

DEVELOPMENT TRENDS IN MONTGOMERY COUNTY PLANNING AREAS, 1960-1985

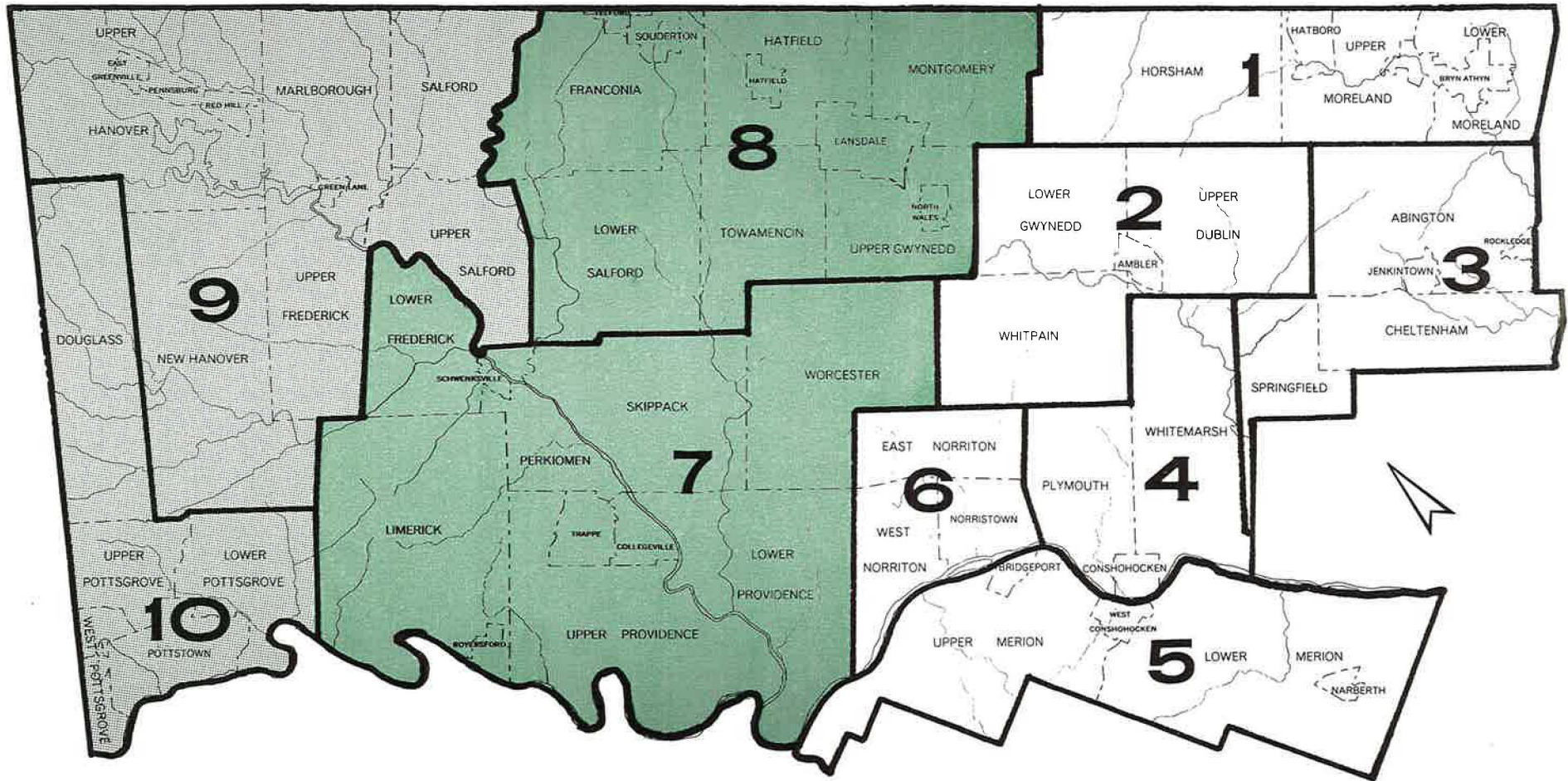


Figure 1-2

- Planning Areas of Greatest Growth
- Planning Areas of Least Growth
- Planning Areas of Average Growth



MONTGOMERY COUNTY PLANNING COMMISSION

The preparation of this map was financed in part by the Pennsylvania Department of Environmental Resources, as provided for in the Pennsylvania Sewage Facilities Act (Act 537 of 1966).

Note: Numbers Indicate Planning Areas Prior to January, 1972.

industrial employment increased by 43,600 persons to a 1960 level of 76,700. Between 1960 and 1985 it is anticipated that industrial employment will increase by 90,000 persons or by 118%.

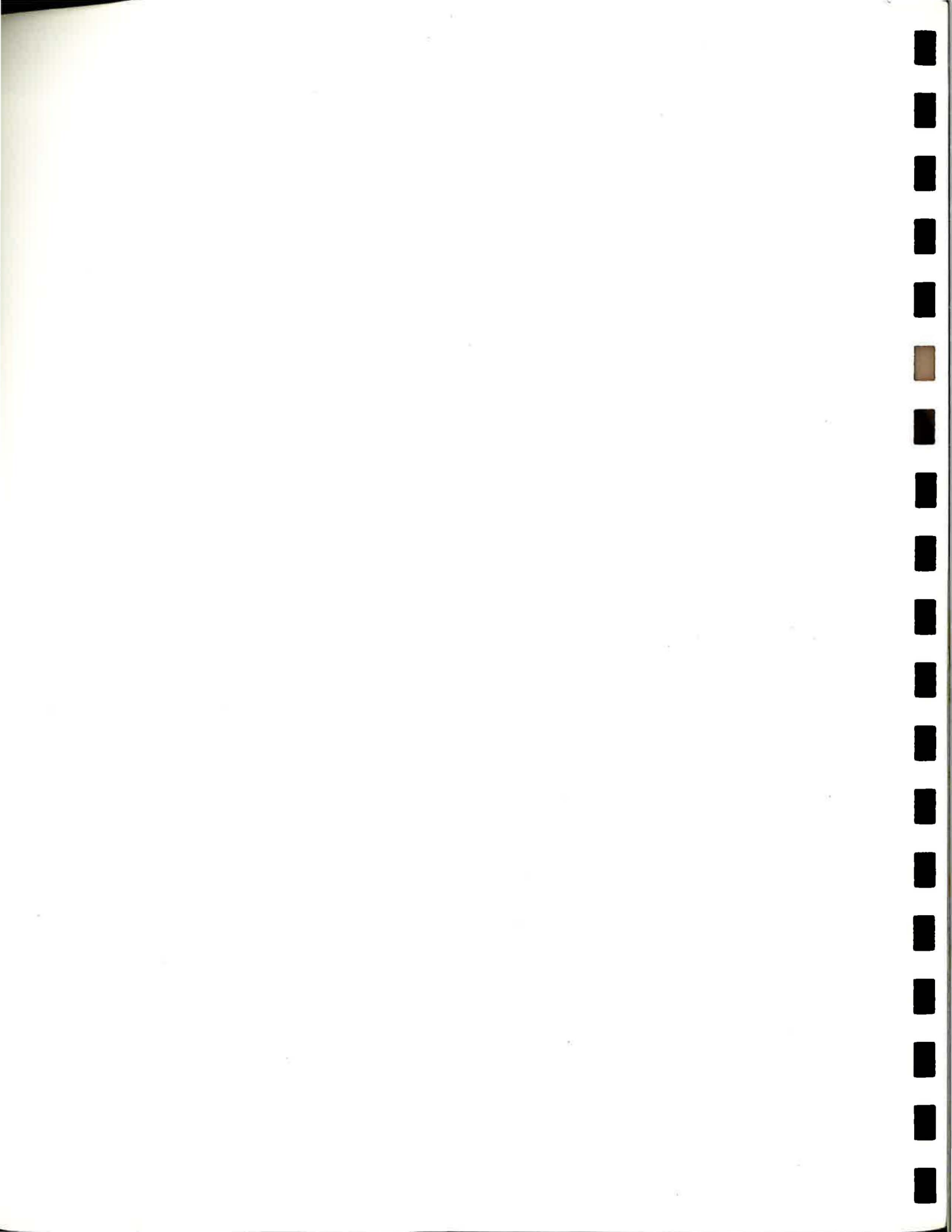
3. Approximately one-fourth of the county's employment base is engaged in commercial activity and one-eighth is engaged in institutional employment. The balance of employees represents a variety of types including agricultural and domestic workers.

4. The North Penn Area (number 8 on figure i-2) and Lower Perkiomen Valley (number 7 on figure i-2) are expected to exhibit the greatest increase of employment of the 10 planning areas between 1960 and 1985. Both of these planning areas will also probably experience the greatest growth in terms of increased developed land and increased population in the same time period.

5. The Conshohocken (area 4), Norristown (area 6) and Pottstown (area 10) areas are the three planning areas expected to experience the least growth in terms of employment between 1960 and 1985.

Figure i-2 represents graphically those planning areas of greatest and least growth. These areas of growth were judged according to all three of the parameters previously mentioned, including land development, population and employment. These three parameters of growth were measured both absolutely and in terms of percentage increase. The results were then combined in such a way as to demonstrate planning areas of greatest and least "overall" growth.

In view of the tremendous growth that Montgomery County's municipalities have experienced since the end of World War II and the even greater growth that can be expected within the next 10 to 15 years, new ways must be found to resolve the problems associated with public sewage facilities. The development of a county-wide sewage facilities plan is believed to be the first step in that direction.



II

NATURAL FEATURES AND THEIR EFFECT ON SEWER PLANNING

The physical features of Montgomery County are significant from the standpoints of guiding the future growth of the county in general and in county-wide sewage facilities planning in particular. Topographic considerations, soils and natural drainage have a direct bearing on the historic as well as the projected distribution of various types of land use, circulation systems, population growth, community facilities and a wide spectrum of those ingredients required to make a viable community.

Included in this chapter of the report are the physiographic considerations (drainage basins, slopes and layer relief) which have a direct bearing on sewage facilities planning. Because of the interrelationship of soils and the use of on-site sewage disposal systems, the chapter includes a discussion of the distribution and effectiveness of on-site sewage disposal systems. The primary thrust of the chapter is to survey these natural features from a county-wide standpoint and to note the interrelationship between them and sewage facilities planning.

DRAINAGE BASINS OF MONTGOMERY COUNTY

1. All of Montgomery County lies within the Delaware River Drainage Basin and most of the county lies within the Schuylkill River Sub-basin.
2. Of the seven major regional sub-basins in Montgomery County, two (the Perkiomen and the Wissahickon) drain into the Schuylkill River which in turn drains into the Delaware River. The remaining five drain into the Delaware River and are the Pennypack, Poquessing, Neshaminy, Tookany (Tacony) and Darby (the Indian Creek tributary).
3. For the purposes of county-wide sewage facilities planning, 15 watersheds or major stream reaches have been identified, population estimates for each have been prepared and each of the 90 treatment plants located within Montgomery County has been identified as being located within its appropriate watershed (see figure ii-1).
4. The availability of public sewer services varies widely within these 15 drainage basins. Virtually all of the Tookany and Indian and portions of the Pennypack, Wissahickon and Schuylkill-south watersheds are served by treatment facilities located within Philadelphia. One is in Northeast Philadelphia and the other is in Southwest Philadelphia.
5. All 15 watersheds are served in part by public sewerage systems. Most also contain additional non-municipal and industrial wastewater treatment plants.
6. Two of the 15 watersheds have no sewage treatment plants at all (Stony and Indian), while at the other end of the spectrum the Wissahickon drainage basin has 18 treatment plants, the Lower Perkiomen, 12, and the Neshaminy, 10.

SLOPES AND LAYER RELIEF

1. The provision of public sewage facilities is rendered difficult in areas which either have extremely steep slopes or are nearly level.

Figure ii-1

POPULATION AND SEWAGE TREATMENT PLANTS BY WATERSHEDS IN MONTGOMERY COUNTY

Watersheds	1960 Population	Sewage Treatment Plants			
		Municipal	Non- Municipal	Industrial	Total
Perkiomen-Upper	13,010	3	4	1	8
Swamp	7,010	2	3	0	5
Perkiomen- East Branch	7,520	2	1	0	3
Perkiomen-Lower	16,300	1	9	2	12
Schuylkill-North	47,220	2	2	2	6
Skippack	24,970	2	1	2	5
Neshaminy	18,590	3	4	3	10
Wissahickon	74,350	6	3	9	18
Pennypack	63,220	1	7	0	8
Tookany	61,370	0	0	1	1
Schuylkill-East	47,180	4	0	2	6
Schuylkill-South	63,360	3	0	3	6
Stony	33,740	0	0	0	0
Schuylkill-Central	12,990	0	1	1	2
Indian	25,850	0	0	0	0
Totals	516,680	29	35	26	90

Source: Montgomery County Planning Commission Population Estimates and data compiled from records of Department of Health and Albright & Friel.

2. Throughout Montgomery County's landscape slopes are relatively gentle and the provision of sewer service is, therefore, not generally inhibited by topographic considerations.

3. Montgomery County's elevation ranges from approximately 15 to 750 feet above sea level. The three lowest elevations are found where the Schuylkill, Tookany and Pennypack meet the Philadelphia County line. The highest elevations are found in the horseshoe area surrounding East Greenville, Pennsburg and Red Hill boroughs.

SOILS OF MONTGOMERY COUNTY

1. For planning purposes, a knowledge of soils can be used to ascertain areas of frequent flooding, areas where there is a high water table and areas where there is difficulty in establishing and/or maintaining properly functioning on-site sewage disposal systems.

2. By relying upon the "Soil Survey of Montgomery County, Pennsylvania," prepared by the Soil Conservation Service of the United States

Department of Agriculture in 1967, the various characteristics of soils can be determined with a high degree of accuracy and can be reliably mapped on a county-wide base.

3. The presence of a soil with those characteristics which hinder the proper absorption and filtration of on-site wastewater may create health hazards as well as public nuisance situations. Soil characteristics affecting the operation of on-site systems include permeability, depth to bedrock, depth to seasonal high water table, slope, stoniness and flood hazards.

4. The Pennsylvania Sewage Facilities Act indicates that on-site disposal systems should not be installed in areas where soil characteristics and certain other qualifying factors reveal that malfunctioning systems are to be expected.

5. For purposes of the act, the Pennsylvania Department of Health has established four categories of limitations for on-site sewage disposal. The four categories and a brief description of each are as follows:

a. Hazardous Limitations - These soils are generally not suitable for on-site disposal of sewage due to the possibility of ground water pollution or contamination. Most of these soils in Montgomery County are underlain by limestone formations.

b. Severe Limitations - These soils are not satisfactory for on-site disposal of sewage due to the presence of impervious water restricting layers, high water tables, flooding, steep slope, shallowness, etc.

c. Moderate Limitations - These soils may be suitable for on-site disposal of sewage provided the subsoil is permeable. They also include "man-made" soils as well as soils in their natural state.

d. Slight Limitations - These soils are generally suitable for on-site disposal of sewage.

6. The spatial distribution and areal extent of these four types of soils in Montgomery County is graphically presented in figure ii-2.

7. Examination of the soil suitability map reveals that the overwhelming predominance of soils in Montgomery County contains severe limitations for on-site disposal of sewage.

8. Virtually all soils in the hazardous limitation category are found in the Chester-Whitemarsh Valley to the Chester County line.

9. Generally speaking land development with on-site disposal systems should not be permitted on severe and hazardous soils unless public sewer service is to be provided within a reasonably short period of time. Municipalities should take appropriate steps to discourage development in this regard.

10. At the other end of the spectrum, soils designated as having slight limitations for on-site disposal facilities are not plentiful in Montgomery County and are widely dispersed. Comparatively little of the

county's landscape can be allocated to land use types which will rely upon on-site disposal systems as a permanent means of disposing of wastewater.

11. Soils in the moderate limitations category consist of basically two types of conditions - "man-made" soils and natural soils in rural areas. Most soils in the moderate limitation category consist of the "man-made" type of soil and can serve to represent a rough index to the degree of urbanization in Montgomery County. The moderate limitation soils that are in their natural state are widely scattered and do not encompass a significant portion of the county.

12. The relationship between soil conditions, public sewage facilities planning, community planning and land development patterns is an extremely important one and must be recognized as such.

13. Public sewer service is a necessity for most of the anticipated development that will occur in the county. It is evident that municipal officials must take positive steps to provide public sewers to those developed areas of the county that are not now served as well as to those undeveloped areas of the county that are expected to develop in the future.

THE USE OF ON-SITE SEWAGE DISPOSAL SYSTEMS

1. Over the years an ever increasing number of residents of Montgomery County have been served by public sewage facilities. Estimates indicate that 490,700 persons (or 74% of the estimated 1969 population) are connected to a public system. However, this means approximately 170,300 residents in Montgomery County are served by on-site disposal systems. Based upon the recommendations of the Montgomery County Sewage Facilities Plan, it is estimated that the number of county residents relying upon on-site systems will be dramatically reduced to approximately 38,000 through the implementation of an ambitious sewage facilities program. Thus it is estimated that 132,000 fewer persons will rely upon on-site systems in 1979 than in 1969 despite a county-wide population increase of approximately 168,000.

2. Evidence indicates that even apparently reliable on-site wastewater disposal systems may prove unreliable in the future. Increasing per capita water consumption overloads the capacity of on-site disposal systems. In the days when household water was pumped by hand from a well, the volume of wastewater was quite minimal and the disposal of wastewater was comparatively quite simple and safe. The electric pump facilitated obtaining household water in greater volume and led to such modern conveniences as flush toilets, washing machines, automatic washers, dishwashers and garbage disposal units. These various conveniences, which are so often viewed as essential to the homeowner, have caused many problems for on-lot disposal systems.

3. The ineffectiveness of on-site systems is difficult to measure statistically because the Pennsylvania Department of Health's records are kept on a "complaint basis" rather than as a result of a systematic surveillance. Many county residents are unaware of the Department of Health's role in questions affecting public sanitation, while others are reluctant to report malfunctioning for fear of costs resulting from remedial measures.

4. Many newly installed on-site sewer disposal systems appear to function satisfactorily for a period of time and possible health hazards are not recognized until they become quite severe. Based on past experience it can be concluded that many newly installed systems will malfunction after soils become saturated with effluent and can no longer dispose of wastewater. The inability to pinpoint a time period or to document the number of malfunctioning systems should not be viewed as an excuse for minimizing the problems.

5. On-site disposal systems are found throughout those portions of Montgomery County where public sewer service is not available. They are found in direct proportion to the density of development in such areas and are related to the magnitude of the potential problems encountered.

Because of the importance of relating sewage facilities planning to various physiographic considerations, a major thrust of the Montgomery County Sewage Facilities Plan places emphasis on watershed-wide considerations. Drainage basins, slopes and layer relief have been considered since they involve decisions and recommendations of the sewage facilities plan. This chapter has also included a discussion on the relationship between soils and the use of on-site sewage disposal systems in the county. Because of the prevalence of generally unfavorable soils for on-site disposal systems, their use in Montgomery County should be curtailed and greater reliance must be placed upon providing public sewage facilities wherever they can be economically justified and especially to new developments of significant proportions.

III

WATER SUPPLY AND THE QUALITY OF SURFACE WATER IN MONTGOMERY COUNTY

In recognition of the interrelationship between sewer planning and the sources and distribution of potable water as well as the quality of surface water, attention has been directed in this chapter to these subjects. The satisfactory disposition of sanitary wastewater has a direct bearing on both the ground water and the surface water of Montgomery County, and both are utilized in the county as sources of water supply. Insufficiently treated wastewater is a major cause of surface water pollution in Montgomery County and contributes to the contamination of ground water supplies as well. Malfunctioning on-site disposal systems can directly lead to the contamination of both surface and ground water. Sewage treatment plant discharges that "overwhelm" the natural capacities of receiving streams directly lead to the contamination of surface water supply.

The first portion of this chapter considers the relationship between sewage disposal and water supply facilities, while the second portion is devoted to the subject of surface water quality. Background information has been assembled and analyzed to determine the impact and the extent of the interrelationship between matters involving water supply and quality of surface water as it affects and is affected by sewage facilities planning.

RELATIONSHIP BETWEEN SEWAGE AND WATER FACILITIES

1. Potential waterborne hazards to community health are virtually nonexistent where both public sewage and central water facilities have been provided. Conversely, community health hazards are potentially greatest where on-site sewage disposal systems and on-site water supply facilities are utilized.

2. There are many areas of the county where neither centralized water nor public sewage facilities are available; while in other areas one of these utilities is provided but not the other.

3. As long as on-site waste disposal is practiced in parts of Montgomery County and on-site water supply facilities are used in other parts, a potential but distinct health hazard exists.

4. Water pollution does not necessarily result from the disposal of wastewater only. Contamination of surface and ground water can and does result from the use of agricultural chemicals and fertilizers, animal wastes, industrial dusts and many other agricultural and urban activities.

5. Most of the county's population (72% according to current estimates) is served by centralized water supply systems, but this utility is available to only a relatively small portion of the county's land area.

6. One of the greatest challenges facing the county from a developmental standpoint is to insure the orderly provision of centralized water facilities and public sewage facilities to those areas now needing it as well as to all significant new development.

7. Every effort must be expended to insure coordination in the provision of centralized water and public sewage facilities with topographic

considerations (i.e. soil characteristics and geological formations especially), population densities and realistic zoning and other land use controls.

8. Approximately 195,000 Montgomery County residents presently depend upon on-site facilities for their water supply. This represents about 28% of the resident population, and they are widely distributed over two-thirds of Montgomery County's 500 square miles.

FACTORS INFLUENCING AVAILABILITY OF WATER

1. The two main sources from which water can be drawn for domestic, industrial and agricultural uses are: (1) surface water, and (2) ground water.

2. Surface water refers to water which flows over or rests upon the earth's surface. Surface water supplies are currently used on a very limited basis in the county. The Schuylkill River and the Perkiomen Creek (Green Lane Reservoir of the Philadelphia Suburban Water Company especially) are the largest of the two surface water supplies.

3. Virtually all other sources of water in the county involve ground water supplies. Geologic formations are the key to the availability of potable water from underground sources.

4. Ground water supplies vary from excellent in the case of the Stockton and Wissahickon formations to the Sunderland and Bryn Mawr formations where little or no water is found. Unfortunately most of the 18 bedrock formations found underlying Montgomery County's landscape are not good aquifers. Water supplies relying on such formations usually will not prove satisfactory. Of the 18 bedrock formations, those which are poor aquifers underlay the vast majority of the county's landscape.

5. Greater reliance will have to be placed on surface water supplies in the future as the county continues to develop because of the generally poor water bearing characteristics of the bedrock geology. Because of this expected reliance on surface water, the quality of the county's surface water is of major practical significance and this has a direct bearing on the county-wide sewage facilities plan.

CENTRALIZED WATER SUPPLY FACILITIES

1. In 1969, 24 water utility companies operated within Montgomery County and provided service to approximately 72% of the county residents (or 466,000 persons). These water utilities include municipal water departments, governmental water authorities, institutional water agencies and private water utility companies.

2. Information concerning the areas serviced, the primary and secondary sources of water utilized, the number of customers serviced and the estimated population served for each of these 24 water companies is embodied in figure iii-1.

3. Based upon information available, it would appear to be an entirely desirable objective to provide all future large-scale developments with both public sewer facilities and centralized water distribution systems.

Figure iii-1

CENTRAL WATER SUPPLY FACILITIES DATA FOR MONTGOMERY COUNTY

Municipality Served and/or Water Company-Authority	Other Areas Served	Sources and Impoundments (Primary Sources Listed First)	Customers Served	1969 Estimated Population Served	Municipality Served and/or Water Company-Authority	Other Areas Served	Sources and Impoundments (Primary Sources Listed First)	Customers Served	1969 Estimated Population Served
1. Ambler	Part of U. Dublin, Whitpain, L. Gwynedd and Whitemarsh	6 wells and springs	4,902	17,000	14. Pennsburg Water Co.	Part of U. Hanover, Montgomery County, and part of Hereford, Berks County	2 wells	700	2,400 ^a
2. Collegeville-Trappe Joint Water Works	--	4 wells	725	5,500 ^a	15. Philadelphia Suburban Water Co.	Bryn Athyn, Conshohocken, Jenkintown, Narberth, Rockledge and W. Conshohocken; Abington, Cheltenham, L. Merion, L. Moreland, Plymouth, Springfield, U. Dublin, U. Merion and Whitemarsh	Pickering Creek Reservoir; Perkiomen Creek; Green Lane Reservoir; Schuylkill River; 9 wells	71,576	250,500
3. E. Greenville Water Works	--	Perkiomen Creek and 2 wells	600	2,000 ^a	16. Pottstown Boro. Water Dept.	W. Pottsgrove; part of U. Pottsgrove and L. Pottsgrove in Montgomery County, and N. Coventry in Chester County	Schuylkill River	9,300	35,000
4. E. Norriton Water Co.	--	2 wells	80	240 ^a	17. Red Hill Water Auth.	--	spring	350	1,100 ^b
5. Hatboro Auth.	Part of Horsham and U. Moreland	9 wells	4,100	14,300	18. Royersford Home Water Co.	Spring City and part of E. Vincent, both in Chester County, and part of Limerick and U. Providence in Montgomery County	Schuylkill River	2,557	9,000
6. Hatfield Boro. Water Auth.	--	6 wells	N.A.	2,200 ^b	19. Schwenksville Water Co.	Part of L. Frederick and Perkiomen	4 wells	370	1,500 ^a
7. Lansdale--North Penn Water Auth.	Souderton Boro., Franconia, Hatfield, Towamencin, L. Salford, U. Gwynedd and Montgomery Twps.	23 wells and bulk water from North Wales Water Auth.	8,000	28,000	20. Skippack Twp. State Correctional Inst.	--	8 wells	--	2,000 ^a
8. L. Providence--Audubon Water Co.	--	3 wells	500	1,750	21. Telford Water	Souderton and part of Franconia in Montgomery County; part of Hilltown and W. Rockhill in Bucks County	3 wells	950	3,300
9. L. Providence--St. Gabriel's Hall	--	2 wells	--	210 ^a	11. Norristown State Hospital	--	6 wells	--	7,000 ^a
10. L. Providence--Valley Forge Industrial Park Water Co.	--	3 wells	--	N.A.	12. Norristown Water Co.	Bridgeport, part of E. Norriton, W. Norriton, L. Providence, Plymouth, U. Merion and Whitpain	Schuylkill River	18,738	65,500
11. Norristown State Hospital	--	6 wells	--	7,000 ^a	13. North Wales Water Auth.	U. Gwynedd and L. Gwynedd, bulk water to North Penn Water Auth., Montgomery, Worcester, and Hatfield Twps., and bulk water to New Britain, Bucks County	9 wells	4,000	14,000
12. Norristown Water Co.	Bridgeport, part of E. Norriton, W. Norriton, L. Providence, Plymouth, U. Merion and Whitpain	Schuylkill River	18,738	65,500	22. U. Dublin Twp. Delaware Valley Ind. Water Co.	Fort Washington Ind. Park	2 wells	25 ^a	N.A.
13. North Wales Water Auth.	U. Gwynedd and L. Gwynedd, bulk water to North Penn Water Auth., Montgomery, Worcester, and Hatfield Twps., and bulk water to New Britain, Bucks County	9 wells	4,000	14,000	23. U. Dublin--Dublin Water Co.	--	1 well	250	1,000 ^a
14. Pennsburg Water Co.	Part of U. Hanover, Montgomery County, and part of Hereford, Berks County	2 wells	700	2,400 ^a	24. Whitpain Twp.-Blue Bell Water Works Co.	--	3 wells	700	2,400
15. Philadelphia Suburban Water Co.	Bryn Athyn, Conshohocken, Jenkintown, Narberth, Rockledge and W. Conshohocken; Abington, Cheltenham, L. Merion, L. Moreland, Plymouth, Springfield, U. Dublin, U. Merion and Whitemarsh	Pickering Creek Reservoir; Perkiomen Creek; Green Lane Reservoir; Schuylkill River; 9 wells	71,576	250,500	TOTALS			128,423	465,900
16. Pottstown Boro. Water Dept.	W. Pottsgrove; part of U. Pottsgrove and L. Pottsgrove in Montgomery County, and N. Coventry in Chester County	Schuylkill River	9,300	35,000					
17. Red Hill Water Auth.	--	spring	350	1,100 ^b					
18. Royersford Home Water Co.	Spring City and part of E. Vincent, both in Chester County, and part of Limerick and U. Providence in Montgomery County	Schuylkill River	2,557	9,000					
19. Schwenksville Water Co.	Part of L. Frederick and Perkiomen	4 wells	370	1,500 ^a					
20. Skippack Twp. State Correctional Inst.	--	8 wells	--	2,000 ^a					
21. Telford Water	Souderton and part of Franconia in Montgomery County; part of Hilltown and W. Rockhill in Bucks County	3 wells	950	3,300					
22. U. Dublin Twp. Delaware Valley Ind. Water Co.	Fort Washington Ind. Park	2 wells	25 ^a	N.A.					
23. U. Dublin--Dublin Water Co.	--	1 well	250	1,000 ^a					
24. Whitpain Twp.-Blue Bell Water Works Co.	--	3 wells	700	2,400					

Notes: ^a"Water Resources Bulletin No. 3, Water Resources of the Schuylkill River Basin," Commonwealth of Pennsylvania Department of Forests and Waters, Harrisburg, May, 1968.

^b"Comprehensive Plan Volume III, North Penn Area, Montgomery County, Pennsylvania," Montgomery County Planning Commission, Norristown, Pa., 1969.

Source: Interviews with utility representatives September 1969 unless otherwise indicated.

Failure to accomplish this objective can only serve to create potential community health hazards in addition to those that now exist.

4. Every effort should be made to provide centralized water service to those developed areas of the county where such service is not now available in order to relieve the existing and/or potential health hazards.

QUALITY OF STREAM WATER IN MONTGOMERY COUNTY

1. Surface water is used by agricultural, industrial and public uses for many purposes including irrigation, industrial cooling and the assimilation of treated as well as untreated waste effluent. In addition to these consumer uses, surface water provides an environment for plant and animal life, is an important factor in active recreation and has aesthetic qualities which are important for passive recreation. Surface water adds to enjoyment in both urban and rural areas, but pollution reduces both the economic and social value of water.

2. The cause of water pollution varies. In rural areas waters are contaminated through agricultural activities (fertilizers, animal wastes, pesticides, erosion and sedimentation). The most common source of water pollution in urban areas is from municipal and industrial sewage and includes such other items as debris and oil spills.

3. Surface water pollution is measured by a number of criteria including fecal coliform, pH factor, Biochemical Oxygen Demand (BOD), Dissolved Oxygen (DO), water temperature, turbidity and various other factors.

4. Both the federal and state governments have established standards for recreational water and for water supply purposes. These standards refer to the criteria measured in paragraph #3 above and are quite complex because of the many interrelationships involved in the question of water quality.

5. The federal standards refer to interstate waters and the state standards refer to other streams. Both sets of standards have been prepared with their own goals and conditions in mind and are not entirely consistent.

6. State standards apply to Montgomery County waters. These are set according to the uses desired for streams on a watershed basis. They are utilized by the technicians involved in sewage plant design and serve to establish guidelines for county-wide sewage facilities planning.

7. The quality of water reflected in the standards should be compared with existing conditions to determine the degree of water pollution prevalent in Montgomery County. Unfortunately not much information exists for determining the quality of the waters in the county. Most information comes from three relatively recent sources: (a) the Wissahickon Creek Study - beginning in 1958; (b) the Perkiomen Creek Study - summer of 1966; and (c) the Skippack Creek Study - 1970.

8. The Pennsylvania Department of Health provides additional sources of information. Three sampling stations are maintained by the department,

and supplemental information is available from the sampling stations maintained by the U.S. Geological Survey.

9. Not enough information is available from these various sources to draw county-wide conclusions. However, based upon information available, it would appear that stream degradation has advanced to severe levels in parts of Montgomery County. Presently available information provides significant warning signs.

10. More information is needed and appropriate agencies should increase not only the number of sampling stations but also the frequency of sample collection and analysis.

11. The Department of Health has undertaken the task of upgrading stream quality. The department has revised its requirements concerning the quality of the effluent by various watersheds in Montgomery County. Individual dischargers (both public and private) have been given notice of a time schedule to which they must conform for upgrading to the revised requirements. Within Montgomery County, revised requirements have been issued in the Neshaminy, Wissahickon and Perkiomen watersheds.

12. The Pennsylvania Department of Health conducts periodic inspections of sewage treatment and industrial effluents on a regular basis. According to the results of these inspections (June 1970), 73% of the dischargers are in compliance with state standards and 27% are not. Of the 27% not in compliance, approximately half are considered by the department to be making satisfactory progress toward upgrading, but the other half are not. Apparently greater pressure must be brought to bear upon those dischargers who are not in conformance with state standards to bring about compliance.

13. Even assuming complete compliance with current standards, the quality of surface water in Montgomery County would likely still be unsatisfactory.

Given the ever increasing demand for the adequate supplies of potable water from centralized sources, much more attention must be devoted in the future to safeguarding the quality of water supplies and to providing distribution systems. The quality of sewage treatment in Montgomery County has a direct bearing on the quality of surface water and an indirect bearing on the quality of ground water. The interrelationship between the provision of sewage collection systems and water distribution facilities must also be more clearly recognized. The provision of water supply distribution systems and the quality of water sources are recognized in the development of the county-wide sewage facilities plan.

