facilities in surrounding municipalities, from fields for organized sports to playgrounds for small children. The municipal facilities and school facilities located in neighboring municipalities are listed below. County and regional facilities in these area are discussed elsewhere in this report.

### Doylestown Borough

1. Burpee Playground - 4.5 acres devoted to playground equipment, playing fields, tennis court, basketball net; pavilion for summer crafts program.

2. Hillside Avenue Playground - 0.8 acres with playground equipment.

3. Maplewood Playground - 35 acres with baseball fields, playground equipment, picnic tables, woods with trails.

4. War Memorial Field - 14.2 acres with fields and the football/soccer/track stadium used for high school sporting events.

5. School Facilities - Located in the Borough are two elementary school (Linden and Doyle) which have playground apparatus for children as well as some playing fields for sports.

Lenape Junior High (47 acres) has playing fields for football, soccer, field hockey, and tennis.

Central Bucks West High School (26.5 acres) has fields used for field sports, adjacent to the War Memorial Field.

### New Britain Borough

1. Covered Bridge Park - 11 acres with playground apparatus, picnic facilities; pavilion; open field. The area is owned and operated by the New Britain Borough Civic Association.

2. Nature Preserve - 14.8 acres along the North Branch of the Neshaminy Creek; fields and woods; walking trails; passive recreation. The area is owned and maintained by the Borough.

3. School Facilities - Pine Run Elementary School, located on 17.5 acres, with fields for softball and basketball.

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Buckingham Township

1. Holicong Park - Fields for soccer, field hockey, football, located on Route 202 near Holicong Road.

2. School Facilities - Buckingham Elementary School, Holicong Junior High School, and Central Bucks East High School all have fields used for soccer, hockey and football by school groups and by organized athletic associations. The junior and senior high schools include baseball fields. The High School has a swimming pool which can be used by the public during certain times; swimming instruction offered.

Plumstead Township

1. School Facilities - Gayman Elementary School has a baseball field and a playground area.

New Britain Township

1. Fairwood Park has fields for soccer, football, and baseball and a picnic pavilion.

2. School facilities - Butler Elementary School has softball fields, basketball courts, and playground apparatus.

3. Open Space in Developments - There are approximately 50 acres of open space associated with residential developments which remain open but undeveloped.

Warrington Township

1. Barness Park - A 23-acre facility with fields for football, baseball and soccer and a senior citizen area.

2. Upper Nike Park - 16 acre facility with fields for football and soccer.

3. Palomino Farms facilities - 2 sites in Palomino Farms development with facilities for softball, basketball, and baseball.

4. School Facilities - Tamanend Middle School, Barclay Elementary School, and Titus Elementary School have fields for baseball, soccer and basketball.

Warwick Township

1. Warwick Park - A 10-acre facility with areas for baseball, basketball, football, soccer, ice skating, picnicking, and tennis, and including playground and tot lot apparatus.

# PROVISION OF FACILITIES BY ALL LEVELS OF GOVERNMENT

ACTIVITY OR FACILITY	UPPER BUCKS			CENTRAL BUCKS			LOWER BUCKS			TOTAL COUNTY		
	FACILITY STANDARD REQUIREMENTS (number)	TOTAL EXISTING FACILITIES (number)	TOTAL % OF REQUIREMENT MET	FACILITY STANDARD REQUIREMENTS (number)	TOTAL EXISTING FACILITIES (number)	TOTAL % OF REQUIREMENT MET	FACILITY STANDARD REQUIREMENTS (number)	TOTAL EXISTING FACILITIES (number)	TOTAL % OF REQUIREMENT MET	FACILITY STANDARD REQUIREMENTS (number)	TOTAL EXISTING FACILITIES (number)	TOTAL % OF REQUIREMENT MET
SWIMMING POOLS	4	6	150	9	2	22	13	6	46	26	14	54
HIKING TRAILS (miles)	19	28	147	44	42.5	96	64	24.5	38	127	95	75
BICYCLE/JOGGING TRAILS (miles)	38	5	13	88	17	19	129	2.5	2	255	21.5	8
HORSEBACK RIDING TRAILS (miles)	12	9	75	28	11.2	40	41	9	30	81	29.2	36
EXERCISE TRAILS	10	--	--	24	1	4	34	1	3	68	2	3
CAMPSITES	254	64	25	589	9	1	858	--	--	1701	73	4
VOLLEYBALL COURTS	15	3	20	35	4	11	51	--	--	101	7	7
SOFTBALL FIELDS	15	10	67	35	22	63	51	26	51	101	58	57
TENNIS COURTS	38	26	68	88	24	27	129	44	34	255	94	37
PICNIC TABLES	608	790	130	1415	1176	83	2060	647	31	4083	2613	64
PICNIC SHELTERS	38	14	37	88	14	16	129	11	8	255	39	15
GOLF COURSES (9 HOLE)	3	--	--	7	--	--	10	1	10	20	1	5
GOLF COURSES (18 HOLE)	2	--	--	4	--	--	5	--	--	11	--	--
PLAYGROUNDS	76	18	24	177	30	17	257	32	12	510	80	16
MULTI-PURPOSE FIELDS (soccer & field hockey)	5	17	340	12	24	200	17	10	59	34	51	150
MULTI-RECREATION COURTS (basketball, bedminton, volleyball)	8	14	175	18	10	55	26	75	208	52	99	190

1 Facility requirements according to national standards based on population/facility ratio (using 1985 estimated population data)

2. Includes state, county, municipal facilities.

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## Population Trends

**Projected population growth means greater need for recreational facilities and services** • Future recreation needs will be determined by the population and character of the township in years to come. More people bring greater demands for recreational facilities and services. The nature of the population changes over time, as population growth in the nation goes through periods of "baby booms" and "baby busts" which result in changes in local recreational needs. In a period when the population is aging, the recreation plans should be geared toward activities which can be enjoyed by older residents. In a period when there is an increase in the younger age groups, more emphasis on playgrounds and active recreational facilities is called for.

**Past Population Growth** • Between 1940 and 1990, the total population of Doylestown Township grew from 1,471 to 14,510, an increase of nearly 800 percent. For each of the first two decades of that period, the rate of growth was steady at about 61 percent. Between 1960 and 1970, the rate increased to 74.3 percent. The growth rate peaked at 78.8 percent between 1970 and 1980.

The Township's population has grown 22.7 percent between 1980 and 1990, bringing the total to 14,510, according to the 1990 U.S. Census. The number of households in the township in 1990 was estimated at 4550, of which 3422 were families and the remainder were persons living alone or with one other unrelated person.

The county planning commission has projected a population increase of 6000 persons between 1990 and 2000 and approximately 2050 new dwelling units by the year 2000. Under plans already approved or in the approval process, some 1300 units are already committed or are likely to be submitted for approval.

If the population growth experienced by Doylestown Township is examined in terms of its impact on various age groups, conclusions can be drawn about the changing composition of the Township's population.

**Growth in young adult population and elderly population has been a recent trend** • Between 1970 and 1980, the 15 to 24 age group increased significantly for both males and females. There were 1,381 more 15 to 24-year-olds in 1980 than in 1970, which is a change of 158.7 percent. Since women in this age group are now of childbearing age, this change could have an impact on the number of births in the near future.

The elderly population also increased substantially during the 1970s, reflecting the effects of improved health care and longer life expectancy. Females over 65 increased by about 175 percent and the male population over 75 increased by more than 100 percent.

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Projections for the Township population indicate an increase in middle-aged households and elderly households • The projected population by age of household head for the township, prepared by the Bucks County Planning Commission, reveals the following trends in age groups. The Age Range refers to the number of households headed by persons within that age range. Although there will be an absolute increase in all age groups (i.e. the number of households in each age group will increase), the relative importance of each age group, in terms of its share of total households, is expected to change between now and the year 2000.

#### Age Range of Head of Household

15-24 years - This group is declining, relative to other age groups.

24-34 years - Although this age group increased during the 1980s, it is projected to decline substantially during the 1990s, relative to other age groups.

35-44 years - This group will increase faster than other age groups and will make up about 30 percent of all households by the year 2000, making it the largest single age group.

45-54 years- This group is showing some decline during the 1980s, but is expected to increase during the 1990s so that by the year 2000 it will make up about a quarter of the total Township households.

55-64 years - This age group will remain about the same compared with other age groups.

65+ years - This age group will increase in importance by the year 2000 and will account for about 15 percent of the total projected households by the year 2000.

**Changing household size also a factor** • Changes in household size affect the township's growth pattern. In 1990 the average household size was 2.99 persons. In 1980, the average number of people in a Doylestown Township household was 3.11, down from an average of 3.58 in 1970. This change reflects several factors affecting the general U.S. population: lower birth rate, more housing options for the elderly, and greater independence of young adults. If these trends continue, housing demand in the Township can be expected to surpass the rate of population growth.

**Planning for recreation facilities should take into account these projected changes in the population composition** • The projected increase in households where the adults are between the ages of 35 and 44 should be considered in planning for future recreation facilities. This

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household group contains adults and is likely to include school age and teenage children. Facilities geared to this group would include playing fields, facilities for active adult recreation, and areas for passive family-oriented activities.

The 45-54 age group will continue to be a significant component of the population (almost one quarter of the households will fall into this age group), and this group will benefit from facilities for adult active recreation as well as facilities for "lifetime" sports such as walking or swimming which have a high participation rate among this age group.



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## Recreational Programs

**Township Recreational Programs** • During the past five years, the Township Park and Recreation Board has sponsored activities which are designed to provide recreational opportunities and to promote community spirit. The Park and Recreation Board has planned, organized, and provided volunteers for all activities. In the few instances where paid employees are used, such as in the summer recreation program, these employees have been supervised by the Board. Approval for certain projects is required by the Board of Supervisors. In carrying out these programs no staffing problems have been encountered. Virtually all of the work involved in carrying out the programs has been done by the members of the Park and Recreation Board. Staff support has been provided for publicity and use of facilities.

### **Ice Skating Parties**

Years - 1986, 1987, 1988

Location - Sauerman Pond

Role of Park/Recreation Board - The P/RB organized the event; volunteers served refreshments.

Other Township personnel - Police and maintenance personnel were used.

### **Keep Pennsylvania Beautiful**

Years - 1986, 1988, 1989

Location - Sauerman Park

Role of Park/Recreation Board - Acquired materials; provided refreshments for Scouts; provided coordination with Scout Troop; provided T-shirts for Scouts

Description - Boy Scouts cleaned up debris at Sauerman Park; worked on a bridge walkway; cleared brush; planted bulbs. In 1987 Scouts built a trail around the pond; built bridges; arranged light poles around parking areas; laid out and built a nature trail. 1989: painted picnic tables; built frames for garbage cans.

Other Township personnel - none

### **Improvements to Turk I Fields**

Years - 1986

Location - Turk I Fields

Role of Park/Recreation Board - worked with Doylestown Athletic Association on improvements to the two baseball fields. DAA volunteers did the work.

### **Summer Recreation Program**

Years - 1986, 1987, 1988, 1989, 1990

Location - Kutz Elementary School; Delaware Valley College

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Role of Park/Recreation Board - Advisory to Board of Supervisors on staff, budget, site, program, and publicity.

Description - Program for school-aged children; program lasted four weeks but was expanded to five weeks. Arts, crafts, trips, activities.

Other Township personnel - Director; arts and crafts director; helper/aide. Township approved the staffing, budget and performed administrative duties such as fee collection, payment of bills.

In 1989 program was expanded to five weeks.

Cost to Township was difference between expenses and income received in fees for the program.

#### **Holiday Open House**

Years - 1986, 1987, 1988, 1989, 1990, 1991

Location - Township Building

Role of Park/Recreation Board - organized activity; coordinated participation of other township boards; provided some refreshments; provided publicity

Description - Event included the arrival of Santa Claus; tree lighting; music by Delaware Valley College Chorale or by Central Bucks East High School choirs; open house at Township building. In 1990 Toys for Tots was added, with the wrapping of gifts done by the Girl Scouts.

Other Township personnel - Police and fire personnel were used; other boards provided refreshments; set up tables for refreshments

Volunteers - In addition to those mentioned, contributions have been made for wrapping paper, Christmas tree, lights, and decorations.

#### **Tree Mulching**

Years - 1986, 1987

Location - Township Building

Role of Park/Recreation Board - organized program

Description - trees were brought to be mulched; mulch was used by township.

Other Township personnel - Maintenance personnel were used.

#### **Friendship Day**

Years - 1988

Location - Sauerman Park

Role of Park/Recreation Board - planned and organized event; distributed flyers; set up nets and provided the balls

Description - Volleyball/games at Sauerman Park

Other Township personnel - routine maintenance of the area

#### **Craft and Rummage Sale**

Years - 1988, 1989

Location - Township Building

Role of Park/Recreation Board - planned and organized event

Other Township personnel - Publicized event through newsletter

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### **Cooperation with School District**

Years - 1989

Description - Donated the use of two portable bleachers for Central Bucks School District for the football season.

### **Sauerman Park Improvements: Horseshoe Pit**

Years - 1990

Location - Sauerman Park

Role of Park/Recreation Board - Supervised the work of Boy Scouts; purchased sand and horseshoe equipment.

Description - Boy Scouts planned and installed a horseshoe pit at Sauerman Park

### **Bus Trips:**

#### **Penn State Football Game**

Years - 1990

Location - State College

Role of Park/Recreation Board - Initiated the concept; plan sponsored and approved by Board of Supervisors

Description - Township sponsored a bus trip to Penn State for a football game

Role of Township - Provided up-front money; publicized event in newsletter; collected the fees.

#### **Phantom of the Opera Theatre Trip**

Year - 1991

Location - Bus trip to New York City

Role of Park and Recreation Board - Supported and publicized the trip

Role of Township - Provided up-front money; publicized event in newsletter; collected the fees.

#### **Santa's Helper**

Years - 1990, 1991

Role of Park/Recreation Board - Board organized and publicized the program; volunteered to carried out program by talking with children

Description - The Board served as Santa's helpers and talked to children about Santa.

Other Township personnel - Township phones were used; publicized through the newsletter; received registration forms.

#### **Tennis Clinic**

Years - 1991

Role of Park/Recreation Board - Board organized and publicized the program; received permission from the Central Bucks School District to use school courts; Township retained tennis instructor

Description - The tennis clinic was designed for students of junior high school age. Classes were held for 2 hours each day for a two-week period at the courts at Central Bucks West High School.

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Other Township personnel - Registration was handled through the township office.

**Turk Park II Dedication**

Year - 1991

Role of Park/Recreation Board - Board organized and publicized the program; arranged for speakers, prizes for attendees, music, and food; got donations from many area merchants.

Description - Park dedication and community festivities, with speakers, prizes, food, sports demonstrations, and entertainment.

Other Township personnel - Township staff assisted with preparations.

**Role of Township Activities in Community** • The Township activities have fallen into three general categories: a summer program for elementary school aged children; activities of several different types which help to foster township spirit and a sense of community; and activities which work towards the improvement of township recreational and park facilities. These activities complement the recreational programs provided elsewhere in the community by other nonprofit and commercial groups. The township has continuously worked with both the County and the school district in a cooperative manner. The Summer Recreation Program and the Tennis Clinic are two examples of combining school facilities with township recreational programming efforts to develop a program to meet community needs.

**Recreational Programs Sponsored by Area Groups** • Numerous private and quasi-public organizations provide recreational opportunities to Township residents, apart from the activities sponsored by the Township. The list below is not meant to be a complete inventory of these activities; it is meant to provide an indication of some of the major program available.

1. Central Bucks YMCA - Located in Doylestown Township, the Y has indoor facilities for swimming, basketball, fitness training, and instruction. The Y operates a nursery school program, a day care program, and summer camps for general recreation and for specialized sports training. A year-round instructional program includes training in swimming, numerous sports, exercise classes, self-improved courses, and youth sports.

2. Boy Scouts and Girl Scouts - Many of the township young people participate in scouting activities which are sponsored by Scout organizations and which meet at area churches and institutions. The following Cub Scout and Boy Scout organizations operate in the area:

Pack 6 and Troop 6 - Doylestown Methodist Church, Doylestown Borough

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Pack 24 and Troop 24 - Doylestown Presbyterian Church, Doylestown Borough

Pack 52 and Troop 52 - Our Lady of Mount Carmel, Doylestown Borough

Pack 71 and Troop 71 - Kutz Elementary School Home and School Association, Turk Road in Doylestown Township

Pack 262 and Troop 262 - Meets at the Church of the Latter Day Saints on Pine Run Road, Doylestown Township.

Troop 135 for Handicapped Boys - Meets at Central Bucks YMCA in Doylestown Township.

Girl Scout and Brownie Troops operate in the area, with troops at Doylestown Methodist Church, Doyle Elementary School, and Kutz Elementary School.

3. Elementary School Activities - Many of the elementary schools in the area offer after-school activities and instruction during a portion of the year. Kutz Elementary school offers classes and special sports activities during the winter months.

4. Central Bucks Community School- The Community School uses the school district facilities for evening classes. There are two semester of classes offered during the school year, on topics which include: self-improvements, personal finances, home improvements, foreign languages, computer skills, home arts and hobbies, sports, bridge, boating, tennis, swimming, drivers' education, art, and trips and tours.

5. Doylestown Racquet Club - The Racquet Club is a tennis facility with indoor and outdoor courts, available for use by members only. The Club sponsor tennis competitions and offers tennis instruction

6. Doylestown Country Club - The Country Club is a private facility with a golf course, pool, clubhouse and dining hall, on a 90-acre tract in Doylestown Township. It is open to members and their guests only.

7. 4-H Clubs - There are no 4-H clubs which operate in Doylestown Township, but there are two which draw members from the Township area. These are the Buckingham Club and the Unami Club. The clubs offer instruction in home skills and crafts and provide recreation and community service opportunities.

8. Doylestown Athletic Association - The Doylestown Athletic Association (DAA) runs intramural athletic teams for children and youth. They sponsor organized teams in field hockey (girls), basketball (boys and girls), baseball (boys) and softball (girls). The 1990 participation in these teams is:

field hockey	95	softball	280
basketball	429	baseball	565

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Participants in DAA sports come from many area municipalities, not only Doylestown Township. Because they are the only association offering field hockey and boys basketball for high school aged boys, they draw from a wider area than just Doylestown.

9. Buckingham Athletic Association - The Buckingham Athletic Association (BAA) offers soccer programs in the spring and the fall, as well as winter basketball programs. Their total participation was 1097 children in 1990, of which approximately one-third come from Doylestown Township, according to BAA records.

10. Warrington Athletic Association - WAA operates baseball and soccer programs. Because Warrington Township is adjacent to Doylestown and because some residents in Doylestown have a Warrington mailing address, there is some participation in WAA programs by Doylestown Township residents. According to numbers provided by Warrington Township, between 4 and 9 percent of the participants in WAA programs are Doylestown Township residents. The WAA fall soccer program had an enrollment of 812 children, of which 37 were Doylestown residents.

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## Parkland and Recreation Needs

The township has grown rapidly in recent decades, and the pace of development can be expected to continue. Even if no more development plans were to be submitted, the level of development which can be projected based upon approved or pending plans will put unprecedented pressure upon the open space and recreational resources of the area.

**State Recreation Planning Program** • Doylestown Township is not unusual in this regard. Looking at the Pennsylvania Recreation Plan, 1986 - 1990 reveals that demand for local recreation will be increasing. This state Plan, in discussing future demand, makes the following observations:

1. Pennsylvania's population is getting older.
2. Pennsylvanians have less disposable income available due to inflation;
3. Because Pennsylvanians are getting older, there will be increased emphasis on year-round facilities and programs to satisfy the day-to-day recreation needs close to where people live; and,
4. The major responsibility of meeting this increased demand will fall upon the local communities to provide low cost recreation opportunities.

The State Recreation Plan goes on to evaluate needs in specific parts of the state. Based upon supply and demand in the Doylestown Township region, the Plan gives the following activities highest priority for future acquisition and development: bicycle path, picnic areas, hiking trails, playgrounds, sitting/passive areas, jogging areas, canoe launch and fishing areas, baseball fields, community centers, and basketball and softball areas.

**Bucks County Parks and Recreation Planning Program** • The Bucks County Commissioners adopted a County Park Plan in 1986. The emphasis on protection of natural resources and the provision of facilities to meet local recreation needs is consistent with the park planning goals for Doylestown Township.

The County Plan makes a specific recommendation regarding link parks (trails along stream valleys or other corridors which link open space or recreational facilities) within Doylestown Township. The County Park Plan shows two link parks, one along the Neshaminy and one along Pine Run, which the township acknowledges and seeks to implement. The Township has successfully gotten easements for some sections of the link park along the Neshaminy. Township policy aimed at keeping the Pine Run area natural and undeveloped will assist in the achievement of that link park. According to the County Plan, the

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Neshaminy link park is a second priority park while the Pine Run link is a third priority. The township has sought to get specific design standards from the County for the width of the easement and has been told that 100 feet is the minimum easement which would be desirable to accommodate a trail.

The County Plan identified specific facility needs within the Central Bucks County area. These are listed on the following page and were taken into consideration in township park plans.

**Organized Athletic Associations** • In addition to this survey, special public meetings with the Board of Supervisors were held in March, 1988, April, 1989, and February, 1991, to gather information regarding recreational needs from the organized athletic associations which provide services to youth in Doylestown Township. All of these meetings were well-attended, and the outcome of the sessions was a conclusion that there is a need for additional fields. Representatives from organized groups and from the community as a whole articulated their concerns about the need for areas where the youth of the community can engage in organized and informal sports activities.

An outcome of these meetings was the conclusion that there is a need to coordinate the actions of the various athletic associations, the local governments, and the school district to improve the availability of facilities and fields for youth sports.

The Township took a leadership role in getting together the central Bucks County municipalities, local athletic associations, school district representatives, and County Park Board representatives at a meeting in the Bucks County Courthouse in September, 1991, to discuss future facility needs, current use patterns, availability of fields, maintenance needs, cooperative arrangements, and other issue of common concern. The group, called the Central Bucks Athletic Council, will continue to meet for the purposes of cooperation and improvement of park and recreational facilities. This effort will be taken into account in the planning and administration of facilities.

**Applying National Park and Recreational Standards to Determine Township Needs** • There are national standards prepared by the National Recreation and Park Association and other analysts of recreational needs which are commonly used as guidelines for determining local needs, with the caveat that they must be carefully applied to reflect local cultural, socioeconomic, and density conditions. Some recreational needs are met within individual neighborhoods in back yards and on the streets. But some recreational needs of suburban areas, such as the need for playing fields for organized sports, can only be accommodated through public action.



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## National Recreation and Park Association Standards

Facility Type	Service Area	Ideal Size	Acres of land per 1000 population
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### *LOCAL/CLOSE-TO-HOME SPACE*

Mini-Park - Special facilities in densely populated areas	1/4 mile or less	1 acre	.25 - .5
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Neighborhood Park/ Playground - Area for recreational activities such as field games, crafts, playground apparatus, picnicking, skating.	1/2 - 3/4 mile radius	15 acres	1 - 2.5
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Community Park - Athletic complexes, swimming pools, natural areas, walking trails, sitting areas.	1-2 miles	25 acres	5 - 8
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Conservancy Land - Protection and management of the natural/cultural environment with recreation use as a secondary objective.	No standard	Sufficient to protect the resource	Variable
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### *SPACE THAT MAY BE LOCAL OR REGIONAL AND IS UNIQUE TO EACH COMMUNITY*

Linear Park - Area developed for recreational travel: hiking, biking, riding, cross-country skiing, canoeing	No standard	Sufficient width to protect resource and provide maximum use.	Variable
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Special Use - Specialized single purpose recreational facility such as golf course, nature center, conservancy, outdoor theater, gun ranges, plazas or squares, historic sites.	No standard	Variable	Variable
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Source: Standards of the National Recreation and Park Association, 1983

DOYLESTOWN TOWNSHIP		PARKLAND NEEDS :		1990 AND 2000		TOTAL NEEDS: All types of Park lands
Type of Park	Mini-Parks	Neighborhood Park	Community Park	Neighborhood Park	Community Park	
<u>NRPA Standard</u>	.25 - .5 acres per 1000 population	1 - 2.5 acres per 1000 population	5-8 acres per 1000 pop.	5-8 acres per 1000 population	5-8 acres per 1000 pop.	6.25 to 11 acres per 1000 persons
<u>Acres needed for 14,500 people (1990 population) now</u>	3.6 - 7.2 acres	14 - 36 acres	72 - 116 acres	14 - 36 acres	72 - 116 acres	
<u>Acres provided in 1991</u>	1.5 acres of private recreation in Westwyk; serves 300 people Additional facilities to be provided at Doylestown Commons to serve 300 people	13 acres at Sauerman Park	26* acres at Turk I and Turk II (Twp./County partnership) 20** acres next to twp. building 25*** acres at Neamand tract Total = 71 acres			
<u>Difference between supply and need: Current Parkland Deficit</u>	2 - 6 acres needed	1 - 23 acres needed	1 - 45 acres needed			4 - 74 acres required to meet current park needs
<u>Acres to be needed by 2000 for 20,000 population: Future Parkland Needs</u>	Total of 5 - 10 acres Potential deficit of 4 - 8 acres	Total of 20 - 50 acres needed Potential deficit of 7 - 37 acres by year 2000	Total of 100-160 acres needed Potential deficit of 29 - 89 acres by year 2000			40 - 134 acres required to meet park needs in 2000.
<u>Recommendations</u>	Meet needs within high density multifamily development on the site; for single family residential development, meet need with community parks and through cooperation with school district.	Meet future needs within new developments; a portion of potential need is met by school facilities.	Acquire land in central portion of township through the development process to supplement township central park. Complete development of Neamand tract and central township park.			

\* The land is owned by the County and leased to the township. It may not a permanent part of the park system and should be viewed accordingly.

Reference: National Recreation and Park Association Standards (NRPA), 1983

\*\* This figure assumes that 20 acres of the township property will be developed for park use.

\*\*\* This assumes that a portion of the Neamand tract will be developed and can be used for recreation.

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These standards can be applied to Doylestown Township, based upon the availability of land to meet recreational needs. The chart which follows shows the National Recreation and Park Association standard for each of the three types of parks. This standard is then compared with what exists in Doylestown Township; examines what is needed now to meet the standard; and projects what land needs will be in the future based upon expected population growth. In evaluating this statement of need and projected need, the township should keep in mind that this is a guideline, which must be examined with local population needs in mind. The range of acreages given provides some leeway to take into account individual community needs. The conclusions for Doylestown Township are as follows:

- There is a deficit of 46 to 119 acres of parkland at the present time. Land has recently been acquired for the central park which, when developed, will reduce this overall township deficit. Use of the Neamand tract for parkland will, when combined with the central park, bring the township close to meeting national standards. If a significant portion of each of these potential recreation areas is developed, then the current deficit can be reduced to between 1 and 74 acres. This assumes the use of 20 acres at the township complex and 25 acres on the Neamand Tract.
- By the year 2000, there will be a deficit of 40-134 parkland acres to serve the projected population of 20,000 people. This figure assumes that the development of parkland next to the township building and on the Neamand tract will be completed by that time. Without these improvements, the deficit would be increased accordingly.

**Needs for Facilities and Recreational Programs** • The specific program and facility needs will in part be determined by the results of the citizen survey. In addition to the survey information, which follows in a later section, there are guidelines which are used in most communities to help them determine what their recreational facility needs are. To some degree, these must be modified by the specific needs of the township and by the needs of the population to be served. Goals for Doylestown Township were based upon the recommendations of the Township Park and Recreation Board.

**Recreation Facilities  
Doylestown Township - 1992**

The chart below compares the recreational facilities in Doylestown Township in 1992 with the recommended national standards for recreational facilities. Township needs should be determined not only on national standards but on perceived local requirements. The column, "Goal for Doylestown by 2000," is based upon the consensus of Park and Recreation Board members, as determined in November, 1991.

Activity/Facility	Needed per Population	For 14,500	For 20,000	Existing in Twp.	Goal for Doylestown by 2000
Basketball Courts	1 per 5000	2	4	0	4
Handball	1 per 20,000	--	--	0	0
Tennis	1 per 2000	7	10	6	6
Volleyball	1 per 5000	2	4	2	2
Baseball	1 per 5000	2	4	2	2
Field Hockey	1 per 20,000	--	1	1	0
Football	1 per 20,000	--	1	1	0
Soccer	1 per 10,000	1	2	2	2
1/4 mile running track	1 per 20,000	--	1	1	1
Softball	1 per 5000	2	4	3*	0
Multiple use court	1 per 10,000	1	2	0	2
Trails	1 per region	--	--	0	1
Swimming Pool	1 per 20,000	--	1	FC**	1
Playground Apparatus	Part of neighborhood park area		2	2	2
Bicycle Path	no standard	--	--	0	1
Community Center	no standard	--	--	0	1
Picnic Areas	no standard	--	--	1	2

\* Includes two fields at Turk Field and one at Kutz Elementary School

\*\* Fanny Chapman serves a population of 71,164 (1990 figure) which includes the Central Bucks School District municipalities. Warrington had a population of 12,169 in 1990 and has its own municipal pool. There are a few private pools which serve individual developments.

\*\*\* Proposed County Link Park along the Neshaminy Creek will meet this goal.

Source for standards: *National Recreation and Park Association, 1983*

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## Estimated Cost to Meet Year 2000 Goals

In order to assist in establishing priorities, estimates of the total cost of developing the facilities listed in the preceding chart have been made. This cost does not include land acquisition and is based only on the estimated cost of developing these facilities. The substantial cost of these facilities suggests that priority should be given to those for which a strong resident preference has been expressed, through the survey results.

4 basketball courts @ \$18,000 each	\$72,000
6 tennis courts @ \$25,000 each	\$150,000
2 volleyball courts @ \$1000 each	\$2,000
2 baseball fields @ \$65,000 each	\$130,000
2 soccer fields @ \$55,000 each	\$110,000
1/4 mile running track @ \$9 per linear foot	\$11,880
2 multi-use courts @ \$9,000 each	\$18,000
2 playgrounds - assuming 4 pieces of equipment each	\$9,600
bike path - 2 miles @ \$12 per foot	\$126,720
2 picnic areas - tables and grills	\$30,000
Subtotal	\$660,200

Additional Costs: In addition to the facilities, there are associated costs for: parking areas, signs, landscaping, trash receptacles, bicycle racks, any land acquisition costs, fencing, drainages improvements, access roads, benches for athletic fields, specialized maintenance equipment needed, surveying and engineering fees. The costs for the following the proposed swimming pool and community center cannot be estimated due to the variation in size and facilities to be included.

Some costs can be reduced through the use of volunteers and donations; the township continues to welcome such assistance.

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## Needs for Facilities and Recreational Programs

The specific program and facility needs should be determined by the results of the citizen survey, consideration of national standards for parks and recreation, the availability of programs sponsored by other groups in the community, the needs for youth athletic programs, and the financial ability of the township to undertake programs and facilities development.

The wishes of the citizens were expressed through the survey of residents during 1991. Based upon the compilation of results, representing 41 percent of the township households, conclusions can be made regarding the wishes of the community for recreational facilities and programs. The survey questionnaire was developed under the guidance of the Park and Recreation Board to gain insight into the community desires and perceptions of recreational needs. The complete questionnaire and brief summary and a complete report of the results of the survey are given below.

### Facilities Use

1. Township residents participate most in individual recreational activities, such as walking, bicycling, swimming, and aerobics, as opposed to organized team sports. This is true for both adults and children.

2. The facilities which were judged to be most important were: jogging/walking trails, bicycle trails, and open space for passive recreation. The facilities which ranked lowest in terms of need and priority were fields for organized sports, including football, softball, baseball, and volleyball.

3. The citizens responding to the survey expressed support for additional outdoor recreation facilities, for the preservation of open space, and for a community center. There were significant "write-in" comments supporting a golf course or a driving range.

4. Citizens tended to feel uninformed about the recreational opportunities in the township.

### Program Preferences

Interest in recreational programs was strong in the area of exercise classes, swimming, arts and crafts, and teen activities.

### Objective, Results, and Methodology

The citizen survey questionnaire and report is provided in the appendix. It describes the methods and results of the survey in detail.

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## Recommendations for Facilities and Programs Based upon Survey Results

**1. Plan to meet the needs of residents who use or desire trails for walking, jogging and bicycling.**

Discussion: The survey results confirm what other state or national studies and surveys have shown: that people are concentrating more on individual activities to maintain personal fitness through walking, biking, swimming, and running, and on passive activities, such as picnicking, which can occur in natural open space areas.

Opportunities for Implementation: Four projects should receive priority in order to meet these needs.

- Proceed to develop a site plan for the Neamand Tract park which will incorporate walking areas along the stream and areas for sitting and picnicking.
- Serve as a catalyst to the development of the proposed Bucks County Neshaminy Link Park along the Neshaminy stream. The township has cooperated with this in securing easements where possible. The Township should work with the County Park Board and the Neshaminy Watershed Association to actually implement this project.
- Designate a portion of the new township park site for a future swimming pool.
- Require the installation of sidewalks along internal and external roads in new developments.
- Establish a path system which incorporates possible bicycle routes, sidewalks, and other walkways to connect neighborhoods, recreation areas, and natural areas.

**2. Make long-term provisions for a community center which could be used for classes (exercise, arts and crafts, etc.), for youth activities, and cultural events, all of which were mentioned by residents responding to the survey.**

Discussion and Implementation: The proposed recreation site adjacent to the township building is a logical area for a future community center. This should be designated as a long-term goal and land should be reserved in the site plan for a future multi-purpose community building.

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3. Continue to organize programs and field trips through analysis of potential demand.

Discussion and Implementation: The survey indicated above-average interest in field trips, concerts, and classes of various types. Activities involving field trips or concerts can be sponsored by the township without competing with other organized groups. Programs can be offered and their success evaluated as a basis for future program planning.

4. Consider not only citizen preferences but also the needs for organized sports in setting goals for the new township park. Some active recreation facilities should be planned in order to address needs for fields and courts.

Discussion and Implementation: The Township should continue to participate in the organization of central Bucks townships, school district, and athletic organizations which is working toward providing fields for active recreation through coordinated efforts. Some consideration should be given to establishing new fields as the township grows.

5. Upgrade the public relations and publicity programs for the park and recreation program; publish a brochure and map showing township facilities.



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## Methods to Meet Future Park and Open Space Needs

The primary methods used to preserve land for open space and for recreation are as follows:

1. Acquisition through purchase
2. Acquisition through land development techniques, such as clustering, which result in open space
3. Mandatory dedication of land for recreational purposes, under the guidelines of the Pennsylvania Municipalities Planning Code
4. Acquisition and development through public or private grants
5. Private donations

### Acquisition through Purchase

Acquiring land through purchase is the way in which many communities have set aside land for open space and recreation. This results in the permanent establishment of land for park and recreational purposes. Doylestown Township in 1991 agreed to purchase 100 acres from Delaware Valley College in the central part of the township, with a portion of it earmarked for open space and recreation.

Financing large purchases can be accomplished through the imposition of a recreation tax of up to 3 mills which can be enacted by Pennsylvania townships.

### Acquisition through Land Development Techniques

Land development techniques can be used to preserve open space by allowing for the clustering of buildings in one portion of a site in exchange for the permanent preservation of land elsewhere on the site. Typically this occurs by allowing in the zoning ordinance for a reduction of the minimum lot size in exchange for an open space requirement. The open space usually includes the unbuildable areas because the clustering approach is also viewed as a way of preserving significant environmental features such as floodplains, wetlands, and woodlands.

Background: Doylestown's current zoning ordinance has a cluster option under which lot sizes can be reduced from 40,000 square feet to 30,000 square feet where there is an open space set-aside of 25 percent of the land area. There is also a lot averaging provision where further lot reductions can be achieved if more open space is set aside.

When these provisions were drafted, the township made two specific decisions. The first was that there should be no density bonus for clustering; that is, there should be no more houses permitted under the cluster option than under the conventional lot option. Secondly, the

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By using these criteria, the township can be prepared to discuss open space opportunities with developers in the early stages of land development.

It is important to keep in mind that if land is dedicated in exchange for the permission to cluster, this is not mandatory dedication (as described below). This is merely a rearrangement of permitted development on the property.

### Mandatory Dedication

The Pennsylvania Municipalities Planning Code allows for the township subdivision/land development ordinance to contain language requiring the dedication of land for public recreational purposes. As an alternative, if the township and the developer agree, the developer may accomplish one or more of the following in place of the public land dedication:

1. construct recreational facilities
2. pay fees in place of land dedication or
3. reserve land in private ownership

The township, in order to impose this requirement, must meet the following standards:

1. cannot apply these requirements to pending plans
2. the ordinance must include "definitive standards" for amounts of land or fees to be dedicated. According to the state, these standards are generally accepted to be the National Recreation and Park Association standards included in this plan.
3. The land or fees shall only be used to provided facilities "accessible to the development."
4. There must be an adopted Recreation Plan.
5. The amount and location of land or fees must bear a "reasonable relationship" to the use of the facilities by future inhabitants.
6. Fees from each development shall be designated for specific recreation facilities and shall only be spent for those specific facilities.
7. If the township does not use the fees within 3 years after they are paid, the person who paid the fees may, upon request, receive a refund including interest earned.
8. The township cannot require the dedication of land, fees or facilities except in accordance with these standards.

Recommendation: The township subdivision/land development ordinance should include provisions for mandatory dedication. These should be based on the standards of the National Recreation and Park Association.

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township did not wish to reduce lot sizes to less than 30,000 square feet in the cluster.

Recommendation: As the amount of available land diminishes and the large tracts of land are committed, it is advisable to re-examine the cluster approach. No open space has been set aside for the township under the cluster option; the Neamand tract used the lot averaging approach which has resulted in 44 acres of floodplain land along the Neshaminy Creek which has been dedicated to the township.

It is recommended that the cluster option in the zoning ordinance be revised to allow for:

- smaller lots in cluster developments
- higher open space ratios
- some percentage of land set aside should be "buildable"
- a density bonus should be provided so that the cluster option is encouraged.

Guidelines for Land Preserved in Clusters : The township has developed a site evaluation method which should be used in determining where land set aside should be located. The criteria which the Park and Recreation Board have identified as being significant in evaluating open space and recreational potential are listed below.

1. Location - The location of land in relation to the township population and in relation to open space and recreational areas is important.
2. Acreage and configuration - Land should be of a size and configuration to be suitable for intended recreational uses.
3. Access - Land must be accessible by foot and by vehicle to make it usable for recreation purposes.
4. Topography - Land to be used for active recreation should be topographically suited for use and for development of facilities.
5. Environmental constraints - Land to be used for active recreation should be usable for that purpose and should not be encumbered by wetlands, steep slopes or valued woodlands which would have to be disturbed.
6. Existing structures - Properties to be considered for park and recreational use may have existing structures which would enhance the recreational potential and should be considered.

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The Township's future needs for parkland and recreation facilities will depend upon the future population growth, which has been determined by examining 1990 population and projections for the year 2000.

It is the intent of the Township to require new development to meet, either through land set aside for recreation or by means of a fee in lieu of dedication, the local and community recreational needs of the population to be added by this new development. The formula for setting the requirements does not attempt to place the burden of meeting past recreational needs on new development.

The U.S. Census has estimated that the 1990 population of Doylestown Township is 14,510 persons. The total housing units have been enumerated at 4,843. The average household size is 2.99 persons per household.

Standards for park and recreational needs have been recommended by the National Park and Recreation Association and illustrated in this report. Although these standards address recreation needs at all levels (regional needs, etc.), the purpose of the township requirements is to meet the recreation needs for neighborhood and community recreation areas.

These local facilities, described earlier are summarized below:

Mini-Park - Specialized facilities such as tot lots or areas for senior citizens.

Service Area - less than 1/4 mile

Size - 1 acre or less

Acres per 1000 population - .25 to .5 acres

Neighborhood Park - Area for intense recreational activities such as field games, court games, crafts, playground apparatus, skating, picnicking, wading pools, etc.

Service Area - 1/4 to 1/2 mile radius

Size - 15 acres

Acres per 1000 population - 1 to 2.5 acres

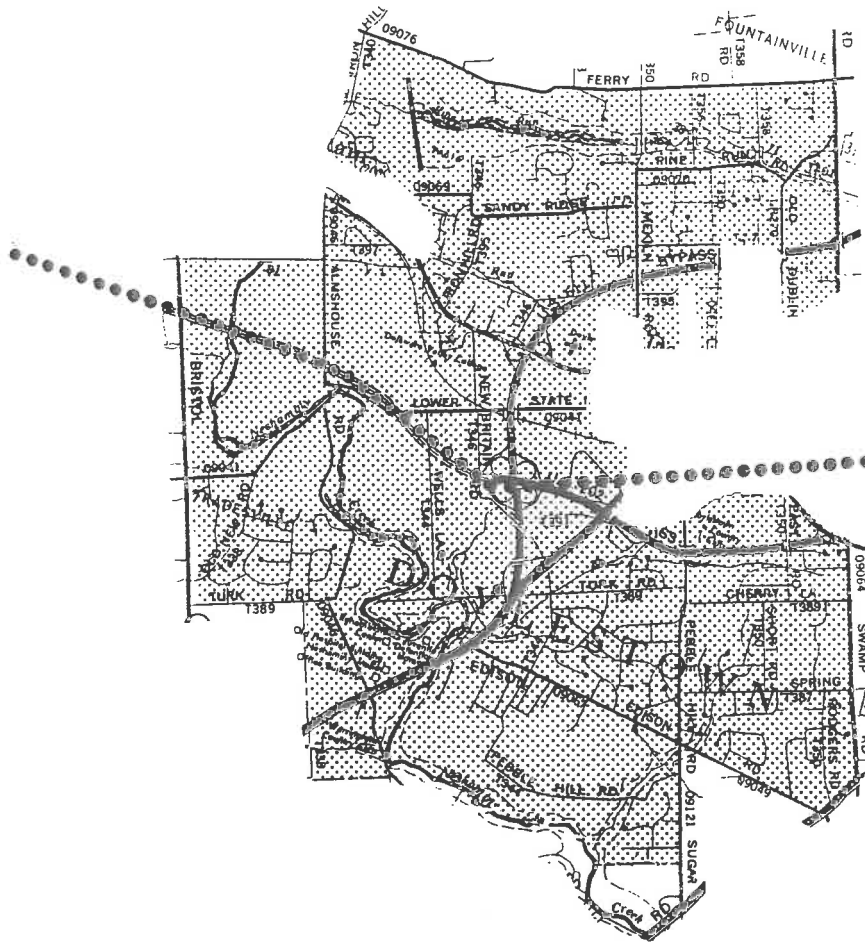
Community Park - Areas of diverse environmental quality. May include areas suited for intense recreational facilities, such as athletic complexes, large swimming pools. May be an area of natural quality for outdoor recreation, such as walking, viewing, sitting, picnicking. May be any combination of the above, depending on site characteristics and community need.

Service Area - 1 to 2 miles

# Service Areas for Community Park and for Neighborhood/Mini Parks

COMMUNITY PARK 

NEIGHBORHOOD PARKS 



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Size - 25+ acres

Acres per 1000 population - 5 to 8 acres

In summary, the Township should strive to provide a total of 6.25 to 11 acres of recreation land per 1000 population to meet mini-park, neighborhood and community park needs. This range is the sum of the recommended acreage for each type of park for every 1000 persons. It is recommended that the Township set a standard of providing 11 acres per 1000 population.

Recreational Need = 11 acres per 1000 population

Average household size in 1990 = 2.988 persons per household

Recreational Need = 11 acres per 334.67 households

(1000 persons ÷ 2.988 persons per household = 334.67 households)

Recreational need per household = 11 acres ÷ 334.67 households = .0328 acres per household or dwelling unit.

Based upon the projected population for the Township between 1990 and 2000, the township could expect to receive donations of between 57 and 96 acres within the next 10 years, depending upon the number of housing units constructed.

Land to be dedicated should meet the township standards to ensure that it is usable for recreation and accessible to residents of the Township.

**Land Suitability and Use: Site Evaluation Committee** • All land set aside for recreation should be suitable to serve the purpose of active or passive recreation. The size, shape, location, and topography should be evaluated by the Park and Recreation Board and the Board of Supervisors.

The Park and Recreation Board subcommittee on Site Evaluation undertook a review of all major vacant tracts of land in the township during 1991. The Committee's goals were to gain an understanding of each open parcel in the township, to create an inventory of open lands, and to evaluate each parcel on the basis of standardized criteria. Future use of the evaluations may be made when the township moves to acquire additional land, either through purchase, mandatory dedication, clustering, or other techniques. Specific methodology and rating systems are included in the appendix to this plan.

Twenty sites were visited and evaluated. The sites ranged in size from 7 acres to 190 acres. Because of the differences in size, location, topography, site restrictions, and site opportunities, different sites

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have different types of recreational potential. Potential recreational use has been noted by the Site Evaluation Committee.

In addition to the Site Evaluation data, the following criteria should be considered in choosing recreational locations. These criteria are part of the township Subdivision/Land Development Ordinance.

a. Sites should be easily and safely accessible, have good ingress and egress and have access to a public road; however, no public road shall traverse the sites.

b. Site should have suitable topography for the development as a particular type of recreation area.

c. Size and shape of the site should be suitable for the development as a recreation area.

d. Site should meet the minimum size with respect to usable acreage.

e. Sites designated for recreation land shall not contain lands with natural resources restrictions, as defined by the zoning ordinance, stormwater detention facilities, or lands designated for any other purpose.

f. The configuration of the recreation area must be able to accommodate recreation activities. The required area shall not include narrow or irregular pieces which are remnants from lotting and/or street and parking areas.

**Fee in Lieu of Recreational Land** • Under the guidelines of the Pennsylvania Municipalities Planning Code, the township can accept a fee in lieu of the dedication of parkland if the developer agrees to this approach, or can accept a combination of land and money, as long as the value of land and money does not exceed the value of the land alone. In addition, the developer may agree to dedicate a lesser amount of land and to develop the property for recreational use, again as long as the total value does not exceed the value of the land which would be required and the developer agrees to such an approach.

If a fee is to be accepted instead of land, the fee should be based upon the market value of the land which would be required to be dedicated under the mandatory dedication provisions described above.

Such funds would not be used to maintain existing facilities but must be used to purchase new parkland or equipment for parks which will serve the residents of the proposed development for which the fee was collected.

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Funds collected in this manner must be used within three years of the date the fee was collected. It also must be used for facilities which bear a reasonable relationship to the future inhabitants of the development or subdivision from which the fee came. The attached map shows the service radius for the three types of parks -- mini-park, neighborhood park, and community park -- for which the township should be responsible.

In order to determine the fee-in-lieu of dedication, the township should determine the fair market value of land and base the fee on the value of land which would have to be dedicated.

For the purpose of an example only, it can be assumed that the fair market value of a vacant, unimproved residentially zoned acre of land in Doylestown Township is \$45,000. If the obligation for dedication is 0.0328 acres per unit, the obligation in terms of a fee would be \$1476 per dwelling unit. ( $\$45,000 \text{ per acre} \times 0.0328 \text{ acres} = \$1476$ )

Fees collected can be used for land acquisition of properties which will be accessible to new residents (i.e. within the service radii recommended by NRPA) or for park equipment and improvements in accordance with the goals and programs of the township.

#### **Public or Private Grant Funding**

The township can consider applying for grants from either the State (the Recreation Improvement and Rehabilitation Act or RIRA program) or from private foundations which may assist in acquisition or development.



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## Recommendations for Implementation of Park Plan

The preceding sections suggest that the township should enhance its park and recreation facilities and programs to meet the needs of the growing population. A good open space and recreation program can do many things for a community, including the enhancement of property values, the creation of sense of community by bringing people together, the enrichment of community life, and the education of children in constructive use of leisure time. As the township continues to grow into a community where quality of life is an important goal of government, it becomes important to elevate the park and recreation considerations so that they are reviewed as thoroughly as public safety or highway needs.

### A. Recommendations for the future acquisition and development of parks and recreational facilities are listed below.

1. Develop a master site development plan for the use and improvements to the Central Park to be established next to the township building.
  - a. Determine amount of land to be devoted to recreational use.
  - b. Conduct a site analysis to determine areas most suited for use in fields, walking trails, etc.
  - c. Consider the survey results when setting priorities for development of facilities: specifically, preferences for a pool and community center, as well as interest in walking and biking trails.
  - d. Consider overall township demographics and observed needs for recreational facilities.
2. Develop a concept plan for the Neamand Tract Park which takes into account the environmental features and opportunities for stream access.
  - a. Define public parkland and pedestrian access ways by means of a split rail fence.
  - b. Plan for access from Lower State Road with gravel parking area. If this is not possible, establish park entrance at point where the township lands abut public streets in the Doylestown Crossing development.

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- c. Establish trails along the stream and areas for walking and sitting.
  - d. Investigate possible usage for nature education programs through the township or school district.
3. Continue to pursue access point to the Neshaminy Creek at Edison Village in conjunction with on-going township study of Edison.
  4. Continue to help implement the Bucks County Park Plan Link Park by working with landowners through the development process to get easements for a trail network.
  5. Work toward a trail system through the township for walking and biking which would provide pedestrian connections between neighborhoods and park/recreation areas.

**B. Recommendations for implementation and for continued management of park and recreation functions are listed below.**

1. The Park and Recreation Board can continue to play an advisory role on recreational programs; land acquisition needs; development of park facilities.
2. The Park and Recreation Board should be asked to review proposed subdivision and land developments and provide comments on open space and recreational needs associated with new development where appropriate.
3. The Park and Recreation Board should serve as a liaison between the athletic associations, the school district, and the Board of Supervisors.
4. The Township should continue coordination and cooperation with the school district on use of school facilities. The school facilities -- particularly playing fields and tennis courts -- are important elements in the recreational facility system. Similarly, there may be ways in which township facilities may serve the school district. The development of passive recreation areas along the Neshaminy at the Neamand Tract may be used for nature education or class outings.
5. The township should continue to provide a staff liaison to the Park and Recreation Board to ensure proper staff support for Park and Recreation Board functions.
6. Future staffing needs should be evaluated periodically in light of the actual workload associated with park and recreation functions.

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Although the "rule of thumb" for park administrators suggests that a park and recreation director is needed once a community reaches a population of 25,000 people, there is much variation on this. Some communities with more than 25,000 people are able to adequately run recreation programs and facility development with part-time personnel and volunteer help from the Park and Recreation Board. An appendix lists the possible functions of park and recreation staff persons and some guidelines on personnel needs.

7. Institute of five-year capital program for township expenditures associated with parks and recreation. The Park Board should initiate a long-term budgeting tool for the development of the Neamand tract, development of the central park facility, and any additional acquisition needed. By looking at the long-term financial needs of the park system, the township can schedule capital expenses over a longer period and can provide a more predictable estimate of annual expenditures needed to accomplish long-range goals.

8. Evaluate user fees for recreational programs which cover costs adequately. Township-sponsored recreation is often less expensive than privately provided recreation, but it should be priced to cover programs costs and administrative costs.

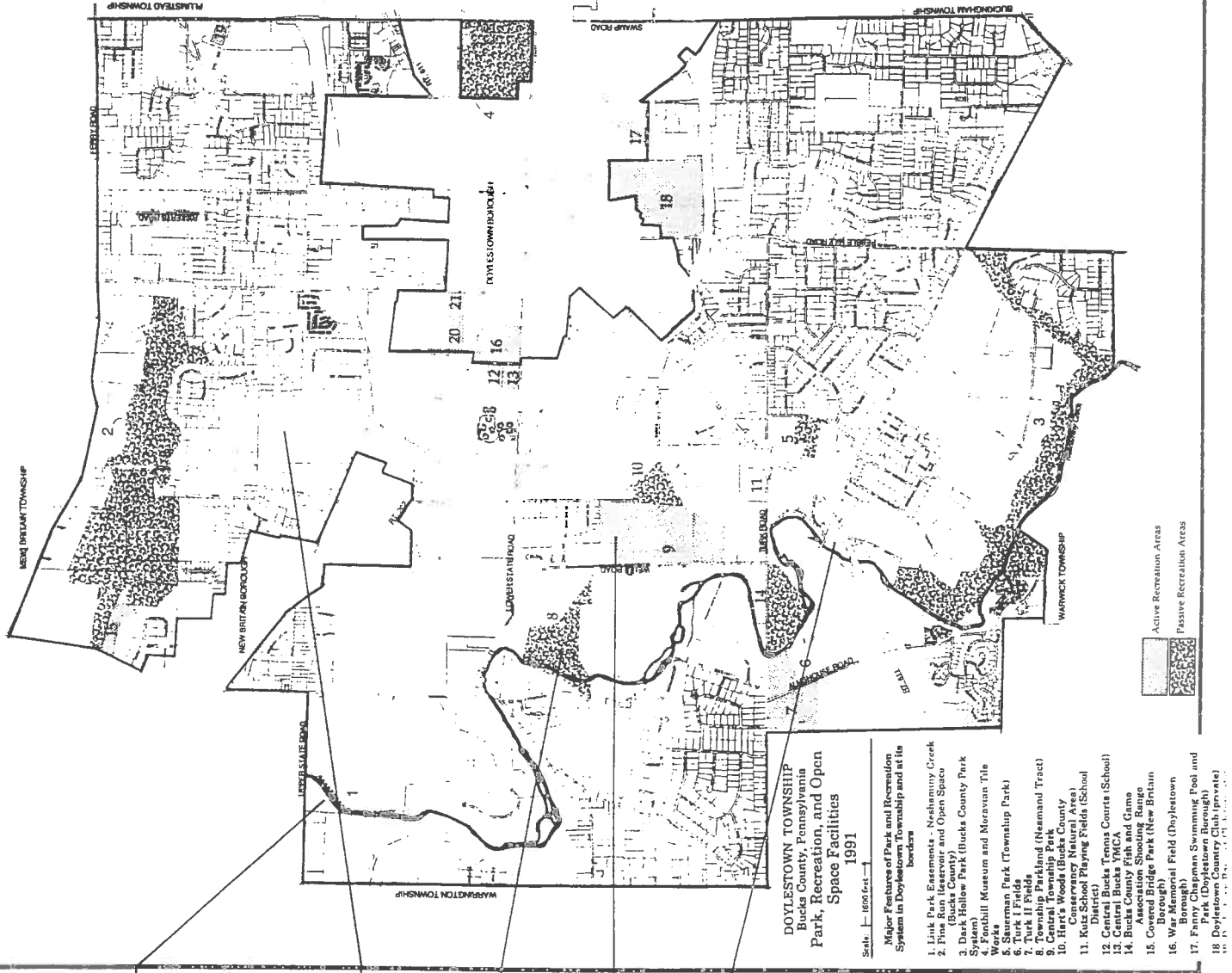
9. Encourage intermunicipal cooperation. The township has initiated an important cooperative effort with other communities in Central Bucks County to coordinate and plan for future recreational needs. The township should also work on cooperation with nearby municipalities, such as New Britain Borough and Doylestown Borough on joint programs and use of facilities.

10. Adopt the necessary ordinance amendments to implement mandatory dedication.

11. Pursue other acquisition methods, including revised clustering approaches and funding sources.

## Park and Recreation Plan RECOMMENDATIONS FOR FUTURE ACTION

1. Continue to acquire easements and/or land along the Neshaminy Creek; work with Bucks County to develop a path system.
2. Adopt necessary ordinances to implement mandatory dedication of recreation land; use the development process to establish a neighborhood park in the northern half of the township. Use resident survey results to determine components of the park.
3. Develop a master plan for the Neamand tract open space, providing access to the Neshaminy, walking trails, and passive recreation areas.
4. Develop a master plan for the township central park; use resident survey results to determine components of the park.
5. Establish creekside park area in Edison Village. Investigate potential uses of stone building on the site.
6. Continue to support intermunicipal cooperation to meet need for fields and active recreation facilities.
7. Review zoning requirements for cluster development to encourage greater open space preservation.
8. When planning for future facilities and programs, keep in mind resident preferences for walking, bicycling, jogging, and other activities geared to individual fitness.



## Appendices:

1. Bucks County Park and Recreation Facilities Serving Doylestown Township Residents
2. Citizen Questionnaire and Survey Results

# BUCKS COUNTY PARK AREAS & RECREATIONAL FACILITIES

PARK	TYPE PARK <sup>1</sup>	ACRES	FISHING SHORELINE	TRAILS <sup>2</sup>			PICNIC TABLES	PICNIC SHELTERS	CAMPSITES	TENNIS COURTS	SWIMMING POOLS <sup>3</sup>	GOLF COURSE	BOATING AREA <sup>3</sup>	BOAT RAMPS	CABINS	BASEBALL	SOFTBALL	FOOTBALL	PLAY EQUIPMENT	BASKETBALL	VOLLEYBALL	SHUFFLEBOARD	EXERCISE TRAIL
				HIKING	BICYCLING	HORSE																	
BLACK DITCH	L	97.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-
CORE CREEK	R	1185.0	3.45	3.0	1.02	9.0	161	6	8	-	-	-	155	1	-	-	3	-	1	1	-	1	-
CHURCHVILLE	SU	169.7	-	2.5	-	2.2	10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DELAWARE RIVER ACC.	SU	8.0	0.14	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-
FALLSINGTON	SU	16.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
FONTHILL (leased)	SU	67.0	-	0.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
FROSTY HOLLOW	C	95.0	-	-	-	-	-	-	10	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HAL H. CLARK	SU	27.5	0.21	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LAKE TOWHEE	R	501.8	0.98	1.3	-	-	50	2	17	-	-	-	27	1	-	-	-	-	-	-	-	-	-
OXFORD VALLEY	R	234.5	0.6	-	-	-	3	-	-	-	0.33	1*	-	-	-	1	1	1	-	-	-	-	-
PEACE VALLEY	R	1524.0	5.68	11.0	3.5	2.0	123	2	-	-	-	-	365	3	-	2	2	2	2	1	2	-	-
PLAYWICKI	C	32.6	0.94	0.4	-	-	20	2	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-
PRAHL'S ISLAND	SU	88.4	0.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QUEEN ANNE	L	159.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
RINGING ROCKS	SU	65.2	-	0.3	-	-	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SILVER LAKE	R	291.0	1.8	3.0	1.45	-	25	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
STOVER-MYERS MILL	SU	22.0	0.2	0.2	-	-	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TILE WORKS	SU	10.5	-	-	-	-	10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TINICUM	R	126.6	0.2	-	-	-	25	2	8	-	-	-	-	1	-	-	-	-	-	-	-	-	-
TOHICKON VALLEY	R	535.2	3.7	2.7	-	-	50	1	28	-	0.05	-	-	4	-	-	1	-	1	-	-	-	-
TOTALS	-	5256.8	18.7	25.2	6.0	13.2	487	16	53	18	0.38	1	547	7	4	1	9	1	6	2	2	1	1

<sup>1</sup> Type Park: C - Community L - Link R - Regional Su - Special use

<sup>2</sup> Length in miles

<sup>3</sup> Acreage

\* 9 hole golf course

township of



doylestown

PARK & RECREATION BOARD

MEMBERS

Thomas Cockley, Chairman  
Carol Noonan, Vice Chairman  
Clara Stock  
Elizabeth Larlick  
Carolyn Stover  
Donald A. Borden  
Robert P. Abecasis

425 Wells Road • Doylestown, R D 3

Pennsylvania 18901 • (215) 348-9915

FAX • (215) 348-8729

June 15, 1991

Dear Doylestown Township Resident:

The Doylestown Township Park and Recreation Board is seeking your comments and recommendations on parks and recreation in the Township. We are sending you this questionnaire in the hope that you will take a few minutes to let us know how you feel about the township parks and recreational programs and how we can continue to meet the demands of the growing Township population. Now that the Township has taken steps to preserve land for open space and recreation, our goal is to develop programs for tots to senior citizens to utilize these facilities. We need your help to accomplish this. Your views will help establish priorities for Township recreation programs and park facilities and will be incorporated into a Plan for Parks, Recreation, and Open Space in Doylestown Township.

It is important that you respond to all questions, and you have our assurance that all responses will be kept strictly confidential.

Please use the enclosed, stamped envelope for your response and return the survey by July 3, 1991.

If you have any questions about the survey, feel free to call Doylestown Township at 348-9915. Thank you for taking the time to complete this survey.

Yours truly,

Thomas Cockley, Chairman  
Doylestown Township Park and Recreation Board

TC/pm

Enclosures

**DOYLESTOWN TOWNSHIP  
PARK AND RECREATION NEEDS ASSESSMENT**

1. Recreation Activities - Please place a check (✓) next to the activities below that members of your household participated in during the past year (June 1990 - June 1991).

- |  |   |                                       |
|--|---|---------------------------------------|
| <input type="checkbox"/> Aerobics            | <input type="checkbox"/> Dancing          | <input type="checkbox"/> Soccer       |
| <input type="checkbox"/> Arts & Crafts       | <input type="checkbox"/> Fishing          | <input type="checkbox"/> Softball     |
| <input type="checkbox"/> Baseball            | <input type="checkbox"/> Football         | <input type="checkbox"/> Swimming     |
| <input type="checkbox"/> Basketball          | <input type="checkbox"/> Hiking           | <input type="checkbox"/> Tennis       |
| <input type="checkbox"/> Bicycling           | <input type="checkbox"/> Horseback Riding | <input type="checkbox"/> Volleyball   |
| <input type="checkbox"/> Boating             | <input type="checkbox"/> Ice Skating      | <input type="checkbox"/> Walking      |
| <input type="checkbox"/> Community Clubs     | <input type="checkbox"/> Picnicking       | <input type="checkbox"/> Other: _____ |
| <input type="checkbox"/> Cultural Enrichment | <input type="checkbox"/> Running          | <input type="checkbox"/> Other: _____ |

Using the list above, please indicate the three activities that ADULTS in your household participated in the most.

\_\_\_\_\_

What three activities did your CHILDREN under 18 participate in the most?

\_\_\_\_\_

2. Recreation Programs - If the Township organized additional leisure programs for residents of all ages, would your family participate in any of the programs below? (Check all that apply)

- |   |  |
|---|--|
| <input type="checkbox"/> Arts & Crafts classes  | <input type="checkbox"/> Pre-school Activities     |
| <input type="checkbox"/> Concerts               | <input type="checkbox"/> Senior citizen programs   |
| <input type="checkbox"/> Dance classes          | <input type="checkbox"/> Sport leagues/instruction |
| <input type="checkbox"/> Exercise classes       | <input type="checkbox"/> Swim programs/open swim   |
| <input type="checkbox"/> Field trips            | <input type="checkbox"/> Teen activity program     |
| <input type="checkbox"/> Fishing                | <input type="checkbox"/> Tennis lessons            |
| <input type="checkbox"/> Holiday special events | <input type="checkbox"/> Volleyball league         |
| <input type="checkbox"/> Hunting                | <input type="checkbox"/> Other: _____              |
| <input type="checkbox"/> Ice skating program    | <input type="checkbox"/> Other: _____              |
| <input type="checkbox"/> Nature Study           | <input type="checkbox"/> Other: _____              |

3. Recreation locations - Where did members of your household go to participate in leisure activities during the past year? (Check all that apply)

- |  |   |
|--|---|
| <input type="checkbox"/> Community field/Doylestown Boro | <input type="checkbox"/> Local church             |
| <input type="checkbox"/> Elementary school facility      | <input type="checkbox"/> Local YMCA/YWCA          |
| <input type="checkbox"/> Fanny Chapman Pool              | <input type="checkbox"/> Peace Valley County Park |
| <input type="checkbox"/> Fonhill Museum/Tile Works       | <input type="checkbox"/> Private club             |
| <input type="checkbox"/> Hart Woods                      | <input type="checkbox"/> Sauerman Park            |
| <input type="checkbox"/> High School facility            | <input type="checkbox"/> State or National park   |
| <input type="checkbox"/> Junior High/Middle school       | <input type="checkbox"/> Turk Field               |
| <input type="checkbox"/> Library & Community rooms       | <input type="checkbox"/> Other: _____             |



7. Resident Demographics - This information is for statistical purposes only and individual responses will be held in strictest confidence.

How long have you lived in Doylestown Township?

- less than one year     6 - 10 years     16 - 20 years  
 1 - 5 years     11 - 15 years     more than 20 yr

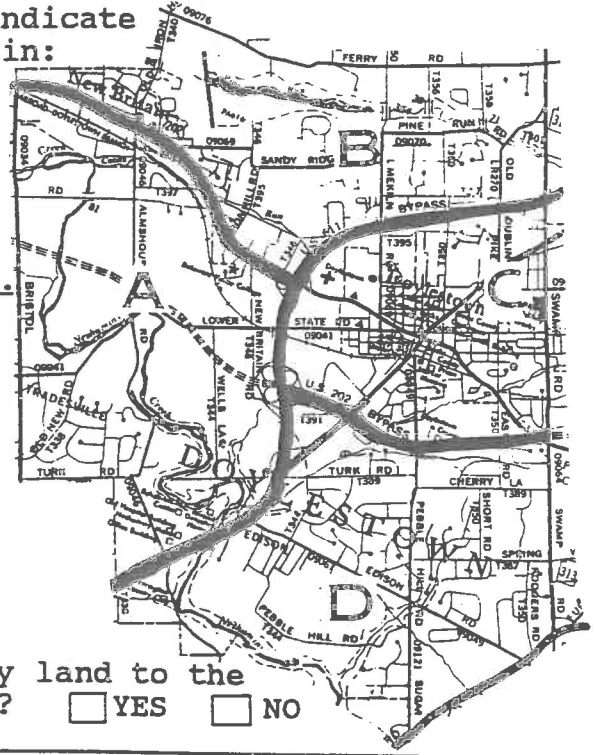
Refer to the adjacent map and please indicate the area of the Township you now live in:

- Section A     Section C  
 Section B     Section D

Please identify the gender and age of all household members, placing the actual respondent of this survey first.

(Circle Gender - Write in age)

- a.    M    F    \_\_\_\_\_  
 b.    M    F    \_\_\_\_\_  
 c.    M    F    \_\_\_\_\_  
 d.    M    F    \_\_\_\_\_  
 e.    M    F    \_\_\_\_\_  
 f.    M    F    \_\_\_\_\_  
 g.    M    F    \_\_\_\_\_



8. Would you be interested in donating any land to the Township for parks or recreational use?  YES  NO  
If yes, what is your phone number?: \_\_\_\_\_
9. Would you be willing to volunteer time to supervise or coordinate recreation activities within Doylestown Township?  
 YES  NO  
If yes, what is your phone number?: \_\_\_\_\_

10. Resident Comments - Use the space below to make any additional comments or suggestions and indicate any pressing parks and recreation issues of concern to your family members.

THANK YOU FOR YOUR TIME COMPLETING THIS QUESTIONNAIRE!

4. What is the maximum time you would prefer to travel by car to get to a park or recreational facility? (Check one)

- less than 5 minutes                       15 - 25 minutes  
 5 - 15 minutes                               more than 25 minutes

5. Recreation Facilities - Community need and preference will impact the future development of recreational facilities. Please identify when the members of your household would prefer the development of each facility.

	Immediately	1 - 5 years	6 - 10 years	after 10 years	Never		Immediately	1 - 5 years	6 - 10 years	after 10 years	Never
Baseball fields	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Picnic areas	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Basketball courts	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Playgrounds	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Bicycle trails	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Soccer fields	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Community center	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Softball fields	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Football field	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Swimming pool	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Jogging/Walking trails	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Tennis courts	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Nature center/trails	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Volleyball courts	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Open/passive park space	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Other: _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Outdoor stage	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Other: _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

6. Community Resident Opinions - Please check the response that best describes your feelings about each statement.

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
a. Doylestown Township needs additional, outdoor recreation facilities such as parks, playgrounds, and athletic fields.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Doylestown Township needs a Community Center.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. Our Township should focus on the preservation of open space and environmentally sensitive areas.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. Our community should support and sponsor teen programs and projects.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e. Members of our family are aware of and use the Township and County parks and recreation areas.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f. Our household members are satisfied with recreation programs and services that are currently offered by the Township.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g. The adults in our home would support a local bond issue allocating funds for the acquisition, development, and refurbishing of Township parks.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

TOWNSHIP OF DOYLESTOWN  
PARK AND RECREATION NEEDS ASSESSMENT

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## INTRODUCTION

Doylestown Township, located in Central Bucks County, has experienced an increased demand for recreation programs and facilities as well as open space. As the number of township residents increases, so does the number of requests to local township officials and board members to provide additional services.

The provision of parks, playgrounds, and recreation programs has been the responsibility of government agencies for over one hundred years. Many quasi-public and volunteer organizations and private businesses currently exist to supplement the federal, state, county, and local leisure service delivery systems. However, municipal jurisdictions still traditionally administer and operate parks and recreation departments, with a national average of about seventeen dollars per resident being allocated from local operating budgets for recreation.

As Doylestown Township's population grows, its recreation facilities, programs, and open space must also expand in an organized manner which will ultimately benefit residents of all ages, abilities, interests, and income levels. Already supported by tax dollars, these services should provide residents with a wide range of opportunities for the lowest possible cost. This is the true philosophy behind public recreation.

Seeing the need for a comprehensive plan to guide Township decision-makers into the future, a park and recreation plan was

drafted in 1989. This plan incorporated the recreational needs of residents who had responded to a spring, 1988 recreation survey. Recommendations were made which would preserve and protect sensitive environmental areas and also allow for the provision of parkland for active recreational opportunities.

In order to update and identify the leisure needs of the community, a second park and recreation needs assessment was distributed to Township residents in 1991. The report that follows presents the results of the Summer, 1991 study.

### STUDY OBJECTIVE

The purpose of this study was to gather information about the recreational needs, preferences, and opinions of residents in the Township of Doylestown. The collection of information was conducted in an unbiased manner and was not influenced by any special interest groups.

Specific objectives were established in order to obtain a comprehensive understanding of residents' needs:

1. Identify current recreation activity participation for adults and children;
2. Determine the level of future participation in various recreation programs;
3. Provide an analysis of existing recreation location level of use;
4. Identify the maximum amount of time residents would travel to a recreational facility;
5. Determine resident preferences for future development of recreation facilities; and
6. Evaluate community resident opinions regarding new facilities, programs, and perceptions of existing opportunities and funding.

The results yielded information that can be used as a planning tool in the acquisition, development, and administration of active and passive recreation facilities.

## METHODOLOGY

### Survey Design

The survey instrument consisted of a three-page questionnaire which reflected the study objectives. Its format and content were adopted from a combination of other community recreation surveys and input from the township Park and Recreation Board and other officials. The actual content of the survey included the following nine components:

1. Cover letter - Identified the purpose of the study, who was conducting it, the importance of a response, and instructions for its return;
2. Recreation activities - Designed to identify resident's current participation in a variety of activities;
3. Recreation programs - Listed possible future programs and measured resident interest in participating;
4. Travel time - Identified the maximum time household members would travel to a park or recreational facility;
5. Recreation facilities - Determined community need and preference related to the construction of additional Township-owned facilities;
6. Community resident opinions - Assessed resident opinions regarding new facilities and programs, existing awareness and satisfaction of areas and services, and future funding;
7. Demographics - Provided sociodemographics of respondents length of time in Township, section of residence, age, and gender;
8. Volunteers - Identified residents who were interested in volunteering time to supervise or coordinate leisure activities or donate land to the Township for recreation; and
9. Comments - Provided an opportunity for residents to comment further or contribute suggestions.

The questionnaire was designed to be filled out by any member of the household who had time to do so. Questions were designed to solicit information from the entire household which allowed for input from the entire family. Space was provided for respondents who wished to add activities or facilities to the given list of opportunities.

### Sample Selection

Township real estate tax records were utilized to select the first sample group. Three thousand eight hundred and forty (3,840) residential households were on the tax roles and each taxpayer received a survey. The second sample group of two thousand seven hundred and seventy one (2,771) families was selected from the list of non-respondents and those who had made their survey code number illegible when returning the first survey.

### Data-gathering Procedures

The selected 3,840 households received their questionnaires via bulk mail at the end of June, 1991 which required an immediate response and return in the enclosed self-addressed, stamped envelope. Prior to mailing, each return envelope had been coded with a four-digit number that could be traced back to the original tax records for the sole purpose of verifying responding households.



This initial contact resulted in a return of one thousand sixty nine (1,069) usable surveys, which represented a 28% response rate. As promised if a 40% response rate was not achieved, a second mailing was distributed at no expense to the township. This second mailing was also delivered via bulk mail at the end of September, 1991 to two thousand seven hundred and seventy one (2,771) non-responding homes.

By November 25, 1991 the second mailing produced five hundred and eight (508) additional responses, bringing the total response to one thousand five hundred and seventy seven (1,577) homes. The total response rate for the project was 41%.

Responses came from three thousand one hundred and forty one (3,141) adults, and one thousand four hundred and eleven (1,411) children under eighteen, totaling four thousand five hundred and fifty two community residents.

Survey results for the first mailing were coded at Temple University and results for both mailings combined were tabulated at the University of North Carolina, Wilmington campus. Only one member of the project team had access to the survey identification numbers and upon verification of numbers for the second mailing, the coding sheets were destroyed to ensure respondent confidentiality.

HOUSEHOLD RECREATION ACTIVITIES  
(N=1,577 Households)

<u>ACTIVITY</u>	<u>%PARTICIPATED</u>	<u>RANKING</u>
WALKING	83%	1
BICYCLING	76%	2
RUNNING	62%	3
SWIMMING	60%	4
AEROBICS	59%	5
PICNICKING	55%	6
COMMUNITY CLUBS	54%	7
TENNIS	45%	8
CULTURAL ENRICHMENT	44%	9
SOCCER	35%	10
ARTS & CRAFTS	32%	11
HIKING	24%	12
SOFTBALL	22%	13
BASEBALL	20%	14
BASKETBALL	19%	15
DANCING	15%	16
FISHING	14%	17
VOLLEYBALL	12%	18
BOATING	10%	19
ICE SKATING	7%	20
HORSEBACK RIDING	6%	21
FOOTBALL	2%	22

**MOST POPULAR ADULT ACTIVITIES**  
(N=3,141 Adults)

- #1 WALKING
- #2 BICYCLING
- #3 RUNNING

**MOST POPULAR YOUTH ACTIVITIES**  
(N=1,411 Children)

- #1 SWIMMING
- #2 BICYCLING
- #3 COMMUNITY CLUBS

**Additional Write-ins:** bridge, car racing, chess, field hockey, flying, golf, horseback riding, lacrosse, photography, reading, sailing, sewing, skateboarding, skiing, watching T.V.

ORGANIZED RECREATION PROGRAMS  
(N=1,577 Households)

<u>PROGRAM</u>	<u>%WOULD PARTICIPATE</u>	<u>RANKING</u>
EXERCISE CLASSES	84%	1
SWIMMING/OPEN SWIM	80%	2
ARTS & CRAFTS CLASSES	62%	3
TEEN ACTIVITIES	61%	4
FIELD TRIPS	51%	5
PRE-SCHOOL ACTIVITIES	45%	6
SPORT LEAGUES/ INSTRUCTION	41%	7
CONCERTS	40%	8
NATURE STUDY	39%	9
TENNIS LESSONS	26%	10
VOLLEYBALL LEAGUE	25%	11
SENIOR CITIZEN PROGRAMS	22%	12
FISHING	16%	13
HOLIDAY SPECIAL EVENTS	15%	14
DANCE CLASSES	12%	15
ICE SKATING	9%	16
HUNTING	8%	17

**Additional Write-ins:** adult social events, adult sports leagues, badminton, basketball, bike trips, bridge, car shows/racing, chess club, croquet, field hockey, flying, folk dance, hiking, horseback riding, horticulture, ice skating, jogging club, lacrosse, mini-golf, movies in the park, photography, racquetball, rock-climbing, roller skating, running club/races, sailing, skateboarding, ski trips, snowmobiling, soccer, softball, street hockey, swim league, teen activities, volleyball, walking program

**1990-1991 RECREATION LOCATIONS**  
**(N=1,577 Households)**

<u>LOCATION</u>	<u>%VISITED SITE</u>	<u>RANKING</u>
LOCAL YMCA/YWCA	38%	1
PRIVATE CLUB	36%	2
JUNIOR HIGH/MIDDLE SCHOOL	26%	3
HIGH SCHOOL FACILITY	23%	4
ELEMENTARY SCHOOL	22%	5
FANNY CHAPMAN POOL	20%	6
PEACE VALLEY COUNTY PARK	19%	7
SAUERMAN PARK	16%	8
COMMUNITY FIELD/DOYLESTOWN	15%	9
TURK FIELD	14%	10
STATE OR NATIONAL PARK	13%	11
HART WOODS	11%	12
LIBRARY/COMMUNITY ROOMS	10%	13
LOCAL CHURCH	8%	14
FONTHILL MUSEUM/TILE WORKS	2%	15

**Additional Write-ins:** Ambler Symphony, Buckingham A.A., Buckingham Gymnastics, Buckingham Soccer, College fields, Covered Bridge Park, Delaware River, Doylestown A.A. fields, Fairmount Park, home/yard, indoor skating rink, Lenape Valley League, Michener Museum, New Jersey shore, Nockamixon, North Branch Park, scouting camp, Tower Hill field, Town and Country Theatre, Tyler Park, Warrington Airport, Warrington A.A., Warrington Swim Club, Willow Grove NAS, work sponsored areas.

**RECREATION FACILITY NEED**  
(N=1,577 Households)

<u>FACILITY</u>	<u>IMMEDIATELY</u>	<u>1-5 YEARS</u>	<u>6-10 YEARS</u>	<u>AFTER 10 YEARS</u>	<u>NEVER</u>	<u>RANKING</u>
JOG/WALK TRAILS	73%	28%	---	---	1%	1
BICYCLE TRAILS	70%	20%	9%	1%	1%	2
OPEN/PASSIVE SPACE	69%	18%	8%	5%	--	3
COMMUNITY CENTER	42%	31%	20%	4%	3%	4
PLAYGROUNDS	36%	29%	23%	7%	5%	5
PICNIC AREAS	29%	24%	27%	12%	8%	6
SWIMMING POOL	30%	21%	19%	14%	16%	7
SOCCER FIELDS	20%	23%	25%	8%	24%	8
NATURE CENTER/TRAILS	20%	19%	28%	18%	15%	9
TENNIS COURTS	15%	22%	22%	10%	31%	10
BASKETBALL COURTS	9%	16%	15%	20%	40%	11
BASEBALL FIELDS	8%	13%	11%	22%	46%	12
SOFTBALL FIELDS	7%	13%	10%	23%	47%	13
OUTDOOR STAGE	5%	17%	11%	8%	59%	14
VOLLEYBALL COURTS	6%	11%	12%	8%	63%	15
FOOTBALL FIELDS	3%	5%	3%	13%	76%	16

**Additional Write-ins:** campsites, driving range, field hockey, fishing area, golf course, horseback riding facility, horseshoe pit, ice rink, lacrosse field, open air theater, racquetball courts, running track, skateboard facility, teen center.

**COMMUNITY RESIDENT OPINIONS**  
**(N=1,577 Households)**

<u>QUESTION</u>	<u>STRONGLY AGREE</u>	<u>AGREE</u>	<u>NEUTRAL</u>	<u>DISAGREE</u>	<u>STRONGLY DISAGREE</u>	<u>RANKING</u>
Outdoor Facilities	30%	38%	6%	10%	16%	1
Preservation	40%	26%	12%	17%	5%	2
Community Center	25%	29%	13%	21%	12%	3
Teen Programs	22%	30%	16%	23%	9%	4
Aware of Parks	18%	26%	9%	37%	10%	5
Satisfaction	8%	21%	24%	31%	16%	6
Bond Issue	4%	18%	6%	41%	31%	7

DEMOGRAPHICS  
(N = 1,577 HOUSEHOLDS)

MAXIMUM PREFERRED TRAVEL TIME TO A PARK

Less than 5 minutes	13%
5 - 15 minutes	27%
15 - 25 minutes	41%
More than 25 minutes	19%

LENGTH OF TIME IN TOWNSHIP

Less than 1 year	2%
1 - 5 years	15%
6 - 10 years	30%
11 - 15 years	33%
16 - 20 years	12%
More than 20 years	8%

AREA OF TOWNSHIP

<u>SECTION</u> (N=1,577 Homes)	<u>% WITH CHILDREN</u> (N=787 Homes)	<u>% WITHOUT CHILDREN</u> (N=790 Homes)
Section A    17%	9%	8%
Section B    27%	14%	13%
Section C    16%	7%	9%
Section D    40%	19%	21%
	(49%)	(51%)



ADULTS (N = 3,141)

AGE	MALE (51%)	FEMALE (49%)
18-25	20%	15%
26-35	10%	19%
36-45	24%	28%
46-55	25%	19%
56-65	15%	13%
66-75	4%	3%
Over 75	3%	3%

CHILDREN (N = 1,411)

AGE	BOYS (52%)	GIRLS (48%)
0-2	10%	8%
3-5	21%	24%
6-8	18%	20%
9-11	14%	14%
12-14	20%	21%
15-17	17%	13%

RESIDENT COMMENTS

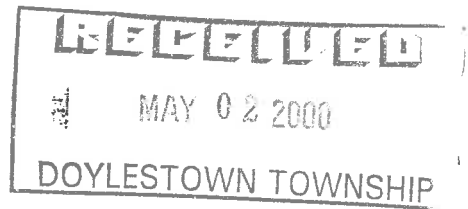
Comment	# of households
Do not increase taxes	123
Acquire/preserve open, natural space	101
Add a golf course or driving range	97
We need another swimming facility	56
Develop safe walking/biking trails or paths	43
Offer teen programs/gathering place	26
Current activities and facilities are adequate	24
Add to or improve tennis courts	22
Have a plan - do not duplicate existing areas	20
We would like new, outdoor facilities/fields	18
Survey good idea/thank-you	17
Need passive facilities near the reservoir	12
Publicize activities more	9
No more athletic fields	8
Township needs a booklet to describe what is available	8
Add restrooms to existing facilities	8
We need a community center	8
Make better use of existing school facilities	8
How about a lighted basketball court?	6
More adult programs	5
We are pleased with Turk field	5
We are retired, much of this does not apply	5
Received this survey too close to the deadline	5
Increase funding to Peace Valley	4

We appreciate Sauerman Park	3
Get children involved more	3
Solicit donations for flowers/open space	3
Install sewers, not parks	3
Offer more cultural programs	3
We will support a bond issue if presented correctly	3
Turk field was an unnecessary expense	3
We are concerned about proposed spray irrigation facility	3
Township should disband recreation board and get out of the recreation and park business	2
Keep government out of recreation	2
Eliminate drinking in parks	2
Nearby facilities are in poor condition	2
Get a putt-putt course	2
Sandy Ridge area has no park facilities	2
Use Mrs. Paul's site as a recreation facility	2
Start 50-plus leagues	2
Do not monopolize sports fields - keep open for all	2
Tie in closer with YMCA	2
Before anything is done let residents know where money is going	2
Is the new 100-acre park really a park or a sewer?	1
Preserve ground at Sandy Ridge and Snow Hill	1
Offer discount ski lift tickets	1
Add baby swings to parks	1
Involve D.A.A. more	1
The summer trip program is wonderful	1

Would like a nature sanctuary/preserve	1
Offer environmental studies	1
The #1 priority should be lighted baseball and tennis courts	1
Don't use Turk park as a golf course	1
Construct multi-purpose sites	
Consider sidewalks on Pebble Hill and Turk Road	1
Improve leisure for family therapy and adolescent development	1
Give more support to Doylestown A.A.	1
Give some thought to park security	1
The new parks going up the last few years look great	1
We need a community day care center	1
Township supervisors have indicated that the overdevelopment of the Township is the #1 priority	1
Assist county to improve facilities	1
Would like our facilities to look like Warrington's	1
Balance facilities for all residents	1
Burpee needs more equipment	1
Investigate anything Del Val wants to sell	1
Turk filed needs one more field with viewing stands, concessions, and rest rooms	1
Will support bond issue to refurbish parks	1
Separate biking and walking paths at the Lake	1
There is little available to the children of the poor	1
Add exercise stations	1
Would like to see the tennis courts planned for East Road and Route 202	1

Add trails for off the road vehicles	1
We need more lifeguards	1
Township needs more traffic lights	1
Too many drug users at the park	1
More activities for parents and children to do together	1
Develop the Wells Road property as a recreational area	1
Our tax money should not support out of state users	1
Park and Rec Board is to be commended for their efforts and for being concerned about the needs of this community	1
Need more swings for children	1
Need a skateboard park	1
Sell open space and lower taxes	1
Questionnaire was handled poorly - why pay all postage?	1
Stop development of townhomes and expensive homes	1
Parks need more garbage cans and recycling cans	1
No golf courses	1
Why not have a fund-raiser for parks?	1
Prohibit pets at parks and playgrounds	1
Share ball fields	1
Need a summer concert program	1
Must go to Warrington Little League for six-year old; Doylestown starts at 7	1
Purchase a park off Spring Valley Road	
I am disappointed that the town stopped Mardi Gras	1
It is up to families to provide recreation, not the Township	1

Parks are the responsibility of state and county government	1
Pave exercise trail at Turk Park	1
Elderly need safe recreation areas	1
Thanks for the playground at Turk Park	1
Cut taxes and decrease programs	1
Town needs to be aware of those who are abusing the land	1
Need a little league and soccer program	1
Develop softball leagues	1
Make recreation areas interesting	1
Swings at Turk Park II are too far from parking lot	1
Build a play area like Fort Washington's which was built by residents and local businesses donating money	1
Need a soccer club	1
Need dancing and cheerleading for little girls	1
Park areas need more shade and less rubber tires	1
Place benches close to play areas for mothers	1



ACT 537 SEWAGE FACILITIES PLAN  
FOR  
DOYLESTOWN TOWNSHIP  
BUCKS COUNTY, PENNSYLVANIA

VOLUME I

SEPTEMBER 1999  
REVISED DECEMBER 1999

PREPARED FOR:

BUCKS COUNTY WATER AND SEWER AUTHORITY  
1275 ALMSHOUSE ROAD  
WARRINGTON, PA 18976

PREPARED BY:

CARROLL ENGINEERING CORPORATION  
949 EASTON ROAD  
WARRINGTON, PA 18976

## PART 1 - PLAN SUMMARY

The Bucks County Water & Sewer Authority on behalf of Doylestown Township, has prepared this Act 537 Sewage Facilities Plan to address the present and future sewage disposal needs of Doylestown Township, Bucks County. This report addresses the entire Township and updates the current Act 537 Plan titled "Comprehensive Plan for Water and Wastewater Facilities" prepared by Huth Engineers, Inc. and subsequent revisions, amendments and planning modules. This report has been prepared in accordance with 25 PA Code, Chapter 71, "Administration of Sewage Facilities Planning Program."

Doylestown Township has seen tremendous growth during the past decade. The population has increased concurrently with development of the sewerage infrastructure. Population growth and its accompanying development is expected to increase considerably in the future. The sewage disposal needs for future growth can be met through an orderly expansion of the Bucks County Water & Sewer Authority's existing treatment facilities and collection system. In addition to meeting the needs of future growth, the Bucks County Water & Sewer Authority's sewer system should be expanded to eliminate potential and existing sewage disposal problems caused by failing on-site disposal systems.

To properly meet the demands of future growth, and failing on-site disposal in Doylestown Township, this Act 537 Plan recommends implementation of the following:

1. Construction of an expansion of the Green Street Wastewater Treatment Plant and an increase in the capacity of the Castle Valley Pump Station flow diversion.
2. Construction of low pressure/gravity sewer systems for the Pebble Hill III/Wilshire and Tedwill developments.
3. Creation of a Township OLDS Septage Management Program. A contingency estimate for on-lot system failures has been incorporated into CNBTJSA and KP Treatment plant 10-year projections, should septage management not be successful in some portions of the Township. The estimated costs to complete construction projects are \$4,800,000. The fee established by the Township to administer the OLDS Septage Management Program will be \$15 per year for each on-lot system. The on-lot system owner will also be required to have their system "pumped out" every three years.

Funding of the Green Street Plant Expansion will be by a Bond issued by the Bucks County Water & Sewer Authority. Construction of the two low pressure/gravity sewer systems will be funded by short term financing and wholly reimbursed through connection fees. The OLDS Septage Management Program will be funded by the Township through annual fees for OLDS system owners.



## PART 2 - INTRODUCTION

### 2.1 Background Information

#### A. Authorization

The Pennsylvania Sewage Facilities Act enacted in 1966 (Act 537), mandates municipalities within the Commonwealth of Pennsylvania to develop and implement official Sewage Facilities Plans which provide for the resolution of existing sewage disposal problems, and future sewage disposal needs of the municipality. Act 537 further requires municipalities to review and revise their official plans whenever the municipality or the Department of Environmental Protection (DEP) determines the plan is out of date, not implementable, inconsistent with other municipal planning, or does not provide adequate solutions to resolve existing problems or future growth.

Doylestown Township has authorized the Bucks County Water and Sewer Authority (BCW&SA) to update their Act 537 Sewage Facilities Plan for the Township. A copy of the letter authorizing this action has been attached as Appendix A. This plan revision has been prepared in accordance with 25 PA Code, Chapter 71, "Administration of Sewage Facilities Planning Program."

#### B. Purpose

The purpose of this plan revision is to provide for the future wastewater disposal needs of Doylestown Township, while also meeting the goals and objectives established in existing municipal and county planning documents for the region. The primary goal is to ensure the protection of the public's health from the impacts of improper sewage disposal, while providing for the ability of the region to grow and develop at a controlled rate. These goals must be realized while evaluating the social, economic, and environmental impacts of alternatives, to determine a cost effective, viable wastewater treatment program.

### 2.2 Sewage Facilities Planning

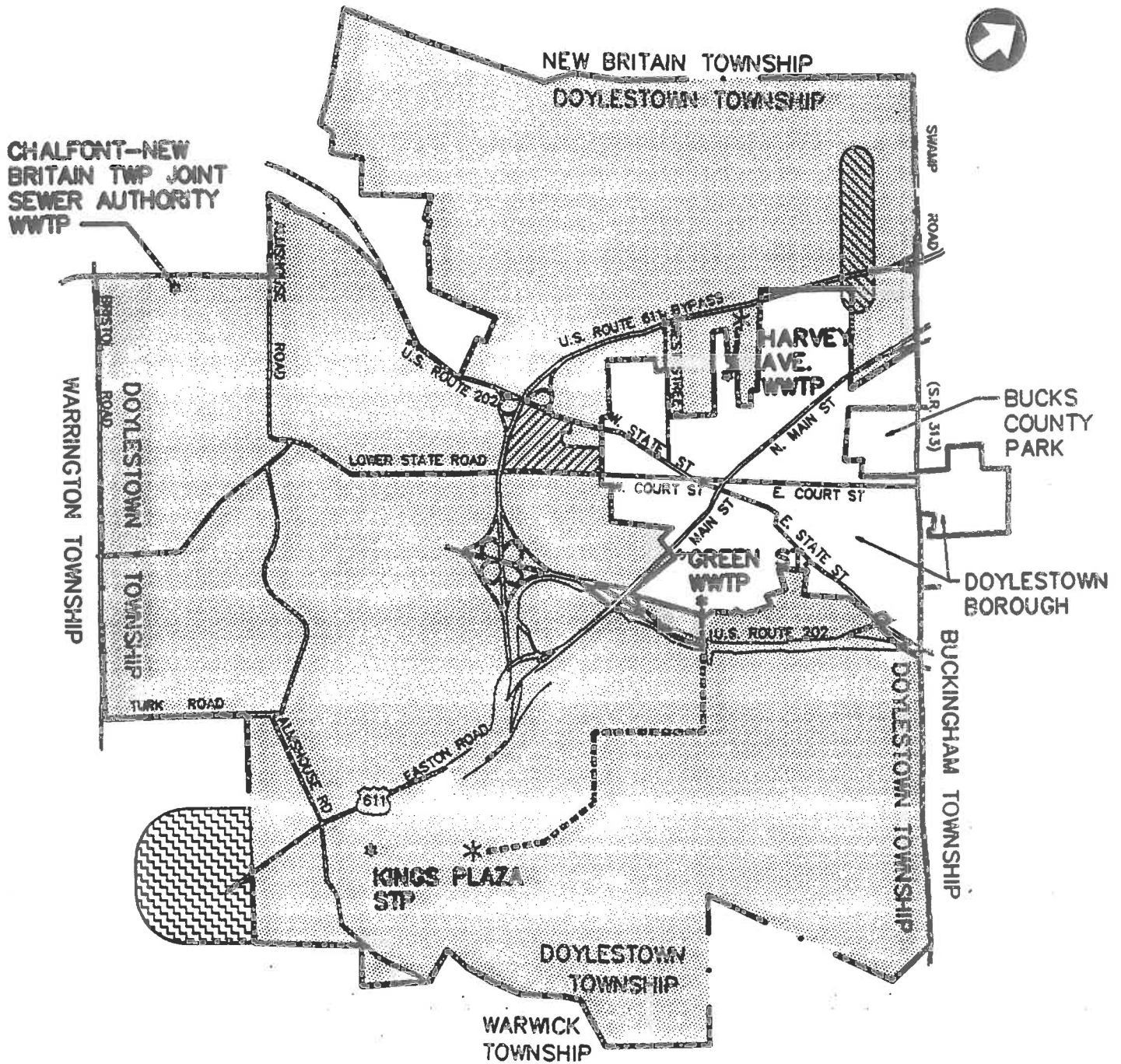
The current wastewater facilities jurisdictions plans in Doylestown Township are shown in Figure 1 and are described as follows:





#### A. Neshaminy Basin Sub-Region II 201 Facilities Plan

The "Neshaminy Basin Sub-Region II 201 Facilities Plan" was prepared for the Chalfont-New Britain Township Joint Sewer Authority (CNBTJSA) and BCW&SA in January 1982 by Gilbert Associates, Inc. The Plan, hereinafter called the "201 Facilities Plan," endorsed the idea of a wastewater treatment plant at Kings Plaza, as opposed to conveying wastewater from the southern portion of Doylestown Township to the CNBTJSA plant in Doylestown Township or the Green Street Wastewater Treatment Plant in Doylestown Borough. The Kings Plaza plant, originally built by Concord Development Company, was permitted for 0.425 million gallons per day.

FIGURE 1

# DOYLESTOWN TOWNSHIP WASTEWATER FACILITIES PLAN



-  COMPREHENSIVE PLAN FOR WATER & WASTEWATER FACILITIES (HUTH, 1990)
-  PUMP STATION NO. 2 AND FORCE MAIN RECONSTRUCTION, OLD DUBLIN PIKE (CEC, 1993)
-  WARRINGTON TOWNSHIP ACT 537 PLAN (GILMORE, 1993)
-  CHESTNUT GROVE, TEVERSALL & YMCA ACT 537 REVISION (CEC, 1994)

\*----- COOKS RUN/CASTLE VALLEY INTERCEPTOR FLOW DIVERSION (CEC, 1994)



(MGD) and began operations during the summer of 1986. The plant was subsequently dedicated and operated by Doylestown Township Municipal Authority until it was purchased by BCW&SA in December 1992.

B. Comprehensive Plan for Water and Wastewater Facilities (Huth)

The current Act 537 Sewage Facilities Plan for Doylestown Township titled, "Comprehensive Plan for Water and Wastewater Facilities," prepared by Huth Engineers, Inc. was approved by DEP on April 20, 1990. The Plan, hereinafter called the "Huth Plan" delineated between the northern third and the southern two-thirds of Doylestown Township.

The northern third of the Township is in Sub-Region II of the Neshaminy Basin, which is tributary to the Chalfont New Britain Township Joint Sewer Authority Wastewater Treatment Plant (CNBTJSA WWTP). The Huth Plan stated that BCW&SA was responsible for sewerage service in this portion of the Township and the Pine Run and Cooks Run Interceptors, "will provide a nucleus to resolve the public sewer system needs".

The southern two-thirds of the Township (Sub-Region IV) was the major focus of the Huth Plan. The Plan recommended the construction of the Castle Valley Interceptor (completed in 1991) and the expansion of the Kings Plaza Sewage Treatment Plant (KPSTP) to approximately 1.0 MGD. It also recommended constructing a new wastewater treatment facility downstream of KPSTP to handle ultimate flow. There were no details in the Huth Plan explaining how the Kings Plaza expansion was to take place, or why the expansion was limited to 1.0 MGD. The Huth Plan also did not evaluate a regional treatment facility or combined treatment with another treatment facility. In order to facilitate planning, DEP allowed a two-phase planning approach for the area and approved the Huth Plan as "Phase I."

C. Pump Station No. 2 and Force Main Reconstruction, Old Dublin Pike

The "Revision to 537 Plan BCW&SA Pump Station No. 2 and Force Main Reconstruction, Old Dublin Pike" was prepared in February 1992 and revised in August 1992 by Carroll Engineering Corporation for BCW&SA. The plan was approved by PA DEP in April 1993. The plan recommended the construction of a new Pump Station No. 2 and a 16" force main parallel to the existing force main. Pump Station No. 2 was completed in 1996 and is pumping wastewater to the CNBTJSA WWTP for treatment.

D. Warrington Township Act 537 Plan

In 1993, a plan revision titled, "Warrington Township Sewage Facilities Management (Act 537) Plan Revision," was prepared for Warrington Township by Gilmore and Associates, Inc. The Plan indicates a small area within Warrington Township to be tributary to the KPSTP. As also indicated in the Plan, a pump station was proposed on Kelly Road to convey wastewater flow to the KPSTP via existing facilities in the Country Club Estates development. The construction of the Kelly Road Pump Station was completed in late 1993. Flows in this small drainage area are currently treated at the KPSTP.

E. Chestnut Grove, Teversall and YMCA Sewer Diversion

"Revision to Doylestown Township 537 Plan, The Chestnut Grove, Teversall and YMCA Sewer Diversion" was prepared in January 1994 by Carroll Engineering Corporation for BCW&SA. The Plan was approved by PA DEP in October 1994. The Plan proposed diverting wastewater flows from the CNBTJSA WWTP to the KPSTP by constructing 2,700 linear feet of 8" gravity sewer and decommissioning two existing pump stations (Chestnut Grove and Teversall). By redirecting the wastewater flow to the KPSTP and revising the service boundary, the boundary line was returned to its natural topographic location. The diversion was completed in 1997. Flows from Chestnut Grove, Teversall and the YMCA will be diverted to the KPSTP in 1999.

F. Cooks Run Interceptor and Castle Valley Interceptor Flow Diversions

The "Revision to 537 Plan, Doylestown Township and Doylestown Borough, Cooks Run Interceptor and Castle Valley Interceptor Flow Diversions" was prepared in August 1994 by Carroll Engineering Corporation for BCW&SA. The Plan was approved by DEP in December 1994. The Plan proposed two flow diversions. The first, included the construction of a gravity sewer, pump station and approximately 1,000 linear feet of 6" force main to divert a portion of flows tributary to the CNBTJSA WWTP from the Cooks Run Interceptor to the Harvey Avenue Wastewater Treatment Plant. The project made use of reserve treatment capacity at the Harvey Avenue WWTP and delayed a projected hydraulic overload at the CNBTJSA WWTP.

The second flow diversion included the construction of a gravity sewer, pump station and approximately 12,000 linear feet of 6" force main to divert a portion of flow tributary to the KPSTP to the Green Street Wastewater Treatment Plant. The project made use of reserve treatment capacity at the Green Street Plant and delayed a projected hydraulic overload at the KPSTP. The Cooks Run Diversion was completed in October 1995 and the Castle Valley Diversion was completed and activated in March 1998.

G. Chalfont-New Britain Township Joint Sewer Authority Draft Act 537 Plan

“Chalfont-New Britain Township Joint Sewer Authority, Act 537 Plan, Sewage Facilities Plan, Plant Expansion, Draft” was prepared in April 1997 by Acer Engineers for the CNBTJSA. The Plan, while in draft format, is anticipated to be approved by PADEP in September 1997. The Plan calls for expansion of the CNBTJSA WWTP to 5.2 MGD capacity (1.2 MGD increase from the current 4.0 MGD capacity). The total project cost of the plant expansion is estimated to be \$12,500,000. The Doylestown Township portion of the 1.2 MGD expansion is 157,100 GPD. The plant is scheduled to be completed in December 2000.

H. Sewage Facilities Planning Modules

Table 1 provides the status of projects, which have been developed, or are in the process of being developed, utilizing Planning Modules to amend the current sewage facilities plan in the Kings Plaza service area.

Table 2 provides the status of projects which have been developed, or are in the process of being developed, utilizing Planning Modules to amend the current sewage facilities plan in the CNBTJSA service area.

TABLE 1  
PLANNING MODULE SUMMARY WITHIN KPSTP SERVICE AREA  
AS OF DECEMBER 1998

<u>PROJECT NAME</u>	<u>EDU'S *</u>	<u>CONNECTED STATUS</u> (approx. % complete)
Doylestown Hunt	270 EDU's	100%
Valley View	52 EDU's	100%
Doylestown Lea (Phase 1)	38 EDU's	100%
Doylestown Lea (Phase 2)	72 EDU's	69%
Doylestown Knoll	108 EDU's	100%
Wells Road Sewer Expansion	16 EDU's	100%
Kutz Elementary School	11 EDU's	** 100%
1776 Shopping Center	2 EDU's	** 100%
Duane Road Sewer Extension	25 EDU's	95%
Independence Court	37 EDU's	0%
Doylestown Mews	unknown	project suspended
Bucks County Youth Center	32 EDU's	** 100%
Barn Plaza Phase II	21 EDU's	** 100%
Central Bucks YMCA	27 EDU's	** 0%
Doylestown Station (Phase 1)	53 EDU's	0%
Neshaminy Manor Complex	800 EDU's	** 100%

\* EDU = Equivalent Dwelling Unit

Source: BCHD and Doylestown Township

\*\* Converted to EDU's using 250 GPD per EDU

TABLE 2  
PLANNING MODULE SUMMARY WITHIN CNBTJSA WWTP SERVICE AREA  
AS OF DECEMBER 1998

<u>PROJECT NAME</u>	<u>EDU'S*</u>	<u>CONNECTED STATUS</u> <u>(approx. % complete)</u>
Stonebridge Crossing	198 EDU's	100%
Mercer Village	63 EDU's	100%
Charing Cross	240 EDU's	100%
Reeves Development (Lot 3)	2 EDU's	** 0%
Hampton Court	17 EDU's	100%
Covered Bridge Crossing	27 EDU's	100%
Villages of Doylestown	62 EDU's	100%
Fiaba Court	8 EDU's	100%
State Farm Insurance Co.	17 EDU's	100%
Gibb Tract	3 EDU's	** 0%
The Ridings	59 EDU's	100%
Baliwick (Phases 1 & 2)	61 EDU's	100%
Irongate (Ash Way)	23 EDU's	90%
Emerald Hill	24 EDU's	75%
Brennamen Point	9 EDU's	100%
Cedar Crest Farms	66 EDU's	36%
Doylestown Ridge	41 EDU's	95%

\* EDU = Equivalent Dwelling Unit

Source: BCHD and Doylestown Township

\*\* Converted to EDU's using 250 GPD per EDU

#### I. Doylestown Township 537 Amendment for Kings Plaza Service Area

The "Amendment to the 537 Plan for Doylestown Township, Bucks County, PA, Green Street Wastewater Treatment Plant Expansion" was prepared on November 16, 1998, last revised March 19, 1999 by Carroll Engineering for BCW&SA. The plan was approved by the Township in June 1999 and is awaiting PaDEP approval. The plan proposes an increase in flow diversion from the Castle Valley Pump Station and a 0.50-MGD expansion of the Green Street Plant. If approved by PaDEP, completion is anticipated near the end of the year 2001.

#### 2.3 Municipal and County Planning

The following municipal and county planning documents were utilized in this plan revision.

A. Bucks County Comprehensive Plan

The Bucks County Planning Commission completed the “Bucks County Comprehensive Plan”, in December 1993. The Plan discusses the growth, economy, community facilities, recreation, and infrastructure within Bucks County.

B. Doylestown Township, Comprehensive Plan

The “Doylestown Township Comprehensive Plan” was prepared by Lynn Froehlich, AICP in 1989. The Plan provides a detailed discussion of the natural features, land use, housing, transportation, and growth in Doylestown Township.

C. Bucks County Wastewater Facilities Plan - Central Bucks Area

The Bucks County Planning Commission prepared the “Bucks County Wastewater Facilities Plan-Central Bucks Area” in 1990. This report inventories existing wastewater facilities and provides projected wastewater needs for the region.

D. Chapter 175 Zoning Code for the Township of Doylestown

The “Doylestown Township Zoning Code” was last revised in 1996. The code provides the basic development guidelines and permitted uses for all land within the Township, and also protects sensitive areas for conservation and environmental health/safety purposes.

E. Subdivision and Land Development Ordinance, Doylestown Township

The “Subdivision and Land Development Ordinance, Doylestown Township” is continually being updated. The ordinance in conjunction with the zoning code provides guidelines for how the land within the Township can be developed.

# Doylestown Community Park, Recreation and Open Space Plan 2007



... Where the Benefits are endless!

A joint project by Doylestown Township & Doylestown Borough





## Executive Summary

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### Doylestown Community Park, Recreation & Open Space Plan:

This plan sets forth an action program for improving the quality of life in the Doylestown Community through parks, recreation and open space. The plan serves as a guide and is not a law. It provides a framework by which the community can come together in working towards a common vision for parks, recreation and open space. It is intended to be a living document that will be responsive to changing needs and emerging opportunities. By having this plan in place, Doylestown Township and Doylestown Borough can make sound decisions to allocate resources effectively.

Few municipalities possess the scenic beauty, heritage and culture of Doylestown. From Central Park to the vibrant downtown along the Bike and Hike Path that connects the community, Doylestown exemplifies the kind of place where people want to live, work, visit and play. From resisting the redevelopment in the 1960's that saved our precious local heritage to the acquisition and development of Central Park, citizens and municipal officials came together time and time again to make bold and far reaching decisions that make the quality of life here what it is today. Accolades ranging from the National Trust for Historic Preservation naming Doylestown as one of the ten best small towns in America to **Money Magazine's** designation as one of the best places to live in the United States all testify to the importance of Doylestown. The implementation of this plan will help to improve and sustain a valuable aspect of our community – parks, recreation and open space - for the residents of today as well as for many generations yet to come.

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#### Benefits of Parks, Recreation and Open Space

**Enhances the quality of life in a community. Increases property values. Spurs economic vitality. Deters crime and substance abuse. Adds life to your years... and years to your life. Improves the fitness and wellness of the residents. Reduces the isolation of the elderly. Helps children grow up great. Builds strong family bonds. Fosters a sense of community. Protects the environment. Conserves natural resources. Preserves land.**

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## Creating the Plan

The collaboration of citizens representing diverse interests from both the Township and the Borough served as the foundation for developing this plan. The Plan Study Committee worked on behalf of elected and appointed municipal officials, the Central Bucks School District, Bucks County, the cultural arts, business, museums, sports, and the environment. The committee was charged with the responsibility of overseeing the development of the Plan. The purpose of the plan was to:

1. Expand and update the previous township and borough municipal park, recreation and open space related plans.
2. Research all aspects of the Doylestown Community related to acquisition, planning and design of park and recreation facilities and open space areas, maintenance management, operations, recreation programming, service delivery, funding mechanisms and priorities.
3. Provide recommendations and cost estimates on priorities, policies, and costs for parkland, recreation facilities, programs, services, maintenance and management.
4. Create a joint park, recreation and open space plan for the Doylestown Community with an action plan for implementation.

## Process

The Doylestown Community hired a team of community and recreation planners and landscape architects to work with the Plan Study Committee to develop the plan. The planning team assessed community needs, parks, open space opportunities and threats, recreation facilities, programs and services, management, and financing. Based upon the findings, the team worked with the Committee to develop goals and recommendations. The final step was to establish a plan of action that sets forth a schedule for moving ahead with the recommendations. The whole process was strongly rooted in public participation.

## Public Involvement

Public involvement included six components: the Plan Study Committee, citizen participation at the work sessions, Key Person Interviews, public forums on specific topics, a community-wide public opinion survey, newsletter articles and public meetings. Combined, the process harnessed public opinion from the general citizenry, community organizations, and special interests. The responses elicited information from both organized groups who typically vocalize their needs as well as individual citizens. Those interviewed represented a range of people from individuals, small groups involved with community matters and large organizations with thousands of members.

## Findings

The findings of the public participation process included the following themes:

### **Community Pride: Evident**

Residents expressed pride in living here as well as appreciation for the efforts of both the Township and the Borough in providing high quality public services.

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### **Resident Satisfaction**

**Four out of five survey respondents expressed satisfaction with parks and recreation. About 70 percent have a positive public impression about parks and recreation.**

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### **Municipal Collaboration & Partnerships: Important**

Residents like the Borough and the Township working together. The Central Bucks School District is also an important part of government working together. Partnerships among the public and private sectors in parks and recreation are a key to success.

### **Community: Involved**

Many people volunteer. There is a high level of expectation in terms of community services.

### **Town Center: Vibrant and Challenging**

The Town Center brings people of all ages together, both residents and visitors. The Borough's attraction brings opportunities and challenges that officials address creatively and strategically.

### **Bike and Hike Path: Treasured**

Complete the Bike and Hike Path as soon as possible. The residents and visitors love it!

### **Amphitheatre: Needed**

Residents place a high priority on the construction of an amphitheater in Central Park.

### **Sports Fields and Gyms: Shortfall**

The Doylestown Community needs more sports fields and indoor recreation facilities. With over 8,000 participants in community sports year round, there are not enough athletic fields or gyms. And it's not just youth sports saying this: About 40 percent of the survey respondents agree. This is a very high response given the fact that not all of these respondents or their household are in sports.

### **Performing Arts Center: Private Sector Initiative**

If a performing arts center were to be built here, it should be undertaken by the private sector after a thorough exploration of its purpose, regional implications, and capital development and *operating* costs.

### **Natural Resources: Valued**

About 84 percent of the survey respondents indicated that protecting natural resources and open space should be a high priority.

### **Year Round Recreation: Growing Interest**

Residents of all ages and interests desire year round recreation in a variety of activities including fitness and wellness, environmental education, the arts, culture, and family recreation.

### **Public Recreation Programs & Services: Essential**

The municipal recreation programs and services provide an essential public service that builds lifelong interests for the residents and serves as the springboard to more in-depth pursuits in recreation related businesses in the private sector in the Doylestown Community.

### **Promotion of Parks and Recreation: Builds Awareness**

The residents want to know about parks and recreation opportunities on an up-to-date basis in all forms from the WEB to the parks and recreation newsletter and the newspaper.

### **Paying for Parks and Recreation: Concerns**

With the tight fiscal climate, residents and elected officials alike are concerned about paying for parks and recreation

## **The Plan: Something for Everyone**

Not everything can be achieved at once. A commitment of time, money, and articulate leadership needs to drive the implementation of the plan. And the municipalities cannot do it alone! A mix of public and private resources through a host of partnerships is essential to achieve success.

The Doylestown Community is facing two dichotomous challenges: one is the short window of opportunity at hand to acquire park land and preserve open space in the face of tremendous development pressure while the second is the fiscal challenge of a tight budget. Achieving a balance of parks and recreational opportunities that meets the broad needs of the entire community is the crucial goal. "Something for Everyone" was the mantra repeated throughout the planning process. The plan recommends the following actions over the next ten years:

1. **Build on Success.** Capitalize on the significant achievements of the Doylestown Community that took well over 100 years to achieve. Keep pace with changing demographics. Invest in the facilities at a level to maintain them as an asset.
2. **Complete the Bike and Hike Path.** Build the next 12 miles and link to trails in the region beyond Doylestown.
3. **Build a permanent amphitheater in Central Park.**
4. **Obtain additional park and build more sports fields.** Acquire 75 acres of land to build a sports complex.
5. **Encourage the exploration of a performing arts center by a non-governmental entity.**
6. **Explore the potential to merge the Township and Borough parks and recreation systems.** Build on the successful models of the Bike and Hike Path, summer concert series and the Community Council on the Arts.

7. **Achieve balance in parks and recreation.** Expand programs and facilities in all areas of recreation to offer residents the opportunity of leading active healthy lives at all ages.
8. **Expand recreation programs in accordance with staff capacity.** Include township/borough program collaboration, Doylestown Arts in Parks and Recreation, environmental education, and community wide fitness and wellness.
9. **Work with the Central Bucks School District as a partner in community recreation.**
10. **Formalize a park maintenance management system.**
11. **Provide adequate funding for parks and recreation.** Consider a long-term financing program for park land acquisition, open space conservation, the bike path system, and recreation facility development. Strive to be on par or better with statewide municipal investment in operating parks and recreation.
12. **Assume a leadership role in the community to advance parks, recreation and open space initiatives.** Use parks and recreation as a community-planning tool. Continue to create, sustain and enhance effective working relationships with allied community organizations in the arts, sports, and conservation. Foster collaboration among the public and private sectors.

## **Funding Plan**

The implementation of the recommendations of this plan will make a significant positive impact on the Doylestown Community's livability through the social, environmental, economic, and environmental benefits, but not without investment. Projects range in cost from volunteer time to thousands of dollars for operations and maintenance to millions of dollars for land acquisition and facility development.

- Continue to operate within the limits of municipal resources and partner more in parks and recreation to get the most out of every dollar.
- Develop an impact statement for any new project or program. Investigate alternatives for supporting the identified project through non-tax dollars. Only undertake the project if sufficient resources are available for ongoing costs.
- Seek state and federal grants for park planning and development.
- Establish partnerships for recreation facility development and operation.
- Consider developing a long-term financial plan for major actions such as land acquisition and facility development.

# Implementation Schedule

In order to address the significant parks and recreation needs of the Doylestown Community in the future, the implementation schedule has to be clearly focused. The focus needs to be on achieving a balanced system of conservation, parks, and recreation – “Something for Everyone”. The schedule is based on a philosophy that municipal government cannot do everything on its own and that more can be accomplished through public and private partnerships and funding alternatives to local tax dollars. Opportunities arise and needs change requiring adjustments to the schedule. In summary, the implementation schedule is focused as follows:

## Short Term: 2008-2010

- Master plan Central Park including the recently added 42 acres of parkland and with consideration of the aging Kid’s Castle.
- Evaluate the lease with Delaware Valley College to determine the potential use of the currently farmed land for active recreation.
- Negotiate with Bucks County to obtain a long-term lease on Turk Park. Master plan the park to make the best use of the park for community sports.
- Explore potential land to conserve open space and add parkland for community and neighborhood parks and a sports complex.
- Continue to work with community organizations in a collaborative fashion. Identify projects and actions that can be undertaken to advance services for the overall good of the Doylestown Community.
- Conduct a sports field assessment and develop a sports turf management plan to maximize the condition of existing fields.
- Develop a park maintenance management system.
- Manage the Town Center as a park. Consider retaining a firm (perhaps through grant funding) that specializes in the use of public spaces to assist in creating strategies to manage the successful pedestrian area.
- Appoint a Study Committee for the purpose of advancing the amphitheater concept for Central Park. Create a vision and mission for the amphitheater. Establish a promotional program to foster partnerships and potential fundraising efforts. Visit other amphitheaters to see what works. Insure that the amphitheater is designed as a park hub rather than just a structure alone. Retain an architect, a landscape architect and associated design professionals in the art of amphitheater design and construction to design the amphitheater hub.
- Support the efforts of the Bike and Hike Path Committee to further develop the Bike and Hike Path.
- Advocate for Bucks County to undertake a countywide greenway plan as the county plan will open funding opportunities for Doylestown trails and greenways.
- Explore the potential for further merger of parks and recreation between the Township and the Borough. Apply for a Pennsylvania Department of Conservation & Natural Resources Peer-to-Peer grant to undertake the study.
- Develop a 25-year capital improvement plan for Fanny Chapman Pool.
- Establish an employee development program including training and compensation to insure the retention of a high caliber work force.

- Evaluate the roles and responsibilities of the Parks & Recreation Boards for the purpose of implementing this plan and better defining how the boards should function.
- Work towards a partnership with the Central Bucks School District in areas of common interest such as recreation facilities and environmental education.

### **Medium Term 2011-2013**

- Develop a long-term financing plan for funding major capital projects such as land acquisition and major facility development.
- Create another neighborhood park in the Borough. Continue to explore the establishment of neighborhood parks in the Township.
- Master plan additional park and open space areas.
- Carry out recommendations in phases from the master plans of Central Park and Turk Park particularly with adding and enhancing sports fields.
- Assist the efforts of the Fanny Chapman Board in pool improvements and potentially seeking grants.
- Continue to pursue parkland acquisition.
- Continue to work towards conservation of open space in order to prevent loss to development.
- Add further linkages to the Bike and Hike Path.
- Implement the recommendation of the Peer-to-Peer Study regarding joint recreation programs and services.
- Put into place the recommendations of the formalized maintenance management system.
- Develop a formalized marketing system. Include on-going needs assessment, advertising and promotion.
- Continue development of park projects initiated in planning stages of preceding years.
- Focus on fitness and wellness programming to both serve the public and as a source to tap grant funding.

### **Long Term 2014-2017**

- Focus on management and support of the system.
- Continue Bike and Hike Path development.
- Prioritize and implement projects resulting from plans.
- Continue to adjust services to meet the changing demographics and public needs with year round residents as the top priority.
- Continue to pursue parkland acquisition.
- If parkland is secured for another community park, create a master plan and phase in development. Develop the park as a true community park with a combination sports complex, lifetime recreation facilities, conservation areas, and cultural arts including public art evocative of Doylestown.
- Continue to implement resource and open space conservation measures.
- Continue to fund major capital improvement items through long term financing strategies.

**THE NESHAMINY/LITTLE NESHAMINY CREEK  
WATERSHED  
ACT 167 STORMWATER  
MANAGEMENT PLAN**

**FINAL REVIEW DRAFT  
April 10, 2007**

**Pennsylvania DEP  
Bucks County Planning Commission  
Borton-Lawson Engineer, Inc.**

**Review Comment April 10, 2007 to May 10, 2007**

***Please return all comments to:***  
Theresa Bentley, Project Manager  
Bucks County Planning Commission  
Neshaminy Manor Center  
1260 Almshouse Road  
Doylestown, PA 18901



## **SECTION I**

### **Pennsylvania Act 167 and Stormwater Management Planning**

#### **A. Pennsylvania Stormwater Management Act (Act 167)**

The Pennsylvania General Assembly enacted the Pennsylvania Stormwater Management Act (Act 167) in 1978 in recognition of the need to deal with a serious and growing flooding problem in urbanized areas of the state. The statement of legislative findings at the beginning of Act 167 sums up the critical interrelationship between land development, accelerated runoff, and floodplain management. Specifically, this introduction points out that:

1. Inadequate management of accelerated runoff of stormwater resulting from development throughout a watershed increases flood flows and velocity, contributes to erosion and sedimentation, overtaxes the carrying capacity of streams and storm sewers, greatly increases the cost of public facilities to carry and control stormwater, undermines floodplain management and floodplain control efforts in downstream communities, reduces groundwater recharge, and threatens public health and safety.

2. A comprehensive program of stormwater management, including reasonable regulation of development and activities causing accelerated runoff, is fundamental to the public health, safety, and welfare and to the protection of the people of the Commonwealth, their resources, and their environment.

Act 167 institutes a comprehensive program of stormwater planning and management—on a watershed level. The Act requires Pennsylvania counties to prepare and adopt stormwater management plans for each watershed within the county, as designated by the Pennsylvania Department of Environmental Protection (DEP). These management plans are prepared in conjunction with assistance from municipalities in the watershed, working through a Watershed Plan Advisory Committee (WPAC). The plans are intended to provide for uniform technical standards and criteria throughout a watershed for the management of stormwater runoff.

#### **B. Purpose of the Updated Neshaminy and Little Neshaminy Plans**

The Neshaminy and Little Neshaminy plans have been updated to comply with the mandatory update requirements of the Pennsylvania Stormwater Management Act, Act 167, of 1978. Act 167 specifically requires that stormwater management plans be updated anytime after 5 years of the initial plan's approval to ensure that the original standards established are addressing the control stormwater runoff. The original Neshaminy Creek Watershed Act 167 Plan (1992) and the original Little Neshaminy Creek Watershed Act 167 Plan (1996) are fairly dated and fall well within the update timeline requirements. Due to the age of both original plans and because the Little Neshaminy is a hydrologic unit of the larger Neshaminy, a decision was made to update them simultaneously, bringing them back together as one watershed unit. In accordance with this, throughout this document reference

to the “Neshaminy Creek watershed,” or any reference in general to “the watershed” implicitly includes the Little Neshaminy watershed unless otherwise distinguished for descriptive purposes.

This report has been prepared in two volumes. *Volume I—Plan Standards/Criteria and Model Ordinance*, was prepared to present much of the information required to implement the plan. The comprehensiveness of the plan covers legal, engineering, and municipal government topics, which combined, form the basis for implementation and enforcement of ordinance language to be adopted by each watershed municipality. A model stormwater management ordinance can be found in *Section VI*, and should be used by local watershed municipalities to enact ordinance language to implement the standard and criteria developed for stormwater management in the watershed. Watershed municipalities are required by Act 167 to adopt and implement ordinance language consistent with the standards and criteria specified in the plan within 6 months of its approval by the DEP. *Volume II—Technical Appendices*, contains data and information collected during the study. Volume II will not be distributed to municipalities, but a copy will be available for background and reference at the Bucks County and Montgomery County Planning Commission (BCPC) libraries.

### **C. Location**

Both watersheds are situated across both Bucks and Montgomery Counties in Pennsylvania. *Figure 1* is a regional map showing watersheds found throughout Bucks County. The upper limits of the Neshaminy Creek watershed begin in Franconia Township in Montgomery County and in Hilltown Township in Bucks County. It continues southeastwards, through the center of Bucks, discharging into the Delaware River between the Townships of Bensalem and Bristol. The Little Neshaminy also begins in Montgomery County in Montgomery Township and joins the Main stem of the Neshaminy in Northampton Township, Bucks County. The Neshaminy and Little Neshaminy Creek watersheds combine to create a total watershed area of 232.84 square miles.

### **D. Good Stormwater Management**

Stormwater management entails controlling surface runoff caused by precipitation for both quantity and quality parameters. Local perspectives and policies are changing in part due to recent initiative throughout the state such as the National Pollutant Discharge Elimination System (NPDES) regulations, which require many municipalities to manage the local drainage system’s water quality by eliminating the causes of nonpoint source pollutants. Good stormwater management can only be achieved by a comprehensive approach (i.e., analyzing adverse impacts development in watershed headwater areas may have on flooding downstream). This type of attention to stormwater management reduces flooding potential, soil and stream bank erosion, sedimentation, and improves the overall health of the receiving streams and the watershed in general.

To create a good system of stormwater management requires cooperation between state, county, and local officials. It takes time for adequate planning, engineering, construction, operation, and maintenance issues to be addressed for the whole system, not a piecemeal development by development approach. This includes education for public and local officials, program development, financing, policy revision, the development of workable criteria, and the adoption of ordinances. It is in light of this holistic philosophy, the *Neshaminy and Little Neshaminy Creek Watersheds Act 167 Stormwater Management Plan Update* seeks to help focus development occurring within the watershed utilizing all applicable tools and measures at our disposal to help our communities manage stormwater runoff.