

The map displays three distinct project study areas. The 'Western Project Area' is shown in the upper left, colored light gray. The 'Fringe Project Area' is located in the center, colored with diagonal hatching. The 'Eastern Project Area' is in the lower right, colored dark gray. The map also shows the boundaries of various municipalities within these areas.

**Sewer Authority Boundaries**







The map displays the following sewer authority areas:

- Tulsa:** Green area in the north and west.
- Broken Arrow:** Red area in the center.
- Owasso:** Orange area in the south.
- Sapulpa:** Yellow area in the southwest.
- Other Authorities:** Various smaller areas in different colors (blue, purple, pink, etc.) representing other local sewer districts.

Major roads shown include I-44, I-75, and various US and State Routes.

Map of Delaware County, Pennsylvania, showing the Western Project Area. The map includes labels for various townships and cities, such as Edgmont, Upper Providence, Media, Rose Valley, Nether Providence, Swarthmore, Ridley, Morton, Springfield, Marple, Radnor, Havertown, Upper Darby, Landdowne, East Landowne, Yeadon, Darby, U.D., Alder, Clifton Heights, Haverford, Millbourne, Tinticum, Tinticum Township WWTP, Eddystone, Chester City, Upland, Chester Twp., Brookhaven, Parsippany, Trainer, Lower Chichester, and Marcus Hook. The Delaware River is shown on the left, and the City of Philadelphia is indicated at the bottom. The map also shows the boundaries of Chester County to the north and Montgomery County to the east.

## Legend

	Municipal Boundary
	Sewer Authority Boundary
	Sewered Area**
	Pump Station
	Sewage Treatment Plant
	Sewer Lines (Inches)
2 - 8	
10 - 16	
18 - 36	
42 - 72	
No Diameter Available	



**Source:**  
**Johnson, Mirmiran and Thompson -**  
**Sewer Data**  
**Delaware Valley Regional Planning**  
**Commission - Municipal Boundaries**

# Delaware County Act 537 Sewage Facilities Plan Update, Eastern Plan of Study

**Prepared by  
Delaware County Planning Department  
2002**



## **CHAPTER 4**

### **EVALUATION OF WASTEWATER TREATMENT NEEDS**

#### **INTRODUCTION**

One of the most important components of a sewage facilities plan is an analysis of sewage treatment needs. While some portions of western Delaware County continue to rely heavily on individual on-lot subsurface or community sewage treatment systems, eastern Delaware County is served by an existing network of sewage collection and conveyance lines that directs flows to regional sewage treatment facilities. However, there are still several unsewered "pockets" within the eastern study area covered by this plan. The following is an evaluation of the prevalence of and the suitability for on-lot sewage disposal in the eastern study area.

#### **ON-LOT SEWAGE DISPOSAL SYSTEMS**

##### **Location of On-Lot Systems**

Despite the availability of public sewers to serve most of eastern Delaware County, there still remain a few areas that continue to be served by on-lot sewage disposal systems. During spring 2000, DCPD conducted a survey to determine the extent and location of on-lot systems in the eastern municipalities. Only twenty-six of the thirty-five municipalities responded to the survey, and only four of the twenty-six municipalities noted the existence of on-lot systems in their communities. Efforts on the part of DCPD to obtain more specific information concerning where and why these areas remain unserved by public sewers were unsuccessful.

Table 4-1 contains data obtained from the 1990 Census showing that a number of housing units in the eastern study area utilized septic tanks/cesspools. Although Census 2000 information will likely indicate a change in these figures, such information is valuable to note because it may help to provide a sense of the number of on-lot systems that are actually operating in the eastern study area. This information should be considered by municipalities when formulating their individual sewer connection policies.

##### **On-Lot System Management and Maintenance**

None of the four eastern municipalities with on-lot systems noted that they had ordinances requiring septic tank maintenance or inspection at specified intervals. Only one of the four municipalities expressed an interest in

TABLE 4-1

## EASTERN DELAWARE COUNTY SEPTIC SYSTEMS

1990 Census Sewer Counts	Public Sewer	Septic Tank/ Cesspool*	Other Means	Occupied Housing Units
Aldan Borough	1,803	13	0	1,769
Chester City	16,298	64	150	14,537
Chester Township	1,795	70	14	1,778
Clifton Heights Borough	2,821	8	7	2,747
Collingdale Borough	3,459	0	24	3,317
Colwyn Borough	970	0	0	924
Darby Borough	4,027	8	7	3,709
Darby Township	3,909	17	15	3,822
E. Lansdowne Borough	999	0	0	961
Eddystone Borough	1,071	0	0	993
Folcroft Borough	2,613	0	10	2,544
Glenolden Borough	3,029	19	7	2,907
Haverford Township	17,942	250	25	17,727
Lansdowne Borough	5,092	11	12	4,917
Lower Chichester Township	1,279	0	0	1,212
Marcus Hook Borough	1,055	0	0	990
Marple Township	8,016	408	9	8,193
Millbourne Borough	405	4	4	379
Morton Borough	1,215	4	0	1,155
Nether Providence Township	4,811	228	6	4,807
Norwood Borough	2,267	0	0	2,219
Parkside Borough	948	3	2	928
Prospect Park Borough	2,682	13	17	2,617
Radnor Township	9,568	1,013	6	9,838
Ridley Township	12,164	9	52	11,889
Ridley Park Borough	3,133	5	14	3,045
Rutledge Borough	334	0	0	324
Sharon Hill Borough	2,240	11	0	2,156
Springfield Township	8,471	125	8	8,435
Swarthmore Borough	2,098	17	0	2,023
Tinicum Township	1,796	0	0	1,736
Trainer Borough	891	15	6	871
Upland Borough	1,224	0	0	1,187
Upper Darby Township	33,925	137	53	32,746
Yeadon Borough	4,973	40	6	4,794

\*Data on sewage disposal were obtained from questionnaire item H16, which was asked on a sample basis. Housing units are either connected to a public sewer, to a septic tank or cesspool, or they dispose of sewage by other means.

Source: U. S. Bureau of the Census, 1990

participating in an on-lot sewage system maintenance and/or education program.

Survey responses indicated that septic tank cleaning and septage hauling services are privately contracted by homeowners. None of the municipalities are aware of the ultimate disposal destination for sewage sludge, and none require haulers to keep records regarding quantities of septic tank sludge hauled.

## **SUITABILITY FOR ON-LOT SEWAGE DISPOSAL SYSTEMS**

In order to determine the suitability of areas for on-lot systems, a number of physical factors must first be examined. This section addresses soil characteristics, slopes, floodplains, wetlands, topography, and geology, the factors most influential in the siting of on-lot systems.

This information is provided here for planning purposes only and is not intended for use as a basis for determining the suitability of subsurface systems for any given tract of land. For a preliminary determination of soil suitability, please consult the Soil Survey of Chester and Delaware Counties and any updates available from the Soil Conservation Service. Field testing observed or conducted by a certified SEO is needed for final determination of suitability.

### **Soils**

The ability of soil to physically, chemically, and biologically renovate sewage varies with the soil characteristics affecting drainage and permeability, including depth to bedrock and depth of the seasonal high water table. Such information can be found in general form in the U.S. Department of Agriculture's Soil Survey of Chester and Delaware Counties and in the DEP Technical Manual for Sewage Enforcement Officers. Given the availability of public sewers to serve most of eastern Delaware County, this section of the report does not include a detailed soils suitability analysis. Any developer or homeowner desiring to site a new or replacement on-lot system should contact the respective municipal Act 537 SEO for a determination of suitability of a specific location for an on-lot system.

### **Slopes**

Residential and commercial development in areas of steep slopes creates problems for the use of on-lot disposal systems. Sewage effluent may be difficult or impossible to control and may result in pollution of the surface and groundwater. The extra weight of buildings and effluent from on-lot systems, in combination with the erosion, flooding, and sedimentation that may take



place from construction on steep slopes, may cause slope failure and slumping if the soil becomes saturated. This can cause damage to development both on the slope itself and on areas downslope. Shallow soils frequently encountered in areas of steep slopes make on-lot disposal systems and drainage facilities difficult to install.

The steep slopes found in eastern Delaware County generally parallel the County's stream channels, and slopes gradually decrease as one approaches the Delaware River. Extensive areas of slopes in excess of 15% are found in several locations throughout the County.

### **Floodplains**

All of the major creeks that traverse Delaware County overflow their banks from time to time. The Federal Emergency Management Agency (FEMA) has prepared maps indicating areas of the 100-year flood. The FEMA map panels are available at the administration building in each municipality and at DCPD. They may also be purchased from the FEMA offices in Philadelphia or in Bethesda, Maryland. Due to such factors as a seasonal high water table and exposure to the flood hazard, floodplain soils generally pose moderate to severe limitations for development and on-lot disposal systems.

### **Wetlands**

Wetlands are generally low-lying areas with high water tables that are temporarily or intermittently filled with shallow water. The density of the soil particles in wetland soils results in low percolation rates, causing sewage to seep to the surface and producing wet, smelly, and unsanitary conditions. A high seasonal water table is generally indicative of lateral movement of water to adjacent water bodies, and any alteration of the water movement or water quality in these areas will have a direct impact on neighboring waters. Areas where the water table is at the surface are highly vulnerable to pollution. Therefore, wetlands can be considered areas unsuitable for on-lot systems. For more information on the location of wetlands, consult the Soil Survey of Chester and Delaware Counties for the presence of hydric soils or refer to the National Wetlands Inventory maps prepared by the U.S. Department of the Interior.

### **Topography**

Since sewers are usually designed to make maximum use of gravity, topography is a major factor in evaluating various options for sewage conveyance and treatment. The U.S. Geological Survey 1:24,000 topographic maps show general elevations of Delaware County, mapped as ten foot contours. At this scale, the County appears to slope from its border with



Chester County in the northwest down to the Delaware River along the southeast. The most prominent features are the major creek valleys and the ridges that divide them. These features become important in planning for extension of existing public sewers or construction of new local sewage collection and treatment systems.

### **Geology**

The Pennsylvania Geological Survey report entitled Groundwater Resources of Delaware County, Pennsylvania (1996) notes that Delaware County falls within two primary physiographic provinces. The northern two thirds, which is characterized by rolling terrain, lies within the Piedmont physiographic province. The other third of the County falls within the Atlantic Coastal Plain, which is the relatively flat, narrow band that parallels the Delaware River (see Map 4-1). The Natural Areas Inventory of Delaware County, Pennsylvania (1992) notes that the Piedmont area consists of folded and faulted metamorphic and igneous rocks which include marble, schist, gneiss, quartzite, granite, and serpentinite. The Coastal Plain is characterized by "unconsolidated to poorly consolidated layers of Quaternary-age sand, gravel, and clay."

The Groundwater Resources Report notes that Delaware County has "limited water resources" and that "groundwater occurs mostly in the weathered zone above bedrock and in fractures to depths of about 300 feet below land surface," with the Wissahickon formation being most productive. It states that "none of the geologic formations in Delaware County yield enough water consistently for large public or industrial supplies; however, most wells should produce sufficient quantities for domestic purposes." It also states that water quality is "generally suitable for most uses..."

## **ON-LOT SYSTEM PROBLEM AREAS**

### **Location of Problem Areas**

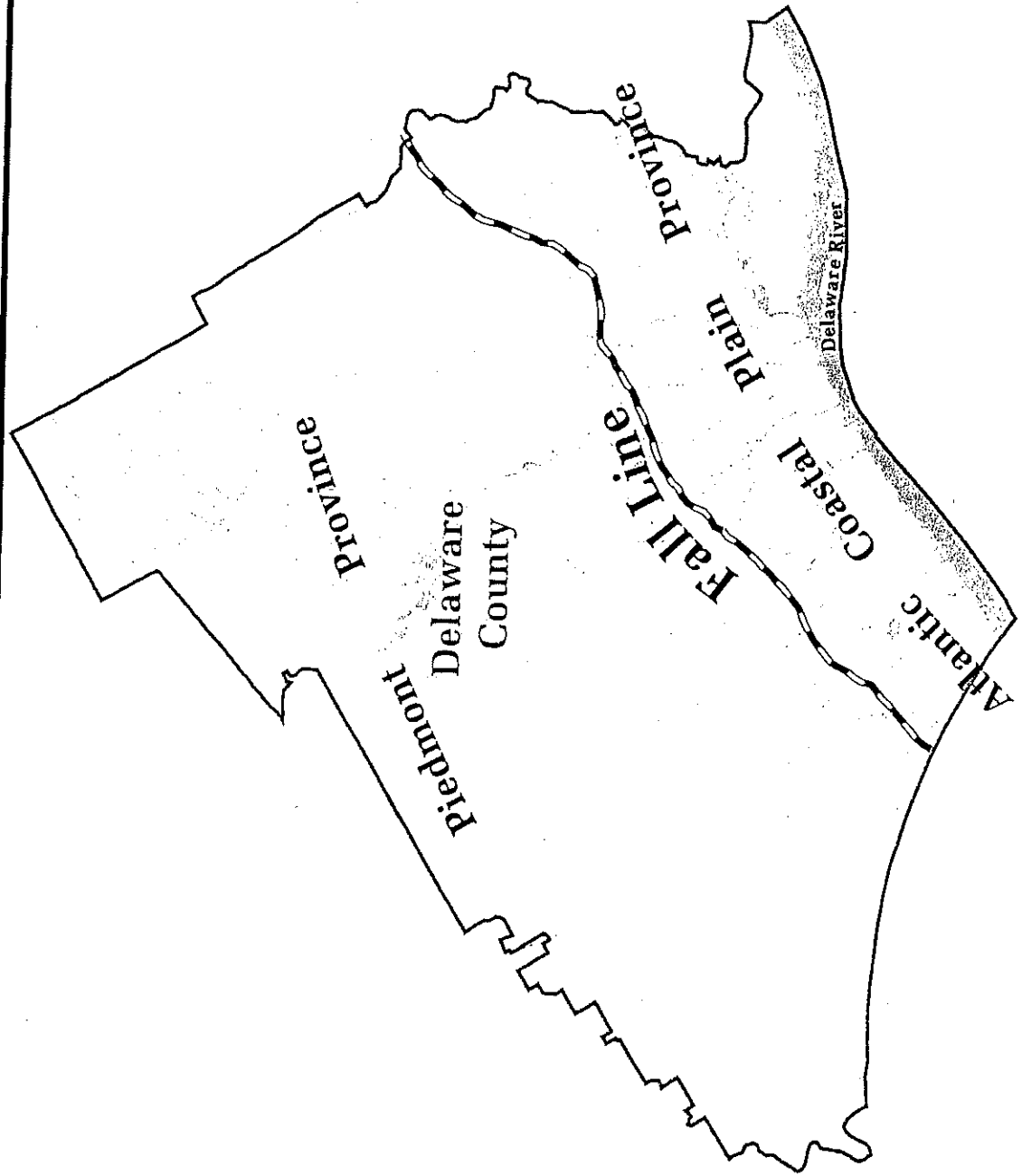
Only one of the four municipalities that indicated it had on-lot sewers noted that it had any areas experiencing on-lot malfunctions. Probable causes for the malfunctions were attributed to a number of factors including poor soils, poor maintenance, and age of systems.

### **Sewage Systems Malfunctioning to Groundwater**

The one municipality that responded to the survey question concerning on-lot malfunctions indicated that these malfunctions may be affecting groundwater due to poor geologic or soil conditions.



# Map 4-1 Geohydrology



0 1 2 Miles

Projection: UTM  
Datum: NAD83  
Units: Meters

Source:  
U.S. Department of  
Commerce, Bureau of  
the Census, Tiger Line  
Files, 2000 - County  
Boundary and Water



## ILLEGAL SEWAGE DISPOSAL SYSTEMS

All twenty-six respondents to the survey indicated that there were no wildcat sewers in their municipalities.







## **CHAPTER 5**

### **PLANNING OBJECTIVES AND NEEDS**

#### **INTRODUCTION**

This update of the Delaware County Sewerage Facilities Plan follows a long history of wastewater facilities planning in Delaware County. Planning efforts have continued since each of the County's 49 municipalities adopted the Delaware County Sewerage Facilities Plan as their Official Act 537 Sewerage Facilities Plan in 1971.

Land use, water supply, and stormwater plans with potential for impacting wastewater planning have also been prepared over the last thirty years, and municipalities have enacted zoning and subdivision/land development ordinances to carry out local planning objectives. Therefore, the purpose of this section is to identify, describe, and compare the planning that has taken place, report progress in implementation, compare various planning efforts to determine consistency or conflict, and define planning needs.

#### **Wastewater Planning Previously Undertaken**

Considerable wastewater planning has taken place since the approval in 1971 of the Delaware County Sewerage Facilities Plan. At the federal level, EPA provided incentives for regional and area-wide planning through the Construction Grants Program (Amendments of 1972, Sections 201 and 208), which was subsequently delegated to the Pennsylvania Department of Environmental Resources (DER), now DEP. In response to Pennsylvania's Clean Streams Law, DER in 1974 began to work on a Water Quality Management Plan for Southeast Pennsylvania (COWAMP). This work was merged with federal planning under Section 208 of the 1972 Amendments, and the COWAMP/208 Plan was published in draft form in 1978 and supplemented in 1979.

Table 5-1 provides a brief history of wastewater planning affecting Delaware County.

#### **Federal Wastewater Planning**

At the federal level, EPA has provided incentives for regional and area-wide planning. The Construction Grants Program (Federal Water Pollution Control Act, P. L. 95-9500, and its implementing regulations) provided funds



**TABLE 5-1**  
**HISTORY OF WASTEWATER PLANNING**  
**IN DELAWARE COUNTY**

**1928**

Delaware County Board of Engineers formed to evaluate the County's sewage facility needs.

**1931**

Board of Engineers' report recommends construction of six sewerage systems: Darby Creek Joint, Muckinipates, Central Delaware County, Eddystone, City of Chester, and Marcus Hook. All recommendations were implemented by 1960.

**1931-1967**

Planning by individual municipalities leads to construction of the Radnor-Haverford-Marple, Tinicum, Media, Rose Valley, Brookhaven, and Southwest Delaware County systems.

**1967**

Passage of Act 537, the Pennsylvania Sewage Facilities Act. Requires all municipalities to prepare a ten-year sewage facilities plan to address their needs. Following a Pennsylvania Department of Health (PDH) recommendation, all 49 municipalities in Delaware County pass resolutions authorizing the Delaware County Planning Commission (DCPC) to prepare a County sewage facilities plan.

**1971 (July)**

Delaware County Sewerage Facilities Plan identifies needs and recommends a regionalized sewer system for as much of the County as possible.

**1971 (October)**

Delaware County Regional Water Quality Control Authority (DELCORA) is created by the Delaware County Commissioners to implement the recommended plan and is given the authority to finance, construct, and operate all interceptor systems, pump stations, and treatment plants in the County except 1) the Upper Darby-Haverford system (which discharges directly to the City of Philadelphia network) and 2) the Southern Delaware County Authority system (which discharges to the New Castle County, Delaware network). Municipal agencies retain control of local



collection systems except for the Chester City and Parkside and Upland collection systems operated by DELCORA.

**1972 (November)**

Delaware County Regional Sewerage Project report by Albright and Friel, division of Betz Environmental Engineers (analysis performed in 1971).

**1972**

Federal Water Pollution Control Act Amendments of 1972. Extensive regulatory and grants program for planning, design, and construction of wastewater control facilities.

**1974**

In response to the Pennsylvania Clean Streams Law, DER begins to develop the Comprehensive Water Quality Management Plan for Southeastern Pennsylvania (COWAMP).

**1975**

Governor designates the Pennsylvania portion of the Philadelphia Metropolitan Statistical Area (MSA) as a 208 study area, making the region eligible for a federal area-wide waste treatment management planning grant. With receipt of federal funds, the COWAMP and 208 programs are merged to become the COWAMP/208 Plan, with a goal of comprehensive evaluation of water quality. Existing plans already being implemented for the Regional Sewerage Project were accepted as part of the COWAMP program.

**1977**

Clean Water Act: 1977 Amendments to the Federal Water Pollution Control Act. Provides additional funding authorization, institutional changes, and a shift in technical emphasis to favor new waste treatment technology and control of toxic pollutants.

**1978**

Draft COWAMP/208 Water Quality Management Plan completed. Suggests alternatives for addressing sewerage needs of the upper Ridley and Crum Creeks watersheds and the Chester Creek watershed, but no single alternative is selected.

**1979**

Supplement No. 1 to COWAMP/208 Water Quality Management Plan for Southeastern Pennsylvania. Contains post-publication additions



and corrections to the COWAMP/208 plan, including several major changes in recommendations for Delaware County.

**1987**

Water Quality Act of 1987: amends Federal Water Pollution Control Act. For Delaware County, some of the more significant provisions include creation of 1) a program providing grants to states for establishing water pollution control revolving funds, and 2) the National Estuary Program, with Delaware Bay given priority consideration.

**1988**

PENNVEST. State legislation creating a revolving fund to provide loans and grants for water and wastewater facilities. Referendum approved to provide funding.

Source: DCPD, 2002



for required area-wide facilities or "201" plans (step 1) prior to funding wastewater facilities design (step 2) and construction (step 3). This program was subsequently delegated to DER. The program, with its related planning requirements, continued through amendments contained in the Clean Water Act (1977) and the Water Quality Act of 1987, although at lower funding levels than in previous years. The 1987 Act cut construction grants funding back even further, but at the same time added a new Section 601, "Grants to States for Establishment of Revolving Funds," which provides for loans to finance facility planning (and design and construction) and limited funds for area-wide planning. Today this program as it has found its way to the state level is known as the Pennsylvania Infrastructure Investment Authority, or PENNVEST.

The plan was intended to serve as a guide to wastewater planning in southeastern Pennsylvania. While the plan was unable to reach consensus on recommended actions for specific geographic areas in Delaware County, other than to recommend additional "201" facilities planning studies, it provides policy guidance. Although the plan recognized that public sewers would continue to be a viable solution for wastewater problems in many areas, its emphasis was also towards alternative "nonsewer" methods of wastewater disposal. Land application and the maintenance and management of on-lot disposal systems were stressed as considerations for future planning.

Section 303 of P.L. 92-500 provided for planning for an even larger area, and the Delaware River Basin Comprehensive Study was partially funded by that program. With the 1987 amendments to the Act, the Delaware River estuary was given special attention, and planning efforts have begun to identify the full spectrum of needs related to this major water resource.

### **State/County Wastewater Planning**

Act 537, the Pennsylvania Sewage Facilities Act, requires municipalities to prepare ten-year sewage facilities plans to address their needs. As recommended by PDH, all 49 municipalities in Delaware County passed resolutions authorizing DCPC to prepare a County sewage facilities plan on their behalf. The resulting Delaware County Sewerage Facilities Plan identified needs and recommended a regionalized sewer system for as much of the County as possible. Table 5-2 lists the plan's major recommendations and their current status. Each of the 49 municipalities adopted this plan (by resolution) as their Official Sewage Facilities Plan.

### **Delaware County Regional Sewerage Project**

As a follow-up to the 1971 Delaware County Sewerage Facilities Plan, detailed engineering studies were undertaken for the County by Albright and



TABLE 5-2

1971 DELAWARE COUNTY  
SEWERAGE FACILITIES PLAN  
(ACT 537)

The Delaware County Sewerage Facilities Plan, prepared in 1971 by DCPC on behalf of all 49 municipalities to satisfy sewage facilities planning requirements under Act 537, contained the following recommendations:

1. **Acceptance of the Plan.** All municipalities in Delaware County should enact formal resolutions adopting this plan in accordance with the Pennsylvania Sewage Facilities Act. **Status:** Done.
2. **Municipal Sewerage Plans.** Each of the municipalities should prepare a sewerage plan, including proposed expansion and/or modifications to sewage collection facilities. These municipal plans should be in agreement with this Sewerage Facilities Plan. **Status:** See review of Municipal Wastewater Planning for individual municipalities.
3. **On-Lot Disposal Systems.** In order to alleviate or forestall any health problems caused by malfunctioning individual on-lot disposal systems, all municipalities should adopt ordinances governing these systems, especially in areas having hazardous soil conditions. The ordinances should also cover the design, construction, and operation of on-lot systems, as set forth in Act 537. **Status:** DEP currently has standards and model ordinances available for use.
4. **Modifications to Sewerage Facilities Plan.** The Delaware County Sewerage Facilities Plan should be routinely updated and/or modified as necessary, as development patterns warrant. In addition, the plan should be re-evaluated every five years or more frequently if needed. **Status:** In municipalities with unsewered areas, an SEO routinely reviews planning modules for proposed land development for consistency with the local Act 537 plan, and DCPD has an opportunity to comment before requests for plan revisions are approved by DEP. Although most of the western study area municipalities have completely updated their Act 537 plans, almost none of the eastern study area municipalities have. This is the first Countywide update effort since 1971.
5. **Regional Sewerage Project.** Complete the Delaware County Regional Sewerage Project. **Status:** The study was completed in 1972. Most, but not all, of the study's recommendations have been implemented.



6. **Radnor-Haverford-Marple Authority.** Treatment facility to be phased out. Plant to operate until adequate treatment is available downstream. **Status:** Done. RHM now operates an interceptor which flows into the DCPS for conveyance via DELCORA's interceptor to PSWPCP.
7. **Upper Darby-Haverford (Philadelphia S.W.).** Continue to discharge to the Philadelphia system. **Status:** Flows still go to Philadelphia.
8. **Darby Creek Joint Authority.** Continue present operation. Further analysis and evaluation during the Delaware County Regional Sewerage Project should determine the best mixture between expansion and/or bypass of flows to the Philadelphia Southwest treatment facility. **Status:** Following an interim solution of bypassing some flow to the Philadelphia Southwest plant, DCJA ceased treatment operations. DCJA has operated as a collection authority only since the 1976 expansion of the Philadelphia plant. In 1980, DELCORA constructed the DCPS to pump flows to PSWPCP.
9. **Muckinipates Authority.** Upgrade treatment to achieve DRBC allocation and continue to operate. **Status:** This was not done. The plant was phased out, and the Authority operates for the purpose of conveyance only. In 1980, DELCORA constructed the MPS to pump flows to PSWPCP.
10. **Tinicum.** Upgrade treatment to achieve DRBC allocation and continue to operate. **Status:** The plant is still operating.
11. **Central Delaware County Authority.** Continue present operation. The Regional Sewerage Project will determine whether plant expansion or diversion of the area's flow to a possible regional treatment plant is the best alternative. **Status:** The CDCA treatment plant was phased out in 1980 and replaced by a DELCORA pump station/force main to PSWPCP. Construction is now beginning on a project to divert up to 12 MGD to DELCORA's WRTP.
12. **Eddystone Borough Treatment Plant.** Phase out and construct a connection to the City of Chester sewer system. **Status:** Done.
13. **Media Borough Treatment Plant.** Continue to operate as is. (Shown on map to be phased out by 1990.) **Status:** Still operating. Plant has been upgraded to permit increased flows.



14. **Brookhaven Borough Treatment Plant.** Phase out and construct a connection to the SWDCMA sewer system. **Status:** Still operating. Recently underwent upgrade.
15. **Rose Valley Treatment Plant.** Continue to operate until an interceptor is built along Ridley Creek (1975), then phase out plant. **Status:** During facility planning for the Ridley Creek Interceptor, Rose Valley indicated that it preferred to continue to operate its plant. It is still operating.
16. **Southwest Delaware County Authority Treatment Plant.** Expand the plant to 4 MGD and upgrade treatment efficiency to meet proposed DEP effluent standards. **Status:** Plant has been expanded.
17. **Chester City Treatment Plant.** Upgrade and expand to serve as a regional treatment plant for the Chester and Ridley Creek watersheds. **Status:** This is now the DELCORA WRTP. It has been expanded to 44 MGD and upgraded to secondary treatment.
18. **Marcus Hook Borough Treatment Plant.** Phase out and construct a connection to the City of Chester sewer system. **Status:** Done.
19. **Chadds Ford Area.** Construct an interim sewage treatment plant. Phase out the plant when the interceptor is extended up the Brandywine Creek watershed (1985). **Status:** Studies (1973 and 1976) proposed a 0.25 to 0.30 MGD plant in Chadds Ford, with an interceptor up Harvey Run to serve the Route 1 – Painters Crossroads area, but funds were not available. Instead, a number of small treatment plants have accompanied development in the Painters Crossroads and Chadds Ford area.
20. **Southern Delaware County Authority.** Continue to discharge to the New Castle County sewage system. Expand the service area to include Bethel Township. Modify the agreement with New Castle County to allow increased discharge up to 4.0 MGD. **Status:** Service area has been expanded in Bethel Township (in addition to previous small area of Bethel and all of Upper Chichester). An agreement with New Castle County now allows 3.0 MGD. The Authority sought an additional 1.0 MGD for Bethel. A recent agreement between SDCA and DELCORA will divert between 1.6 and 3.2 MGD to the WRTP in the City of Chester.

Source: DCPD, 2002



Friel, a division of Betz Environmental Engineers, resulting in the 1972 report of the Delaware County Regional Sewerage Project. The report divides the County into two service areas: the predominantly sewered area east of Crum Creek and the western area that includes the Chester and Ridley Creek watersheds and the upper Crum Creek watershed above Geist (Springton) Reservoir. While the lower portions of the watersheds were largely sewered and included major wastewater producing industries, the upper portions were largely unsewered, with high growth potential.

The plan recommended conveying wastewater from the RHM, DCJA, MA, Tinicum, and CDCA systems to an expanded and upgraded PSWPCP for treatment. For the remaining portions of the County, it recommended conveying all wastewater to an upgraded and expanded plant at the existing Chester City plant site for treatment and gradually phasing out all other treatment facilities, including nineteen institutional plants. Implementation was to occur by 2020 in four stages. It recommended creation of a County-level sewer authority in Phase I to implement the recommended plan and assume responsibility for its continued operation. The resulting County-level authority was DELCORA. Following approval by the Delaware County Commissioners at a public hearing, DER accepted this report as a guide to the design of wastewater facilities in the study area. There is no record that individual municipalities adopted it as a revision to their Official Sewage Facilities Plan under Act 537.

Since that time, most of the municipalities located in western portions of the County have prepared, adopted, and received DER/DEP approval for complete updates or major revisions to their Act 537 plans. With the exception of a few planning efforts involving I&I studies or major diversions on the part of DELCORA, the municipalities in the eastern portion of the County continue to rely on sewage facilities plans prepared in the 1970s.

### **Municipal Wastewater Planning**

Since the preparation of the 1971 Delaware County Sewerage Facilities Plan, numerous sewerage feasibility studies and facilities plans have been prepared. The recommendations of these studies and plans and the responses of various local regional, state, and even federal agencies to those recommendations have shaped the specific components of the County's sewage facilities network over the past thirty years.

The following section attempts to review local planning efforts on the part of eastern study area municipalities in the context of County and regional plans and in accordance with state and federal regulatory requirements. Similar review as well as an analysis of sewage facilities constructed to date for each of the western Delaware County municipalities



will be prepared separately for the western study area plan. In addition, the Crum Creek watershed is treated as a special case since both the western and eastern halves of the County can be impacted by what takes place here. It should be noted that the ability to sewer growth areas in the upper watershed is linked to the I&I problems that limit capacity in the lower watershed conveyance system.

## **WASTEWATER PLANNING IN THE EASTERN STUDY AREA**

### **DELCORA Eastern and Western Service Areas** **(including areas that go to the City of Philadelphia)**

Over the past three decades, eastern Delaware County has been provided with safe reliable sewer service as part of the DELCORA regional system. This system, which includes municipalities served by the DCJA/RHM, CDCA, and MA, provides conveyance through its interceptors to the PSWPCP for treatment. Portions of several municipalities which lie east of the DCJA service area flow directly to the City of Philadelphia. Tinicum Township continues to operate its own sewage treatment plant.

Since almost all of the eastern municipalities (with the exception of Tinicum Township and those flowing directly to the City of Philadelphia) are part of a regional sewer network, none of the municipalities that fall within the DELCORA system have undertaken complete Act 537 revisions since the 1971 plan was adopted. Several municipalities (i.e., Springfield Township and Swarthmore Borough) as well as some of the authorities have conducted I&I studies, but these studies did not constitute a complete update of municipal Act 537 plans. However, more broad-based regional planning has continued to be conducted by DELCORA on behalf of the municipalities within its system. The following is a list of some of the major Act 537 planning activities undertaken by DELCORA on behalf of the municipalities in its Eastern Service Area which flow to the City of Philadelphia as well as those which flow directly to the WRTP located in the City of Chester.

The following is a list of the planning undertaken by DELCORA over the past several years.

- Western Regional Planning Analysis, December 21, 1999.
- Act 537 Sewage Facilities Plan Partial Update; Facility Alternatives for the Treatment and Disposal of Wastewater from the Central Delaware County Authority Service Area, February 1999.
- Eddystone plant/PS.



- Delaware County Regional Water Quality Control Authority (DELCORA) Long-Term CSO Control Plan, City of Chester Combined Sewer System, April 1999. Approved by DEP with the issuance of DELCORA's NPDES Permit No. PA 0027103 of May 22, 2000.

### **Tinicum Township**

With the exception of an I&I study dated July 1989, DCPD does not have a record of any Act 537 plan updates for the area served by the Tinicum Township Sewage Treatment Plant.

### **City of Philadelphia**

The City of Philadelphia prepared an Act 537 Plan update in 1993. Areas within Delaware County are addressed in that study.

## **LAND USE PLANNING AND REGULATION**

To ensure proper development and alleviate growth pressures, municipalities are "enabled" to adopt planning documents pursuant to the Pennsylvania Municipalities Planning Code, Act 247 of 1968, as amended. These planning documents include comprehensive land use plans, zoning ordinances, and subdivision/land development regulations.

One of the main reasons for examining these documents while preparing the sewage facilities plan is to establish the interrelationships between the need for sewers and the existing and proposed land uses within each municipality. Conversely, one might expect that many of the proposed land uses within a municipality would be predicated upon the availability of sewage collection and treatment facilities. While this was once the case in remote areas, it now appears that lack of existing public infrastructure can be overcome through both innovative technology as well as private funding for new sewage facilities.

As previously discussed, Act 537 requires municipalities to adopt sewage facilities plans for the provision of adequate sewage facilities as well as to protect water supplies. These plans should allow for a variety of treatment techniques based upon their availability, efficiency, and cost. Therefore, the task in this section is to analyze the correlation between documents adopted under Act 247 and Act 537.

### **Comprehensive Planning**

#### **County Planning**



Act 247 requires that all counties prepare and adopt a comprehensive plan within three years of the effective date of the Act and that adopted municipal comprehensive plans be generally consistent with an adopted county plan. The existing unofficial 1975 County comprehensive plan, Delaware County Land Use Plan 2000 (January 1976) was largely a compilation of municipal comprehensive plans, and is, therefore, consistent with those plans. Only the policies section of the Open Space, Parks, and Recreation Study (1978) which was developed pursuant to the plan, was ever officially adopted by the County. DCPD is currently in the process of preparing a County comprehensive plan that will meet all state requirements and provide the necessary guidance to both County agencies and municipalities regarding future growth, development, and redevelopment in the County.

### **Municipal Planning**

All of the western Delaware County municipalities have an adopted comprehensive plan. The land uses and densities recommended in these plans were based, to a great extent, on soil suitability for on-lot systems and the availability of public sewers. Plans prepared in the early 1970s tend to be consistent with the County's 1971 Act 537 plan, while some of the later plans either advocate additional sewerage studies or refer to studies already in progress.

All of the eastern Delaware County municipalities have adopted comprehensive plans. Several have recently undergone or are undergoing revision. Availability of sewer service, except to the extent that there is adequate capacity in the existing conveyance systems, is not a significant factor used to determine growth or future zoning.

### **Municipal Zoning**

In developing areas, municipal zoning has a great impact on density, ultimate build-out, and need for sewers to serve development that occurs in accordance with the zoning. Needed facilities to serve the various types of development depend on a number of factors, only one of which is zoning. Some of these factors have been discussed in Chapter 4.

In developed areas such as most of eastern Delaware County, zoning is not a driving force in sewage facilities decision-making. With the exception of a few areas at the top of the Darby and Crum Creeks watersheds, most of eastern Delaware County is already developed and publicly sewered. Therefore, any infill, redevelopment, or even new development in the eastern



municipalities is within a relatively short distance of a public sewer system, and is, therefore, expected to connect to the nearest system.

## **PLANNING DOCUMENTS IN THE EASTERN STUDY AREA**

### **General Discussion of Planning Documents in the Eastern Study Area**

As noted previously, with the exception of a few areas at the top of the Darby and Crum Creeks watersheds, most of eastern Delaware County is fully developed. Any new development expected to occur could be considered infill or redevelopment. DCPD records indicate that all of the municipalities in the eastern portion of the County have comprehensive plans; however, many of them date back as early as the 1970s. Every municipality has its own zoning ordinance; these ordinances range in date from 1971 to 2001.

Generally speaking, as compared to portions of western Delaware County, lot sizes are very small. The largest lot size in many of the small boroughs ranges from 5,000-10,000 sq. ft., with many of the high density lot sizes going as low as 1,500-1,800 sq. ft. for apartments and townhouses. The few exceptions to the small lot sizes are found in Haverford, Marple, and Radnor Townships (with low-density lot sizes ranging from two acre agricultural zoning in Radnor to one acre zoning in Haverford). It just so happens that these are the municipalities most likely to also have any remaining large tracts of land available for development. They are also believed (i.e., Marple) to have significant areas still utilizing individual on-lot sewer systems.

### **Details of Individual Municipal Planning Documents in the East**

The following is a brief description of the zoning/build-out potential as well as the sewage facility-related zoning provisions of the municipalities noted above.

#### **Haverford Township**

Haverford Township's zoning ordinance allows for a number of land uses including residential, commercial, office, light industrial, institutional, and open space. Residential lot sizes (which are the simplest measure of land density) vary from one acre (43,560 sq. ft.) to as small as 3,000 sq. ft. for single-family semi-detached and two-family detached homes. Density can be significantly higher in the medium and high-rise apartment district.

The Township's subdivision ordinance requires that "whenever practicable, sanitary sewers [be] installed and connected to the Township



sanitary sewer system." Where sanitary sewers are not available, the Township requires that the necessary easements across other properties be provided for the connection of sewers in the future.

### **Marple Township**

Marple Township's zoning code allows for a variety of land uses. The largest lots are required in the R-A Residential zoning district (min. 80,000 sq. ft.). The smallest minimum requirement for lots is in the RHD Residential zoning district (up to 18 units per developable acre). The Township has cluster development overlay provisions that allow for a reduction in lot size in exchange for the provision of open space.

The zoning code requires a minimum lot size of 40,000 sq. ft. and a minimum lot width of 125 feet for single-family detached dwellings that have on-lot systems for both water and sewer. If dwellings have either public water or sewer, the minimum lot size is 12,000 sq. ft. with a lot width of 75 feet. The zoning code requires all development in the Township to "be served by water facilities and sanitary sewer facilities acceptable to the Township Commissioners..."

### **Radnor Township**

Radnor Township's zoning ordinance also allows for a wide range of zoning districts and associated residential and nonresidential densities. Worst case (maximum permitted) residential zoning densities range from 65,340 sq. ft. in the R-1 district to the equivalent of 7,500 sq. ft. in the PA Apartment district. General standards in the Township's zoning code state that when both public sewer and water are unavailable, the minimum lot size is 60,000 sq. ft. with a minimum width at the building line of 150 feet. When either public sewer or water is unavailable, the minimum lot size is 43,560 sq. ft. with a minimum lot width of 120 feet.

The Township's subdivision ordinance requires "whenever practical...that sanitary sewers be installed and connected to an appropriate public sewer system." Where sewage facilities are planned for the next ten years but are not currently available, laterals with capped sewers are required for new developments. Minimum lot sizes for lots with on-lot water or on-lot sewer are required to be one acre (43,560 sq. ft.). When a lot is to be served by on-lot water and on-lot sewer, the minimum lot size is 60,000 sq. ft.

### **Details of Individual Municipal Planning Documents in the Upper Crum Creek Watershed (Western "Fringe" Area)**



The following is a brief description of the zoning/build-out potential as well as the sewage facility-related zoning provisions of the municipalities within the western "fringe" areas that have the potential to be served by the existing eastern sewage conveyance and treatment network.

### **Edgmont Township**

Edgmont Township's zoning ordinance permits a reduction in lot size under its open space option based, in part, on the availability of public water and/or sewer. The Township's subdivision ordinance requires "...dwellings and/or lots within a subdivision or land development [to be] connected with a public sanitary sewer system where accessible and available." Where sewage facilities are planned but not yet available, the developer must install facilities including laterals, force mains, capped sewers, etc. to each lot. When sanitary sewers are not to be constructed, on-lot sewage disposal facilities are permitted, provided that they are installed in accordance with state and local regulations.

### **Newtown Township**

Newtown Township's zoning ordinance allows for minimum lot sizes that range from 60,000 sq. ft. in the R-1 Residence district to 12 units per acre in the A-O Apartment district. Lots without public water are required to be a minimum of 12,000 sq. ft. There are no requirements in the zoning ordinance that address minimum lot sizes for developments that are not served by public sewer.

Newtown Township's subdivision ordinance requires each property to be connected "...to a public sewer system if accessible by gravity." In areas where sewers are not currently available, but are probable within ten years, new developments must include capped sewers. On-lot sewer systems are permitted in conformance with state and Township regulations where they can be accommodated safely. The ordinance includes a general statement that the proposed method of sewage disposal shall be in accordance with the Township's Act 537 plan.

### **Upper Providence Township**

Minimum residential lot sizes specified in Upper Providence Township's zoning ordinance range from 43,560 sq. ft. in the R-1 Residence district to 5,000 sq. ft. for single-family residences and 2,000 sq. ft. for apartments in the R-6 Residence district. Lot sizes are not predicated on the availability of public water or sewer.



Upper Providence Township's subdivision ordinance requires each property to be "connected to a public sewer system, if accessible." When sewers are not available but are planned for extension, the developer is required to install capped sewer laterals.

## **EASTERN DELAWARE COUNTY SEWAGE FACILITY PLANNING NEEDS**

As noted in Chapter 2, Table 2-3, eastern Delaware County municipalities are forecasted to have an overall population decrease of 9.2% between 1990 and 2025. Most of these municipalities are forecasted to lose much more than 10% of their population during this period. Only three municipalities, Morton Borough and Nether Providence and Radnor Townships, are forecasted to increase in population. In the case of Radnor Township, the increase is only projected to be 6.7%. With the exception of Radnor Township, most development in the study area is anticipated to be infill or redevelopment. Population increases/decreases associated with this type of development are nearly impossible to quantify. Therefore, in light of forecasted population decreases in almost all of the study area municipalities, it is reasonable to assume that any isolated increases in sewage flows from scattered infill and redevelopment activity would not significantly increase the overall need for additional sewer capacity.

As noted previously, there is an existing sewer network in place that is able to handle flows from new development within the eastern study area. No new sewage facilities needs based on zoning were identified in this plan. There are several areas in the northern reaches of the study area as well as in the developing northwestern "fringe" that could be served by the existing sewer network. However, in order to comfortably handle additional flows from these areas, correction of I&I problems will be necessary. Therefore, the greatest need in this study area is additional capacity that can, in part, be obtained through removal of excess water in the existing sewer systems.



## CHAPTER 6

### PLANNING AND FACILITIES ALTERNATIVES, EVALUATIONS, AND RECOMMENDATIONS

#### INTRODUCTION

A large body of information concerning existing public and private sewage facilities, sewage infrastructure needs, and planning efforts to date has been provided in previous sections of this document. The purpose of this chapter is to utilize the information gathered in the development and evaluation of alternatives for improvements that can be made to the existing sewage facilities collection, conveyance, and treatment system serving eastern Delaware County.

#### SEWAGE TREATMENT ALTERNATIVES ANALYSIS FOR EASTERN DELAWARE COUNTY

##### Results of the Municipal and Conveyance Authority Infiltration and Inflow Studies

As described in greater detail in Chapter 3, the I&I Summary Report concluded the following:

The respective individual municipal and authority studies show that a significant I&I problem exists in DELCORA's Eastern Service Area. Reduction of this I&I will provide a number of benefits to DELCORA, the authorities, and the individual municipalities. They include:

- Increased sewer infrastructure capacity for other uses.
- Reduced treatment and O&M costs associated with disposal.
- Reduction or elimination of potential public health hazards resulting from sewage overflows in various problem areas with overtaxed facilities.

Recommended programmatic corrective actions noted in the study include:

- Regular sewer cleaning.
- Implementation of an I&I monitoring program.



- Sewage facilities documentation.
- Implementation of a sewage facility management system.

A summary of observed problems and a corrective action plan specific to each municipality is provided in Section 2 of the I&I Summary Report. Section 3 of the report offers similar information for the authorities. The most notable analysis performed for the I&I Summary Report relates to the prioritization of corrective actions based on a number of factors, in particular, costs.

Although not studied, it is assumed that similar deficiencies and rates of occurrence exist in portions of eastern Delaware County that are outside of DELCORA's Eastern Service Area. It is also assumed that the corrective actions listed below will serve this outside area as well.

### **Priority Action Analysis Based on Cost**

Based on affordability of recommended corrective actions, the Summary Report prioritized corrections in order of cost-effectiveness:

1. Manhole inserts
2. Public education/information
3. Roof leader/sump pump disconnects
4. Manhole frame repairs
5. Slip lining of stream crossings
6. Chemical grouting
7. Manhole repairs
8. Slip lining of other segments
9. Inlet disconnects
10. Sewer replacement

The cost effectiveness of implementation of the specific corrective action plans identified in the I&I Summary Report as well as in the individual municipal I&I reports is analyzed in the Economic Evaluation Section of this chapter.

## **SEWAGE MANAGEMENT PROGRAM ALTERNATIVES FOR EASTERN DELAWARE COUNTY**

### **DELCORA Eastern Service Area**

As noted above, the results of the I&I studies indicate that all of the municipalities studied were experiencing problems with I&I. Some



municipalities were clearly experiencing more problems than others. The conveyance authorities were also found to have a number of interceptors with capacity limited segments, indicating problems in their systems as well. The following is a brief analysis of the various options facing the municipalities and the conveyance authorities with regard to methods for dealing with the existing problems.

## **Alternative #1 -- Do Nothing**

The first option for dealing with known I&I problems is to ignore the fact that the sewer lines are taking on water and/or potentially leaking to groundwater as well. Doing nothing means that municipalities and conveyance authorities will continue to collect and pay to convey and treat excess water in their sewer systems. The following is an analysis of the various advantages and disadvantages associated with the "do nothing" alternative.

### **Advantages**

There are several advantages to doing nothing to repair the existing problems. The first is that municipal officials and sewer authority boards will not be faced with the need to make any difficult decisions regarding when and how repairs will be made and paid for. Such decisions are often hard and sometimes risky for local decision-makers, as the "right thing to do" may be considered unpopular with tax or ratepayers. Therefore, if the problem can be ignored, then no (possibly unpopular) decisions need to be made regarding what to do about it. Unfortunately, problems don't go away, and lack of decision-making today calls for even tougher decision-making tomorrow.

Other reasons to do nothing include the perception that the decision-makers aren't spending any of the taxpayers' money on what might be viewed as needless repairs to something no one sees anyway. However, it should be noted that they will still need to undertake piecemeal emergency repairs as portions of the systems collapse. A related advantage to doing nothing is the perpetuation of the perception that there is no problem. In the eyes of anyone who doesn't know any better, "there is no problem." However, this problem still exists and will continue to get worse until corrected or the system fails.

### **Disadvantages**

There are several disadvantages to doing nothing to fix the sewer systems. The first is the fact that large capital costs may need to be incurred later because what isn't repaired today will still need to be corrected



tomorrow. Piecemeal emergency corrections always cost more than well planned comprehensive corrections. In the meantime, the costs associated with piecemeal repairs as well as the ongoing costs for treatment of excess water continue to increase. If corrections are not made, the aging systems will eventually collapse. Furthermore, upcoming federal requirements will require municipalities that own and operate small collection and conveyance systems to undertake management programs for their sewer systems. These regulations will ultimately require repairs to be made anyway.

Furthermore, as cracked and broken sewer lines continue to leak, the potential for groundwater contamination increases. Sewer bypasses to the nearest stream resulting from the need to "release" excess flows results in additional pollution being placed into the environment. Every time this pollution is released to the environment, the health and welfare of the public is placed at risk, thus increasing municipal exposure to third party lawsuits.

## **Alternative #2 -- Implement Corrective Action Plan**

### **Advantages**

One of the foremost advantages to implementing a corrective action plan is that the environment is protected from leakage into the groundwater and from the potential for contamination of the waterways through pump station overflows. Not only is the environment protected, but the overall health and welfare of the public is protected.

Other advantages associated with correction of identified problems include extended service life of the system, lower capital costs over building a new system, and reduced annual conveyance costs, including increased return on investment made to repair the system. By making necessary repairs as they are needed rather than when conditions deteriorate so badly that the system collapses, service to existing customers is guaranteed, and capacity for additional connections to the system in the future is provided.

### **Disadvantages**

The disadvantages to repairing the system include moderate capital costs, some public resistance to the expenditures to repair the system, and temporary public inconvenience while repairs are underway. When compared to the high monetary and public health costs and inconvenience associated with failure of the systems, repair costs seem reasonable by comparison.

### **Alternative #3 -- Construct Additional Capacity**

This alternative involves construction of additional conveyance and treatment capacity to handle excess water that does not belong in the system anyway. Components of this alternative include expensive construction of parallel conveyance lines and upgrading of treatment plants to handle the flows. Existing problems would remain, and the remaining components of the system would continue to age.

#### **Advantages**

There are a number of advantages to constructing additional capacity. Initially, the construction of additional facilities would improve some of the conditions that contribute to environmental degradation, thus improving public health and welfare. Newer system components require less repair and maintenance. They also could be sized to eliminate current capacity limitations and provide additional capacity to serve new development.

#### **Disadvantages**

The disadvantages to constructing additional capacity include a very high capital cost. With the high cost comes major public resistance to the expenditure and major inconvenience as streets and stream corridors are essentially torn up to either replace or parallel the existing system. Annual O&M will increase as more conveyance and treatment facilities are required. Also, unless all of the lines are replaced with new ones (which would be both cost prohibitive and physically impossible), the old problems and issues associated with the existing aging and leaking sewer lines have not been eliminated.

#### **Preferred Alternative**

Obviously, based on the previous discussion, the preferred alternative is #2 -- Implement the Corrective Action Plans for each of the municipalities and the various conveyance authorities. This appears to be the most economical option for all concerned.

#### **DELCORA Western Service Area**

Components of the sewage facilities serving the waterfront communities are some of the oldest in the County. Most of these areas feed directly to the DELCORA conveyance system that transports wastes to the W RTP located in the City of Chester. Although detailed I&I studies were not performed for the communities in this service area, DELCORA, through its



programs implementing federal water pollution control regulations, is regularly assessing the condition of and making repairs to its system in accordance with environmental requirements.

As discussed previously, the collection system within the City of Chester is a combined sewage and stormwater system. As part of its NPDES permit for the WRTP, DELCORA was tasked with developing a CSO program. The fundamental purpose of DELCORA's CSO program is to minimize the impacts of CSOs upon the quality of the receiving surface waters by developing a long-term strategy that is both technically viable and financially feasible. To meet this objective, DELCORA has developed a Long-Term CSO Control Plan that meets the regulatory guidelines established by EPA and DEP as well as DELCORA's financial obligations to its customers in Delaware County.

The plan considered a number of alternatives to minimize the impacts of the CSOs including:

1. Source Control Alternatives
  - Street sweeping
  - Inlet cleaning
  - Inlet replacement
2. Collection System Control Alternatives
  - Sewer cleaning
  - Regulator replacement
  - Sewer separation
  - Consolidation/elimination of regulators
  - Outfall interceptor along Ridley Creek
  - Maximizing capacity of the existing system
  - Floatables containment
  - Outfall containment booms
  - In-line netting
  - End-of-pipe netting
  - Skimming of public areas
3. Storage Control Alternatives
  - In-line measures
  - Off-line near surface structures
  - Deep tunnel storage
4. Remote Treatment Control Alternatives
  - Coarse screening
  - Off-line near surface sedimentation structures

- Swirl/vortex separators
- Disinfection

The alternatives selected for implementation included:

- Regulator and tide gate monitoring
- Regulator replacement
- Sewer separation
- Inlet replacement
- Modified sewer cleaning program
- Ongoing monitoring of program impacts and modifications to water quality standards
- Public information/education program

DELCORA's Long-Term CSO Control Plan is intended to be a dynamic or evolving document. Therefore, it is important to refer to the source document for further details on the current version of the plan.

### **Municipalities Served by the City of Philadelphia**

Haverford Township and Millbourne, East Lansdowne, and Yeadon Boroughs currently have agreements with Upper Darby Township to convey sewage flows through the Township directly into the City of Philadelphia sanitary sewer system. The only identified alternative to this system of conveyance is to construct a 50 MGD plant at the southern end of Darby Creek with discharge to the Delaware River. This could prove very costly at approximately \$80 million.

It would appear that the continuation of the current conveyance and treatment method would be the most viable alternative for these municipalities. However, in order to assure continued capacity, control costs for treatment, and protect public health, it is recommended that I&I studies similar to those performed for the remainder of the study area be performed in a timely fashion.

### **Tinicum Township**

Tinicum Township is successfully operating its own wastewater treatment plant. Alternatives to continued operation of this plant include connection to the PSWPCP via the Philadelphia International Airport area or participation in the construction of a new plant on Darby Creek as noted above. Tinicum Township is currently in the process of undertaking an approximately \$1.5 million plant improvement; therefore, based on



information provided by the Township, upgrade/improvement of the existing plant to meet the needs of Township residents is the preferred alternative.

## **LAND USE REGULATION OPTIONS FOR EASTERN DELAWARE COUNTY**

Most of the eastern study area is built out. Provided that the needed repairs are made to the existing system, older municipal collection and regional conveyance lines which were sized to accommodate flows from a much larger population should be adequate to serve the needs of eastern Delaware County. The existing sewer network is extensive, and with the exception of more remote or undeveloped portions of Radnor, Haverford, and Marple Townships, sewers are currently in place and can serve any infill or new development anticipated in the future.

Radnor Township's subdivision/land development ordinance requires new development to connect to public sewers wherever practical, and where sewers are not currently available but are planned, to provide capped sewers and necessary easements to accommodate sewers. Where public sewers are unavailable, the minimum lot size for on-lot systems is 43,560 sq. ft. (one acre); if on-lot water is also to be provided, the minimum lot size is 60,000 sq. ft.

Haverford Township requires that new development connect to public sewers wherever practicable. As with Radnor Township, if sewers are currently unavailable, capped sewers and easements must be provided. The ordinance notes that the Board of Commissioners may waive the public sewer requirements for lots over one acre if treatment technology that involves groundwater recharge is utilized.

Marple Township's subdivision ordinance does not include any specific requirements regarding connection to public sewers. However, it does designate minimum lot sizes for various combinations of public water and sewer service (e.g., on-lot water and sewer - 40,000 sq. ft., on-lot water or on-lot sewer - 12,000 sq. ft.). The Township's zoning ordinance only requires residential lots to be "...served by water facilities and sanitary sewer facilities acceptable to the Township Commissioners..." and commercial and industrial development to be "...served by central water facilities and central sanitary sewer facilities acceptable to the Board of Commissioners..." Provided that the Township does not have any other regulations for on-lot systems or regulations addressing connection to public sewers or requirements for capped sewers, it should consider developing some.

Generally speaking, the sewage facility requirements in the "fringe areas" of Upper Providence, Edgmont, and Newtown Townships, which could

possibly be served by the CDCA system, require properties to be connected to a public sewer system where accessible and/or that capped sewers be provided until sewers become available. Lots that cannot be connected to public or community sewage disposal systems are to be served by on-lot systems.

In the developing portions of the eastern study area as mentioned above, sewer extension to serve additional connections should be possible, provided that the issues associated with I&I are addressed. Therefore, there appear to be no significant sewer-related land use issues or land use options that need to be addressed in this plan. Within the "fringe" area, more detailed analysis is needed as part of the western plan of study before recommending any modifications to local ordinances or land use plans.

## **PROGRAM EVALUATION FOR EASTERN DELAWARE COUNTY**

Table 6-1 below indicates the results of a winter 2000 DCPD survey regarding municipal management of public sewers. A copy of this survey can be found in Appendix B. Although a 100% response was not received, the conclusions of the survey appear to be that all of the municipalities responding had an ordinance requiring drains and sump pumps to be disconnected. This is consistent with DELCORA and respective agreements with the major conveyance authorities prohibiting such connections. However, less than half of the municipalities responding to the survey noted that they had active inspection programs to locate violations. Interest in development of a program for inspections was mixed.

Municipalities should consider working with DELCORA and the County to develop mechanisms for municipalities to regulate and inspect municipal sewers. By doing so, municipalities will be in a better position with regard to upcoming federal collection system management requirements (see Capacity, Management, Operation, and Maintenance (CMOM) section below).

## **ECONOMIC EVALUATION FOR EASTERN DELAWARE COUNTY**

### **Recommendations of the Infiltration and Inflow Study Summary**

The cost estimate to install parallel interceptors to relieve current and projected surcharging of existing interceptors was based on the assumption that the ultimate capacity required of the interceptors for the eastern service area would increase by 25% to include I&I and infill development. This projected flow was compared to the capacity of the interceptors (Table 3-4 of the Sewage Facilities Engineering Analysis, 2000), and approximately 13,500 feet of parallel interceptor (ranging in size from 30 to 54 inches in diameter) is needed to accommodate the flow. (Note that the existing interceptor



TABLE 6-1

## PUBLIC SEWER SURVEY RESULTS

	Public Sewer Survey Information	2a Inspection Program*	2b Interest*	3 Wildcat	4a Billing Method	4b How Billed	5 \$
	1 Prohibits Drains/Sumps						
Aldan Borough	Yes	Yes	n/a	No	Separate bill	Flat fee	\$149.42/yr
Chester City	plumb code/state law	No	No	No	Separate bill	Water meter	\$150/yr
Chester Township	plumb code/state law	No	No	No	Separate bill	Water meter	\$300/yr
Clifton Heights Borough							
Collingdale Borough	Yes	Yes	n/a	No	Separate bill	Water meter	\$200/yr
Colwyn Borough							
Darby Borough							
Darby Township	plumb code/state law	No	Maybe	No	Separate bill	Water meter	\$150/yr
E. Lansdowne Borough	Yes	No	Yes	No	Tax bill	Flat fee	\$105/yr
Eddystone Borough	plumb code/state law	Yes-No	n/a-no	No	Separate bill	Tax bill	150/yr
Folcroft Borough	plumb code/state law	No	Maybe	No	Separate bill	Water meter	\$150/yr
Glenolden Borough	plumb code/state law	No	No	No	Separate bill	n/a	\$133/yr
Haverford Township	Yes	No	??	No	Separate bill	Water meter	200/yr
Lansdowne Borough	Yes	Yes	n/a	No	Separate bill	Water meter	\$206/?
Lower Chester Township	plumb code/state law	No	No	No	Separate bill	Flat fee	\$175/yr
Marcus Hook Borough	Yes-plumb code	N/a-maybe	n/a	No	Tax bill		\$250/-- \$150/yr
Marple Township							
Millbourne Borough	Blank	No	Yes	No	Separate bill	Flat fee	blank
Morton Borough	plumb code/state law	No	Maybe	No	Separate bill	Flat fee	\$175/yr
Nether Providence Township							
Norwood Borough							

TABLE 6-1

PUBLIC SEWER SURVEY RESULTS  
(CONTINUED)

	Yes, plumb code sec.131-91	No	Yes	No	Other – DELCORA	See prev. response	blank
Parkside Borough							
Prospect Park Borough	Yes	Yes	n/a	No	Separate bill	Water meter	\$290/yr
Radnor Township	Yes	No	Yes	No	Separate bill	Water meter	n/a
Ridley Township	plumb code/state law	No	No	No	Separate bill	Flat fee	\$175/yr
Ridley Park Borough	plumb code/state law	No	Yes	No	Separate bill	Flat fee	\$211/yr
Rutledge Borough	plumb code/state law	No	Yes	No	Separate bill	Flat fee	\$147/yr
Sharon Hill Borough	n/a	Yes	n/a	No	Tax bill	Water meter	\$65/quart.
Springfield Township	Yes	Yes	Yes	No	Tax bill	n/a	\$150/yr.
Swarthmore Borough	Yes	Yes	n/a	No	Separate bill	Water meter	\$200/yr.
Tinicum Township							
Trainer Borough	Yes	No	n/a	No	Separate bill	Water meter	\$90x2 yr
Upland Borough	plumb code/state law	No	No	No	Separate bill	Water meter	\$150/yr
Upper Darby Township							
Yeadon Borough							

\*Two different survey responses were received from the municipality.

Source: DCPD, 2002



remains in service and that the I&I in the existing interceptors is not addressed with this cost.) The estimated cost for the 13,500 feet of parallel interceptor is \$8.7 million and assumes that there is no right-of-way acquisition cost, the depth of the interceptor is no greater than ten feet, and there are no more than ten stream crossings.

Implementation of the corrective measures recommended in the I&I studies will also be expensive for some municipalities. While the State's PENNVEST program can offer low interest loans to municipalities for infrastructure repair, a funding stream will still be needed to pay back the loan. Therefore, it is important for municipalities to begin budgeting for necessary repairs and seek funding from available sources. However, it is important to note that, with the exception of a very few municipalities, the return on investment for implementation of local corrective action plans far exceeds the initial cost of repair. See below for a more detailed explanation of municipal return on investment for the recommended repairs.

Section 5.4 of the I&I Summary Report notes that it currently costs approximately \$1,109 per million gallons (excluding fixed annual costs) to convey and treat the ground and surface water currently entering the collection system at the PSWPCP. Based on the savings associated with I&I reduction recommended in each of the municipal and authority corrective action plans, an analysis was performed to determine the years required to pay back the initial capital investment and to develop an investment rate of return. The following information presented in Table 6-2 provides specific data regarding return on investment for corrective measures undertaken by each of the municipalities. As noted in the report, this analysis is based on the following assumptions:

- The entire program cost is incurred in the first year.
- The return on investment does not begin until the fourth year.
- A 60% reinvestment is required in the tenth year.

A subsequent analysis of return on investment for municipal corrective actions recommended in the I&I Summary document (Figure 6-1) was prepared to facilitate analysis of the economics associated with implementation of the proposed corrective action plans. The results shown in the figure and table indicate that there is an economic advantage to making the recommended corrections for all but three municipalities.

One of the most important considerations of the I&I studies is implementation. Until the studies were performed, many municipalities were unaware of the extent of their contribution to the overall I&I problem. There is currently no continued I&I monitoring program in many of the municipalities, and, as noted in the Chapter 7 Institutional Analysis, there is

**Table 6-2**  
**Investment Return Eastern Municipalities I&I Correction Program**

Municipality	Estimated Inflow Cost	Estimated Infiltration Cost	Estimated I&I Cost	Estimated I&I Reduction (gpd)	Cost per I&I Gallon Removed	Annual Savings <sup>1</sup>	Payback Years	IRR <sup>2</sup> w/ 20-Year Life
Clifton Heights Borough	12,237	19,180	31,417	814,000	0.04	329,495	0.10	157.8%
Folcroft Borough	2,100	22,007	24,107	288,000	0.08	116,578	0.21	109.8%
Darby Township	5,550	20,250	25,800	290,000	0.09	117,388	0.22	106.6%
~ Ridley Park Borough	14,600	97,921	112,521	1,250,000	0.09	505,981	0.22	105.9%
Glenolden Borough	7,500	156,213	163,713	1,380,000	0.12	558,603	0.29	92.2%
~ Morton Borough	6,600	48,691	55,291	414,000	0.13	167,581	0.33	86.7%
Colwyn Borough	4,250	13,700	17,950	130,000	0.14	52,622	0.34	85.2%
~ Rutledge Borough	1,650	126,760	128,410	463,000	0.28	187,415	0.69	57.9%
~ Springfield Township	50,000	59,000	109,000	350,000	0.31	141,675	0.77	54.1%
~ Prospect Park Borough	5,000	303,451	308,451	963,000	0.32	389,808	0.79	53.2%
~ Marple Township	19,000	214,405	233,405	585,000	0.40	236,799	0.99	46.4%
Sharon Hill Borough	-	282,020	282,020	380,000	0.74	153,818	1.83	30.1%
Aldan Borough	10,000	464,500	474,500	636,150	0.75	257,504	1.84	30.0%
Lansdowne Borough	6,000	465,513	471,513	529,000	0.89	214,131	2.20	26.1%
~ Ridley Township	8,050	2,623,885	2,631,935	2,950,000	0.89	1,194,116	2.20	26.1%
Darby Borough	17,500	437,000	454,500	447,000	1.02	180,939	2.51	23.3%
Upper Darby Township	187,756	587,137	774,893	620,000	1.25	250,967	3.09	19.3%
~ Swarthmore Borough	200	475,835	476,035	270,000	1.76	109,292	4.36	13.1%
Collingdale Borough	-	560,874	560,874	300,000	1.87	121,436	4.62	12.2%
~ Nether Providence Township	89,691	760,607	850,298	149,000	5.71	60,313	14.10	-3.6%
Norwood Borough	20,698	814,288	834,986	112,300	7.44	45,457	18.37	-6.8%
Yeadon Borough	15,000	2,071,650	2,086,650	131,000	15.93	53,027	39.35	-15.3%
<b>Municipal Totals</b>	<b>483,382</b>	<b>10,624,886</b>	<b>11,108,268</b>	<b>13,451,450</b>	<b>0.83</b>	<b>5,444,945</b>	<b>2.04</b>	<b>27.7%</b>
Muckinipates Authority	3,850	-	3,850	23,100	0.17	9,351	0.41	77.1%
Central Delaware County Authority	27,000	219,390	246,390	253,480	0.97	102,605	2.40	24.2%
Darby Creek Joint Authority	12,500	78,293	90,793	87,380	1.04	35,370	2.57	22.9%
Radnor Haverford Marple Sewer Authority	13,250	1,635,706	1,648,956	748,775	2.20	303,093	5.44	9.5%
<b>Authority Totals</b>	<b>56,600</b>	<b>1,933,389</b>	<b>1,989,989</b>	<b>1,112,735</b>	<b>1.79</b>	<b>450,418</b>	<b>4.42</b>	<b>12.9%</b>
<b>Grand Totals</b>	<b>539,982</b>	<b>12,558,275</b>	<b>13,098,257</b>	<b>14,564,185</b>	<b>0.90</b>	<b>5,895,364</b>	<b>2.22</b>	<b>25.9%</b>

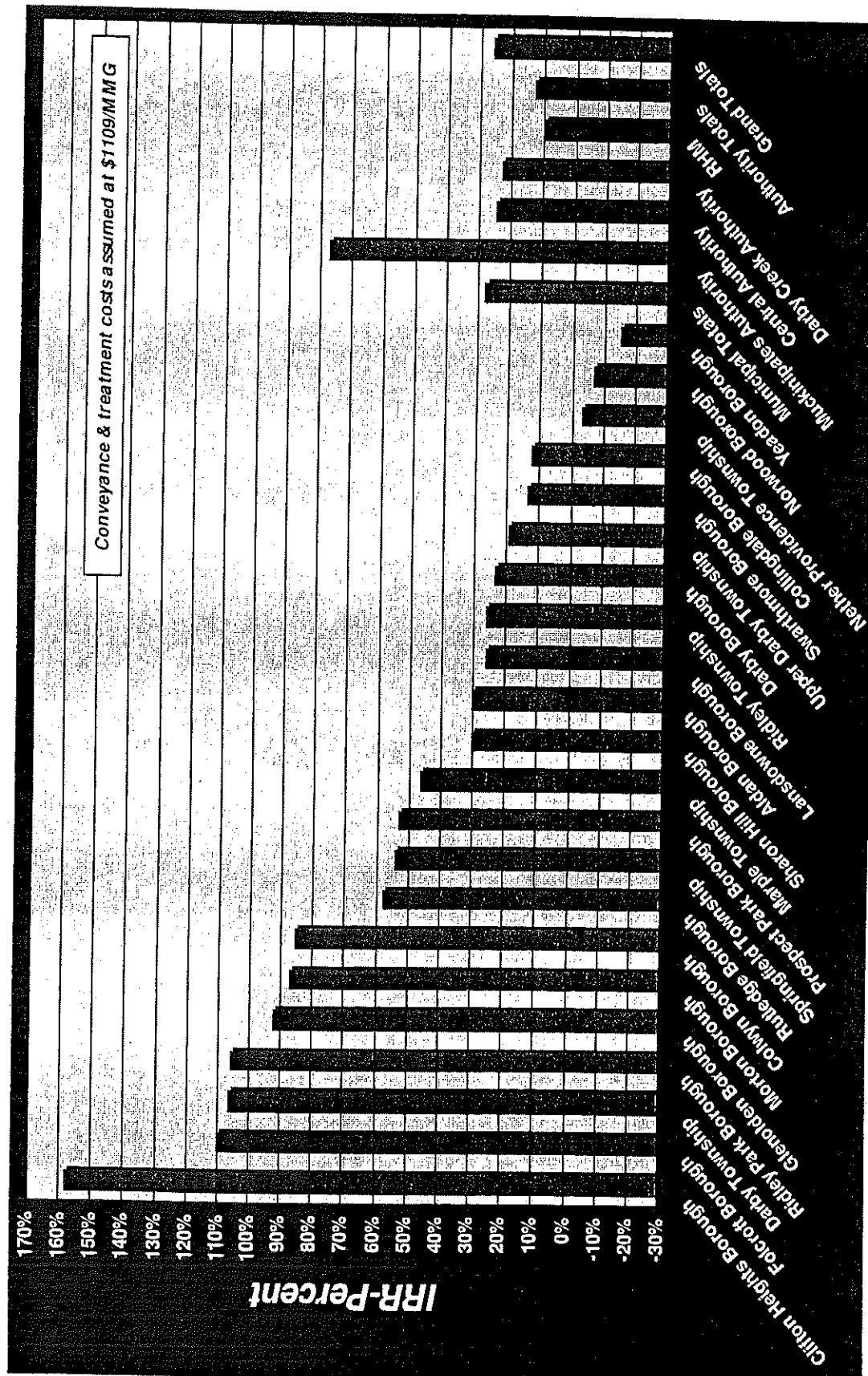
**Notes:**

<sup>1</sup> Based on treatment and conveyance costs of \$1,109.00 per million gallons.

<sup>2</sup> Assumes no savings in first 3 years and a 60% reinvestment in the 10th year.



FIGURE 6-1  
RATE OF RETURN



Source: Roy F. Weston, Inc., 2001

currently no way to reward municipalities for making necessary corrections. Therefore, a recommendation of this report is to investigate the possibility of providing municipalities with the support necessary to implement a long-term metering program which could ultimately serve as the basis for institutional changes in billing methods which might reward municipalities for implementation of their local I&I plans.

Consideration and implementation of metering is acknowledged to be the responsibility and option of each individual municipality and authority. During the course of this study, several municipalities have expressed their interest in developing a way to have their bills based on flow rather than the current EDU method. Particularly evident is the concern that a municipality that invests in I&I work will not receive the full benefits of reduced flow in the form of cost reduction under the current system. The recommended alternative of this plan is for each municipality and conveyance authority to implement its own individual corrective action plan. Without metering by all municipalities, no individual municipality will be able to receive the benefits associated with reduced flow from its own I&I elimination work. Therefore, metering of at least the major entry points into the conveyance authority interceptors is essential. This might necessitate amendments, modifications, or separate side agreements between the municipalities and the respective conveyance authorities. Municipal listings of connections into the conveyance authorities' interceptors are currently being developed. With this information, a plan will be developed to provide metering analysis including cost estimates to implement the metering program. Once this information is assembled, the municipalities will be able to make a more informed decision on how they wish to proceed.

## **CAPACITY, MANAGEMENT, OPERATION, AND MAINTENANCE REQUIREMENTS**

Section 40 CFR 122.42 (f) under the Clean Water Act will very soon require municipalities with sanitary sewer systems to obtain permits for these systems. The General Standards subsection requires permittees to:

- (i) properly manage, operate, and maintain at all times, all parts of a collection system that they own or over which they have operational control;
- (ii) provide adequate capacity to convey base flows and peak flows for all parts of the collection system that they own or for which they have operational control;



- (iii) take all feasible steps to stop, and mitigate the impact of, sanitary sewer overflows in portions of the collection system that they own or for which they have operational control;
- (iv) provide notification to parties with a reasonable potential for exposure to pollutants associated with the overflow event; and
- (v) develop a written summary of their CMOM program and to make it, and the audit under section (5), available to any member of the public upon request.

This legislation will require municipalities to develop a management program to comply with the items noted above. Elements of the program are to include legal mechanisms (ordinances, agreements, and other documents) for implementation, responsible parties for implementation of various measures required under the program, an Overflow Response Plan, a System Evaluation and Capacity Assurance Plan, and provisions for audits and communication.

By implementing the recommendations presented in this Act 537 plan voluntarily, municipalities will help to satisfy the regulatory requirements that will be imposed on the municipalities under the CMOM program. For more information regarding some of the specifics of the required plan, refer to Appendix C.

## **CHAPTER 7**

### **INSTITUTIONAL EVALUATION**

#### **INTRODUCTION**

Sewage facilities planning requires more than just an evaluation of the "bricks and mortar" that make up the physical infrastructure of the various components of a sewer system. It also includes an analysis of all of the agreements, contracts, and in this particular area which is served by a network of sewer authorities, the legal interrelationships that provide the legal framework for support of the various components of the physical sewer infrastructure. Therefore, the purpose of this chapter is to provide an evaluation of the current legal framework within which the current sewer authorities operate, to evaluate their effectiveness, and to make recommendations for modifications or improvements that will help to facilitate implementation of the alternatives suggested in Chapter 6.

#### **GENERALIZED PERFORMANCE OF WASTEWATER TREATMENT AUTHORITIES IN EASTERN DELAWARE COUNTY**

##### **DELCORA**

As noted in Chapter 3, DELCORA was established in 1971 for the purpose of implementing the County's Act 537 plan. Duties of this organization include acquisition, construction, improvement, maintenance, operation, owning, and leasing of the sewer system and sewer treatment facilities within the two DELCORA service areas. DELCORA is served by a nine-member Board of Directors appointed by County Council. Day to day operations are handled by DELCORA's Executive Director and staff.

##### **Eastern Service Area**

##### **Organization and Billing**

DELCORA maintains an existing contract with the City of Philadelphia Water Department for treatment of an average of 50 MGD of sewage flows generated within the boundaries of the major conveyance authorities in the Eastern Service Area. The agreement also includes a daily limit of 75 MGD. Costs for this service are based on percent of total flow to the PSWPCP. Charges include BOD<sub>5</sub>, total suspended solids (TSS), and a management fee. The current agreement (Year 2000) calls for a rate of \$841/MGD. This agreement, which is good until 2004, is subject to periodic



update. Each of the conveyance authorities, which include DCJA, MA, and CDCA, share in the Philadelphia treatment costs charges.

DELCORA bills the conveyance authorities based on their share of measured flow at the DELCORA pump stations that convey flows to the City of Philadelphia, including additional required DELCORA charges. MA and DCJA also pay for their own administration and O&M costs. DELCORA administration and debt service costs are also included as indirect costs to MA and DCJA. CDCA pays its share of Philadelphia treatment costs based on flow and DELCORA administration and debt service costs.

Each conveyance authority's costs are then billed to the member municipalities, who in turn bill their residents. The way that the conveyance authorities bill their member municipalities varies according to their individual agreements. The basis and method by which the municipalities bill their residents also varies. Some municipalities include sewer fees in the local tax bill, while most issue a separate bill. Some bills are based on a flat fee, others by water meter reading. Refer to Table 5-1 for more information concerning local billing practices.

As required by the various municipal, conveyance authority, and DELCORA agreements, connection of any source of water other than sanitary sewers (i.e., downspouts, sump pumps, etc.) is strictly prohibited. The degree to which municipalities actually enforce this regulation through inspection programs is unclear.

### **Evaluation**

As noted in Chapter 3, much of the Eastern Service Area has identified problems with I&I at both the conveyance authority and particularly the municipal level. Several major problems have been identified regarding the way to deal with this issue at the municipal level.

1. Since there are few if any meters going from the municipalities to the conveyance authorities, it is difficult to determine total flows coming from a particular municipality into any one authority's conveyance line. Therefore, there is no true accountability, and thus, no incentive for a municipality to reduce I&I.
2. Without accurate metering, it is difficult to measure improvements made by municipalities.
3. Authority facilities (interceptors and pump stations) are operated and maintained by boards with consulting engineering staff; therefore, there is a reduced level of oversight on a daily basis.

Some of the pros and cons of the conveyance authorities continuing to operate their systems in the manner described above are as follows:

**Pros:**

- There is a local voice (via the appointed board member) in the operation of the various components in the system as well as in billing for services back to municipalities and residents.
- The system of tributary authorities generally reflects watersheds. Therefore, it is easier to evaluate impacts and improvements on a watershed basis.

**Cons:**

- Each authority feeding into the regional sewer system has its own Board of Directors serving as its administrative body.
- Currently, no regulatory capability exists for the O&M of the various components of the system.
- An appointed Board serves as an additional layer of management of the system components.
- There is no uniformity in maintenance of the system.
- There is no uniformity in pricing for service between municipalities (particularly those served by more than one authority).

**Conclusions**

I&I problems are currently the most pressing issues for the conveyance authorities and the municipalities in DELCORA's Eastern Service Area. However, it is important to remember that increased I&I is a symptom of an aging collection system in need of repair. Implementation of improvements specifically designed to correct I&I are important because they have a direct impact on water quality, cost of conveyance and treatment, and capacity for new connections in the northern reaches of eastern Delaware County.

As noted in Chapter 6, implementation of local corrective action plans could prove costly, and municipalities should begin taking steps to budget the funding needed to make repairs. There are currently few if any incentives on the part of municipalities to make needed improvements to their



component(s) of the larger sewer system. However, as noted previously, the return on investment from the proposed improvements should more than cover the cost of repairs in most cases. Therefore, several options discussed later in this chapter are geared toward providing needed funding and institutional support within the existing institutional framework noted above.

In addition, documentation of corrective actions through a program of metering could not only provide a basis for the development of more equitable billing practices between the municipalities and the authorities, it might also serve as a way to measure the effectiveness of improvements so as to provide a means to quantify return on investment for improvements made to municipal systems. Self-reporting solar powered meters, when placed in existing manholes, can range from \$8,975 to \$11,281. If purchased cooperatively, they may cost less. While this may be viewed as an additional cost associated with corrective action plan implementation, the ability to measure the benefits of improvements made may provide municipalities with the documentation they need to make a case for a reduction in conveyance and treatment rates.

## **Western Service Area**

### **Organization and Billing**

The most significant component of the Western Service Area system is the DELCORA-owned and operated W RTP located in the City of Chester. As part of this system, DELCORA also owns and maintains several pump stations and miles of sewer lines (refer to Chapter 3 facilities). Municipalities within the Western Service Area include Trainer, Marcus Hook, Eddystone, Brookhaven, Parkside, and Upland Boroughs, the City of Chester, and portions of Chester and Nether Providence Townships.

Trainer, Marcus Hook, Eddystone, and Brookhaven Boroughs are billed directly based on their pumped, metered flows. Costs associated with conveyance and treatment of these flows is the prorated share of the costs for treatment and pumping at the W RTP. Customers in the City of Chester are billed directly from DELCORA based on water usage at \$2.70/1,000 gallons (as of 2/01). Customers in Upland and Parkside Boroughs and in Chester Township are also billed directly from DELCORA based on water usage at \$2.76/1,000 gallons (as of 2/01). Costs for CSO management in the City of Chester are borne by its residents.

As with DELCORA's Eastern Service Area, connection of any source of water other than sanitary sewers (i.e., downspouts, sump pumps, etc.) is

strictly prohibited. The degree to which municipalities actually enforce this regulation through inspection programs is unclear.

### **Evaluation**

As a single regional authority, DELCORA is able to operate and maintain its own facilities (lines, pump stations, treatment plant) as needs arise. It has a full-time Executive Director, trained professional staff, and a single Board of Directors providing oversight. However, it should be noted that issues still exist regarding implementation of needed improvements in local sewer systems beyond DELCORA's direct control, as well as the issue relating to a lack of incentive to reduce flows in these local collection systems when billing is based on a water bill.

Since DELCORA owns and operates the WRTP, it has legal responsibilities to the Commonwealth of Pennsylvania for the safe and effective operation of its system through its NPDES permit. The permit allows the state and federal governments to hold DELCORA accountable for its system and operations. Coupling this with DELCORA's desire to manage treatment costs, it provides strong incentives to maintain its facilities and eliminate I&I.

The pros and cons of the existing regionalized sewage conveyance and treatment system are as follows:

#### **Pros:**

- Single layer of management.
- Trained staff and employees specializing in wastewater management and treatment.
- Ability to view projects and their benefits to the County as a whole.
- Accountability for their facilities through the NPDES permit for the WRTP.
- Increased financial stability since costs are spread over a larger area that is less susceptible to neighborhood economic limitations.



### **Cons:**

- Because DELCORA has a Countywide charter, there is a perception that it doesn't directly represent the interest of individual homeowners.
- There is a reduced level of accountability for the O&M of the components of the system not directly controlled by DELCORA.

### **Conclusions**

As with the Eastern Service Area, I&I problems are currently the most pressing issues for the municipalities in DELCORA's Western Service Area. It is important to remember that increased I&I is a symptom of an aging collection system in need of repair. There are currently few if any incentives on the part of municipalities to make needed improvements to their component(s) of the larger sewer system. These improvements, which are specifically designed to correct I&I, are important because they have a direct impact on water quality, cost of conveyance and treatment, and capacity for new connections. Therefore, several options are discussed later in this chapter which are geared toward providing needed funding and institutional support within the existing institutional framework noted above.

As an option for regionalization of collection and treatment of wastewater, DELCORA provides an efficient, self-sufficient organization that specializes in wastewater treatment and systems management.

### **Municipalities Served by the City of Philadelphia**

As noted in previous chapters, all or portions of several municipalities flow directly through a connection in Upper Darby Township into the City of Philadelphia sewer system without passing through another regional conveyance authority. These municipalities include all of Millbourne and East Lansdowne Boroughs and portions of Haverford Township and Yeadon Borough.

### **Organization and Billing**

Upper Darby Township has an agreement with the City of Philadelphia for conveyance and treatment of flows conveyed through the Township. Each of the tributary municipalities noted above has a separate agreement with Upper Darby for conveyance of its flows. Flows for the year 2000 equaled 3,847 MGD. Upper Darby pays the City on a quarterly basis. While the fee is based on a number of factors including flow, BOD<sub>5</sub>,

suspended solids, etc., the fee is usually \$605/MGD. The relative cost per household is \$145 for residential and \$145/60,000 gals. for commercial connections.

## **Evaluation**

Upper Darby Township considers the arrangement with the City to be working very smoothly. It may be possible, however, to obtain an even better rate for conveyance and treatment in its next contract.

## **Conclusions**

The existing program of collection, conveyance, and treatment of sewage from Haverford Township and East Lansdowne, Millbourne, and Yeadon Boroughs through Upper Darby Township to the City of Philadelphia is working well.

## **Tinicum Township**

### **Organization and Billing**

Tinicum Township has a sewer authority that owns and operates a collection and treatment system that is sized to serve its 4,510 residents as well as its industrial customers (equivalent to approximately 12,000 people with daytime industrial flows). There are 1,586 connections. The sewer authority has a board appointed by the Township and is considered a leaseback authority. While the sewer authority is responsible for the mortgage, a full-time operator hired by the Township runs the plant. Residential customers are billed based on water meter readings. Industrial customers are charged a flat fee per employee or based on water usage.

### **Evaluation**

Tinicum Township needs to perform its own evaluation of the costs/benefits of making improvements to its sewage treatment plant vs. any possible alternatives to the existing system which might include connecting to the City of Philadelphia or participating in the construction of a new sewage treatment plant at the lower end of Darby Creek.

### **Conclusions**

Tinicum Township has the authority to determine the adequacy of its own facilities and to set rates for its customers based upon local Act 537 planning. The Township is very comfortable in its current position as owner-

operator of the existing facilities serving the Township and has no plans to make any institutional changes at this point in time.

## **INSTITUTIONAL ALTERNATIVES FOR EASTERN DELAWARE COUNTY**

### **Generalized Alternatives**

The institutional alternatives for eastern Delaware County considered in this analysis include:

1. No action – do nothing to change the existing institutional operation and management system.
2. Develop and implement a management package including:
  - Stabilize rates using a “cooperative” led by DELCORA for mass purchases of goods and services to take advantage of economies of scale.
  - Base agreements on actual flow to encourage I&I elimination.
  - Develop and implement a CMOM program in accordance with regulations when they come out.
3. Fully utilize capacity at the W RTP to stabilize treatment costs.

### **DELCORA Eastern Service Area**

#### **Alternatives**

The institutional alternatives for DELCORA’s Eastern Service Area other than the generalized alternatives above include the following:

1. The communities that have areas that connect directly to the City of Philadelphia (not part of DELCORA’s Eastern Service Area) could join together in negotiations with the City to obtain the best possible rates for the treatment of wastewater.
2. Increased regionalization of the systems.



## **Evaluation**

1. Review roles and functions of existing or proposed organizations and the necessity to develop new authorities with specific responsibilities.
2. Analyze alternatives in terms of implementability, institutional feasibility, performance, and capability to react to future demands.

### **DELCORA Western Service Area**

#### **Alternative**

The institutional alternative for DELCORA's Western Service Area other than the generalized alternatives above includes the following:

1. Increased regionalization of the systems.

#### **Evaluation**

There currently does not appear to be a need to redefine any of the roles and functions of the DELCORA sewage treatment and management system in this portion of the County. However, in order to stabilize costs for treatment, it is recommended that, when reasonable, DELCORA try to fully use capacity at its WRTP.

### **City of Philadelphia**

#### **Alternatives**

1. Do nothing new. Continue to utilize existing agreements.
2. One or more municipalities should actively pursue a joint agreement with the City of Philadelphia.

#### **Evaluation**

1. There currently does not appear to be a need to redefine any of the roles and functions of the City Water Department with regard to provision of sewage conveyance and treatment for municipalities connected to the City system.
2. Analyze alternatives in terms of implementability, institutional feasibility, performance, and capability to react to future demands.

## **Tinicum Township**

### **Alternatives**

1. The Township and the Sewer Authority should continue to own and operate existing/upgraded facilities designed to serve existing and future development anticipated in the Township. Do nothing additional.
2. The Township and the Sewer Authority should continue to own and operate existing/upgraded facilities designed to serve existing and future development anticipated in the Township. Develop and implement a management package including:
  - Regularly inspect and maintain the existing sewer system.
  - Participate in mass purchases (negotiate an agreement with DELCORA) to take advantage of economies of scale and stabilization of costs.
  - Develop and implement a CMOM program in accordance with regulations when they come out.
3. Phase out the sewage treatment plant and pump to the City of Philadelphia.

### **Evaluation**

The Township is undertaking measures to provide for the long-term sewage collection and treatment needs of its limited population of residents and industries. The proposed improvements (refer to Chapter 3) to the Township's sewage treatment plant should keep it operational for many years to come. Therefore, there does not appear to be a need to eliminate the plant or to modify management of the facilities. However, it is recommended that in order to help the Township ensure the integrity of the existing system, it should consider adopting the recommended management package (including coordination with DELCORA for mass purchase of any needed structural items such as manhole inserts, etc.) suggested above.

## **CHAPTER 8**

### **SELECTED WASTEWATER TREATMENT AND INSTITUTIONAL ALTERNATIVES FOR EASTERN DELAWARE COUNTY**

#### **INTRODUCTION**

The purpose of this chapter is to present the designated alternatives, including modifications to the existing institutional framework, for the continued operation and management of the sewer system network serving the eastern Delaware County study area.

#### **DELCORA EASTERN SERVICE AREA**

Since DELCORA serves as a conveyance authority in this portion of the eastern study area, the following recommended alternatives are geared toward activities and/or programs to be undertaken by the tributary authorities (DCJA, CDCA, MA, RHM) and the municipalities. When appropriate, recommendations have also been made regarding activities and programs to be implemented by DELCORA.

#### **Designated Alternative(s)**

##### **DELCORA**

- Provide technical assistance to municipalities for implementation of local I&I corrective action plans.
- Develop and implement a joint cooperative purchase program to assist municipalities with implementation of their respective corrective action plans.
- Develop a program to help assist municipalities in funding needed corrections.
- Provide a forum for discussion regarding a possible metering program.

##### **Authorities**

- Implement individual authority corrective action plans as adopted by reference in Appendix D.



## **Municipalities**

- Implement individual municipal corrective action programs as adopted by reference in Appendix D.
- Pursue opportunities for local flow metering to determine the effectiveness of implementation of I&I corrective action programs.
- Identify and monitor any existing on-lot sewage disposal systems.

## **Justification for Selected Alternative(s)**

### **DELCORA**

- Continued operation of the existing system of conveyance to the City of Philadelphia for treatment appears to be the most cost-effective method of serving the sewage treatment needs of eastern Delaware County residents at this time.

### **Authorities**

- Implementation of corrective action plans appears to be the most cost-effective method of ensuring the continued service life of the system to serve the needs of residents in the tributary municipalities served by the authorities.

## **Municipalities**

- Costs for treatment of I&I are increasing.
- If needed corrections to the individual systems are not performed, the long-term result may be system failure.
- There is a need to provide for capacity for additional connections to serve the needs of developing portions of the Eastern Service Area.
- Implementation of corrective action plans is the most cost-effective and least intrusive method for ensuring life of the system and for adding capacity in limited areas.

## **Legal and Administrative Issues and Documents**

### **DELCORA**

- Amend the contract with the City of Philadelphia, if necessary.
- Develop a joint cooperative purchase program and associated schedule.
- Seek funding (grants, loans, etc.) to implement the cooperative purchase program.
- Develop contracts/agreements with funding entities and municipalities for the cooperative purchase program.

### **Authorities**

- Develop a program and associated schedule for implementation of corrective action plans.
- Seek funding for implementation of corrective action plans.
- Renegotiate agreements with member municipalities to allow for equitable cost distribution based on actual flows.

Note: neither the County nor DELCORA has the power to force the authorities to implement their respective corrective action plans. The power to make authorities implement lies with the municipal representatives serving on the authority boards.

### **Municipalities**

- Adopt the Delaware County Act 537 Sewage Facilities Plan Update, Eastern Plan of Study (2002).
- Develop a program and associated schedule for implementation of local corrective action plans.
- Seek funding for implementation of municipal corrective action plans.

### **DELCORA WESTERN SERVICE AREA**

#### **Designated Alternative(s)**

- Continue implementation of DELCORA's Long-Term CSO Control Plan.

- Reevaluate conditions and revise the Long-Term CSO Control Plan as necessary.
- Evaluate the potential for storm and sanitary sewer system separation on a case by case basis as redevelopment occurs.
- Undertake I&I studies as needed.
- Implement recommendations of I&I studies as necessary.
- Identify and monitor any existing on-lot sewage disposal systems.

#### **Justification for Selected Alternative(s)**

- Current conditions do not lend themselves to large-scale separation of the storm and sanitary sewer systems, except for redevelopment areas.
- DELCORA has a well planned and implemented strategy approved by EPA and DEP for management of the existing combined sewer system in the City of Chester.

#### **Legal and Administrative Issues and Documents**

- Adopt the Delaware County Act 537 Sewage Facilities Plan Update, Eastern Plan of Study (2002).
- No specific legal issues have been identified at this time.
- Issues may arise in the future as the CSO control plan is revised.

### **MUNICIPALITIES SERVED BY THE CITY OF PHILADELPHIA**

#### **Designated Alternative(s)**

- Continue to send flows from portions of Upper Darby and Haverford Townships and Millbourne, East Lansdowne, and Yeadon Boroughs through Upper Darby Township to the PSWPCP.
- Conduct I&I studies as necessary to identify any needed corrections.
- Coordinate/cooperate with DELCORA in any joint cooperative purchase program to take advantage of economies of scale.
- Identify and monitor any existing on-lot sewage disposal systems.



### **Justification for Selected Alternative(s)**

- It would not be cost-effective at this time to replace/redirect the existing sewer system in order to divert flows from the Philadelphia service area to some other conveyance system and/or treatment facility.

### **Legal and Administrative Issues and Documents**

- Adopt the Delaware County Act 537 Sewage Facilities Plan Update, Eastern Plan of Study (2002).
- Work with other municipalities and DELCORA to arrange for cooperative agreement(s) or cooperatively negotiate pricing for conveyance and treatment with the City.

## **TINICUM TOWNSHIP**

### **Designated Alternative(s)**

- Continue to collect and treat wastewater from residents and industries in the Township for as long as it continues to be the most cost-effective and environmentally sound treatment method as compared to other alternatives.
- Continue to operate the Township sewage treatment plant and make proposed improvements.
- Develop and implement an O&M program to ensure continued life of the system.
- Coordinate/cooperate with DELCORA to participate in any joint cooperative purchase program to take advantage of economies of scale.
- Identify and monitor any existing on-lot sewage disposal systems.

### **Justification for Selected Alternative(s)**

- The Township has been doing an adequate job of operating and managing its own system.
- There are currently no environmental, economic, or legal reasons to modify current arrangements at this time.

### **Legal and Administrative Issues and Documents**

- Adopt the Delaware County Act 537 Sewage Facilities Plan Update, Eastern Plan of Study (2002).
- Pursue grants as necessary to fund the proposed wastewater treatment plant improvements.
- Continue to equitably distribute costs to customers utilizing the Township system.

## **CHAPTER 9**

### **IMPLEMENTATION PROGRAM**

#### **INTRODUCTION**

The purpose of this chapter is to provide a framework and schedule for the implementation of the recommended alternatives highlighted in Chapter 8 of this document.

#### **IMPLEMENTATION SCHEDULE**

##### **DELCORA**

2002 Develop a technical assistance program including:

- Prepare an organizational outline for the program.
- Seek and or develop options for funding assistance.
- Develop a joint cooperative purchase program (including agreements, etc.).
- Convene a task force consisting of municipal and authority representatives to evaluate the costs/benefits of metering.

2003 Implement an on-going technical assistance program to assist municipalities with implementation of local corrective action plans.

2004 Continue a technical assistance program.

##### **DELCORA Eastern Service Area Municipalities and Authorities**

The timetable for implementation of municipal and authority I&I studies is as specified in each of the individual studies. However, a general recommendation for proceeding with a five-year implementation program is as follows:

2002 Adopt the Act 537 plan update (each municipality and authority).

2002 Prioritize I&I corrective actions, develop a preliminary budget for implementation, and seek funding for implementation of a corrective action plan.



2003 Begin implementation of a five-year corrective action plan.

2005 Reevaluate the effectiveness of the corrective action plan.

2006 Continue and/or revise the corrective action plan.

#### **DELCORA Western Service Area Municipalities**

The timetable and associated costs for implementation of needed corrective actions is as specified in the CSO Control Plan. Implementation of a storm/sanitary sewer separation program should be done on a case by case basis as redevelopment occurs.

Develop a sewage management program:

2002 Adopt the Act 537 plan update.

2002 Develop a scope and budget for an I&I inspection program.

2003 Undertake I&I inspections and develop a five-year corrective action plan.

2004 Begin implementation of a five-year corrective action plan.

2006 Reevaluate the effectiveness of the I&I corrective action plan.

2007 Continue and/or revise the corrective action plan.

#### **Municipalities Served by the City of Philadelphia**

DELCORA has already met with Upper Darby Township and has gotten a positive response regarding the potential for joint talks with the City of Philadelphia.

Develop a sewage management program:

2002 Adopt the Act 537 plan update.

2002 Develop a scope and budget for an I&I inspection program.

2003 Undertake I&I inspections and develop a five-year corrective action plan.

2004 Begin implementation of a five-year corrective action plan.

2006 Reevaluate the effectiveness of the I&I corrective action plan.

2007 Continue and/or revise the corrective action plan.

### **Tinicum Township**

2002 Adopt the Act 537 plan update.

2002 Develop an O&M program.

2003 Implement an O&M program.

\*The timing for implementation of Tinicum Township's sewage treatment plant improvement program is directly linked to its grants and construction schedule.

### **ADMINISTRATIVE ISSUES**

This plan does not recommend any significant changes in the ownership or operation of sewage facilities at this time.

### **MODEL RESOLUTION FOR ADOPTION**

The following is a model resolution for municipal adoption of this Act 537 Sewage Facilities Plan Update.

**RESOLUTION ADOPTING THE DELAWARE COUNTY SEWAGE  
FACILITIES PLAN - EASTERN PLAN OF STUDY**

RESOLUTION OF THE (Commissioners/Council) OF \_\_\_\_\_  
(Township/Borough), DELAWARE COUNTY, PENNSYLVANIA (hereinafter "the  
municipality").

WHEREAS, Section 5 of the Act of January 24, 1966, P.L. 1535, No 537, known as the "Pennsylvania Sewage Facilities Act," as amended, and the Rules and Regulations of the Department of Environmental Protection (Department) adopted thereunder, Chapter 71 of Title 25 of the Pennsylvania Code, require the municipality to adopt an Official Sewage Facilities Plan providing for sewage services adequate to prevent contamination of waters and/or environmental health hazards with sewage wastes, and to revise said plan whenever it is necessary to meet the sewage disposal needs of the municipality; and

WHEREAS, the Delaware County Planning Department, acting upon authorization from the Pennsylvania Department of Environmental Protection, did offer assistance to the municipalities in meeting their Act 537 requirements on a sub-County basis; and

WHEREAS, the (Township/Borough) of \_\_\_\_\_ did by formal resolution dated \_\_\_\_\_, authorize the County of Delaware to prepare the sewage facilities plan on its behalf; and

WHEREAS, the appropriate municipal officials of the (Township/Borough) have reviewed the findings and recommendations of that plan and find it to conform to applicable zoning, subdivision, other municipal ordinances and plans, and to a comprehensive program of pollution control and water quality management.

NOW, THEREFORE, BE IT RESOLVED THAT THE (Commissioners/ Council) of (Township/Borough) hereby accept(s) and adopt(s) the "Delaware County Act 537 Sewage Facilities Plan Update - Eastern Plan of Study," prepared by the Delaware County Planning Department, February 2002, as the official plan for sewage facilities in compliance with the Pennsylvania Sewage Facilities Act of 1966. The (Township/Borough) hereby assures the Department of the complete and timely implementation of the said plan as required by law. (Section 5, Pennsylvania Sewage Facilities Act, as amended).

I, \_\_\_\_\_, Secretary, \_\_\_\_\_  
(Township/Borough) (Commissioners/Council) hereby certify that the foregoing is a true copy of the (Township's/Borough's) Resolution No. \_\_\_\_\_, adopted \_\_\_\_\_, 2002.

AUTHORIZED SIGNATURE

\_\_\_\_\_

TOWNSHIP/BOROUGH SEAL



## ACRONYMS

<b>BRC</b>	Biosolids Recycling Plant
<b>CCPS</b>	Crum Creek Pump Station
<b>CDCA</b>	Central Delaware County Authority
<b>CDPS</b>	Central Delaware Pump Station
<b>CEMS</b>	Continuous Emission Monitoring System
<b>CMOM</b>	Capacity, Management, Operation, and Maintenance
<b>COWAMP</b>	Comprehensive Water Quality Management Plan for Southeastern Pennsylvania
<b>CPS</b>	Chester Pump Station
<b>CSO</b>	Combined sewer overflow
<b>DCJA</b>	Darby Creek Joint Authority
<b>DCPC</b>	Delaware County Planning Commission
<b>DCPD</b>	Delaware County Planning Department
<b>DCPS</b>	Darby Creek Pump Station
<b>DELCORA</b>	Delaware County Regional Water Quality Control Authority
<b>DEP</b>	Pennsylvania Department of Environmental Protection
<b>DER</b>	Pennsylvania Department of Environmental Resources
<b>DRBC</b>	Delaware River Basin Commission
<b>DVRPC</b>	Delaware Valley Regional Planning Commission
<b>EDU</b>	Equivalent dwelling unit
<b>EPA</b>	U. S. Environmental Protection Agency

<b>FEMA</b>	Federal Emergency Management Agency
<b>GIS</b>	Geographical Information System
<b>gpd</b>	Gallons per day
<b>gpm</b>	Gallons per minute
<b>I&amp;I</b>	Infiltration and inflow
<b>LS</b>	Lift stations
<b>MA</b>	Muckinipates Authority
<b>MGD</b>	Million gallons per day
<b>MPS</b>	Muckinipates Pump Station
<b>MSA</b>	Metropolitan statistical area
<b>O&amp;M</b>	Operation and maintenance
<b>PDH</b>	Pennsylvania Department of Health
<b>PENNVEST</b>	Pennsylvania Infrastructure Investment Authority
<b>PS</b>	Pump station
<b>PSWPCP</b>	Philadelphia Southwest Water Pollution Control Plant
<b>RHM</b>	Radnor-Haverford-Marple Sewer Authority
<b>SCADA</b>	Supervisory Control and Data Acquisition
<b>SDCA</b>	Southern Delaware County Authority
<b>SEO</b>	Sewage Enforcement Officer
<b>SWDCMA</b>	Southwest Delaware County Municipal Authority
<b>TSS</b>	Total suspended solids
<b>WRTP</b>	Western Regional Treatment Plant

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## APPENDIX A

### GEOGRAPHIC INFORMATION SYSTEM (GIS) MAPPING

Preparation of both the eastern and western Act 537 plans involved the collection, storage, manipulation, and analysis of a great deal of information. Through the use of GIS technology available at DCPD, planning staff were able to compile and evaluate a number of data layers, some of which include zoning (for western build-out analysis), soils (to determine suitability for on-lot septic systems), and most importantly, existing sewage facilities. The degree to which each of these layers was utilized for analysis in the eastern and western areas was a function of the planning issues relative to those areas.

#### Sewage Facilities Mapping

One of the most significant, and ultimately most useful, products of this Act 537 planning effort is an up-to-date map of the County's sewage facilities. Therefore, as part of this planning effort, DCPD undertook a project to prepare a sewage facilities coverage for the entire County. Since expansion of the sewer system in the West and repair and replacement of the sewer lines in the East are on-going, maps prepared for this effort can be considered a 1999-2000 snapshot of the County's sewer systems.

Through the use of GIS to compile and catalog municipal and authority sewer line maps, the GIS sewer coverage serves as a dynamic tool which can, with periodic updates, serve both local government and the private sector for years to come. While only selected sewer features have been provided in "hard copy" in the document, full access to the sewage facilities coverage and associated attribute tables is available in digital form.

The following is a brief description of the methodology for mapping the sewage facilities for the eastern and western study areas.

#### **East**

Most portions of eastern Delaware County have been served by public sewers for many years. There is an extensive regional network of sewer lines and interceptors responsible for collection and conveyance of flows to the two major regional plants (located in the City of Philadelphia and the City of Chester) for treatment of wastewater generated in the eastern study area. For the purposes of GIS mapping, the area was considered almost fully sewered, and decisions made regarding level of detail for the maps were based on issues associated with sewer line extension, maintenance, and repair of the existing system.



Since varying sizes of sewer lines run below almost every residential street in much of eastern Delaware County, a decision was made early in the process to limit the number of sewer lines to be mapped (based in part on cost for digitizing). Generally speaking, all individual gravity lines ten inches or larger and force mains of all sizes were mapped. Attributes relating to size, material, and flow direction of the various lines were also entered into the GIS database. Large expanses of sewer areas containing lines smaller than ten inches are indicated by shading. All manholes were mapped, and attribute tables containing placeholders for entry of additional data in the future were included as part of the GIS coverage. Pump stations and sewage treatment plants were mapped, and attribute tables containing their associated specifications were attached to the GIS.

Sewer authority boundaries were mapped based on information provided by DELCORA and the various conveyance authorities serving the area. When discrepancies arose between sewer authority maps, a decision was made to delineate the boundaries based on a number of factors including topography, the location of lines, and direction of flow within those lines.

The problem areas coverage for the eastern study area was based on the results of the individual I&I studies conducted by the municipalities and the various sewer authorities. In most cases, the problems are associated with individual lines or line segments. Such areas have been identified on individual municipal maps contained in the document. More information on the specific nature of the various problems can be found in digital form.

## **West**

As noted previously, a major rationale for dividing the County into two study areas was the availability of public sewer service to serve the various municipalities. A secondary issue, not discussed in any detail, was the nature and scope of the sewer network serving each of the study areas (i.e., number of areas utilizing on-lot systems, number of individual municipal sewage treatment authorities, etc.). The western study area is not served by any single regional sewer system. The ages of the various sewer systems, as well as their geographic extent, vary greatly. Many portions of the study area are almost completely unsewered.

Issues associated with the western study area are varied. However, most of the issues are associated with growth and development and the provision of adequate sewage facilities to serve this development. In many of the far northern and western reaches of the County, zoning density and the soil suitability for on-lot systems needs to be balanced with water resources

and the ability to expand or construct new sewer systems to individually or locally serve the needs of expected development.

In light of the need to fully evaluate the nature and extent of the various sewage facilities serving the western study area, the decision was made to map all of the sewer lines (without size limitation), pump stations, and treatment plants. As with the eastern study area, all sewer authority boundaries have been indicated, and attribute tables are attached to the various features. However, in contrast to the eastern study area, the problem areas mapped are those with on-lot septic systems or other related malfunctions. Information associated with the nature of the various problem areas indicated on the map is available in digital form.

### **Access to Municipal Sewage Facility Maps**

Each municipality and sewer authority will receive the following upon request:

- A CD containing a JPEG version of its sewage facilities for distribution to the public, developers, etc.
- A digital (shape file) or paper display copy of the map for updating by the appropriate party (municipality, municipal engineer, etc.)

Please contact DCPD's GIS & Information Services section (610-891-5200) to indicate the format you wish to have. At the same time, you may also request data on sewage facilities in adjacent municipalities for analysis purposes.

For acquisition of the digital parcel layer generated and maintained by the County's Board of Assessments GIS Unit, contact Wendy Much at 610-891-4885, [muchw@co.delaware.pa.us](mailto:muchw@co.delaware.pa.us) or Norma Cairo at 610-891-4793, [cairon@co.delaware.pa.us](mailto:cairon@co.delaware.pa.us). The cost will depend on the density of the linework in the municipality, i.e., the number of megabites per tile. The County's soil layer may be accessed from the following website: <http://mcdc.cas.psu.edu>.

DCPD will be updating the Countywide sewage facilities map approximately every two years. At that time, staff will be requesting a copy of each municipality's current sewage facilities map for inclusion in the Countywide map.



## APPENDIX B

### PUBLIC SEWER INFORMATION SURVEY

1. Do you have any ordinances prohibiting connection of roof drains and/or sump pumps to the sanitary sewer system? Please specify.
2. Does your municipality have an inspection program to check for illegal connection of roof drains/sump pumps to the sanitary sewer system? Please specify.

Would you be interested in participating in such a program(s)?

3. Are you aware of any wildcat sewers or illegal connections to the public sewer system? Please indicate locations of known connection on the enclosed map.
4. What is your method of billing your municipal customers?  
\_\_\_\_ Municipal tax bill (part of the millage)  
\_\_\_\_ Separate sewer bill  
Please specify the method for determining the bill:  
\_\_\_\_ Flat fee per connection or EDU  
\_\_\_\_ Water meter reading  
\_\_\_\_ Other (please specify) \_\_\_\_\_  
\_\_\_\_ Other (please specify) \_\_\_\_\_
5. What do you estimate to be the average cost per customer/EDU?  
\$\_\_\_\_\_ yr./quarter/mo. (please circle correct interval)





## APPENDIX C

### CAPACITY, MANAGEMENT, OPERATION AND MAINTENANCE (CMOM)

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#### 122.42(f) Capacity, Management, Operation and Maintenance Programs for Municipal Sanitary Sewer Systems

- (1) **General Standards** - You, the permittee, must:
  - (i) properly manage, operate and maintain, at all times, all parts of collection system that you own or over which you have operational control;
  - (ii) provide adequately capacity to convey base flows and peak flows for all parts of the collection system you own or have operational control;
  - (iii) take all feasible steps to stop, and mitigate the impact of, sanitary sewer overflows in portions of the collection system you own or have operational control; and
  - (iv) provide notification to parties with a reasonable potential for exposure to pollutants associated with the overflow event.
  - (v) develop a written summary of your CMOM program and make it, and the audit under section (5), available to any member of the public upon request.
- (2) **Management Program** - You must develop a capacity, management, operation and maintenance (CMOM) program to comply with paragraph (1). If you believe that any element of this section is not appropriate or applicable for your CMOM program, your program does not need to address it, but your written summary must explain why that element is not applicable. The Director will consider the quality of the CMOM program, its implementation and effectiveness in any relevant enforcement action, including but not limited to any enforcement action for violation of the prohibition of any municipal sanitary sewer system discharges described at 40 CFR 122.42(g). The program must:
  - (i) **Goals:** Identify with specificity the major goals of your CMOM program, consistent with the general standards identified above.
  - (ii) **Organization:** Identify:
    - (A) administrative and maintenance positions responsible from implementing measures in your CMOM program, including lines of authority by organization chart or similar document; and
    - (B) the chain of communication for reporting SSOs under 122.42(e) from

receipt of a complaint or other information to the person responsible for reporting to the NPDES authority

- (iii) **Legal Authority:** Include legal authority, through sewer use ordinances, service agreements or other legally binding documents, to:
  - (A) Control infiltration and connections from inflow sources;
  - (B) Require that sewers and connections be properly designed and constructed;
  - (C) Ensure proper installation, testing, and inspection of new and rehabilitated sewers (such as new or rehabilitated collector sewers and new or rehabilitated service laterals);
  - (D) Address flows from satellite municipal collection systems; and
  - (E) Implement the general and specific prohibitions of the national pretreatment program that you are subject to under 40 CFR 403.5.
- (iv) **Measures and Activities.** Your CMOM program must address the elements listed below that are appropriate and applicable to your system and identify the person or position in your organization responsible for each element.
  - (A) Maintenance of facilities
  - (B) Maintenance of a map of the collection system
  - (C) Management of information and use of timely , relevant information to establish and prioritize appropriate CMOM activities (such as the immediate elimination of dry weather overflows or overflows into sensitive waters such as public drinking water supplies and their source waters, swimming beaches and waters where swimming occurs, shellfish beds, designated Outstanding National Resource Waters, National Marine Sanctuaries, waters withing federal, state, or local parks, and water containing threatened or endangered species or their habitat), and identify and illustrate trends in overflows.
  - (D) Routine preventive operation and maintenance activities
  - (E) Assessment of the current capacity of the collection system and treatment facilities which you own or over which you have operational control

- (F) Identification and prioritization of structural deficiencies and identifying and implementing short-term and long term rehabilitation actions to address each deficiency
- (G) Appropriate training on a regular basis
- (H) Equipment and replacement parts inventories including identification of critical replacement parts.
- (v) **Design and Performance Provisions:** You must establish:
  - (A) requirements and standards for the installation of new sewers, pumps and other appurtenances; and rehabilitation and repair projects.
  - (B) procedures and specifications for inspecting and testing the installation of new sewers, pumps, and other appurtenances and for rehabilitation and repair projects.
- (vi) **Monitoring, Measurement and Program Modifications.** You must monitor the implementation and, where appropriate measure the effectiveness of each element of your CMOM program. You must update program elements as appropriate based on monitoring or performance evaluations. You must modify the summary of your CMOM program as appropriate to keep it updated and accurate.
- (3) **Overflow Response Plan:** You must develop and implement an overflow response plan that identifies measures to protect public health and the environment by, including but not limited to, mechanisms to:
  - (i) ensure that you are made aware of all overflows (to the greatest extent possible);
  - (ii) ensure that overflows are appropriately responded to, including ensuring that reports of overflows are immediately dispatched to appropriate personnel for investigation and appropriate response;
  - (iii) ensure appropriate reporting pursuant to 40 CFR 122.42(e).
  - (iv) ensure appropriate notification to the public, health agencies, and other impacted entities (e.g. water suppliers) pursuant to 40 CFR 122.42(h). The CMOM should identify the public health and other officials who will receive immediate notification
  - (v) ensure that appropriate personnel are aware of and follow the plan and appropriately trained; and



- (vi) provide emergency operations.
- (4) **System Evaluation and Capacity assurance plan:** You must prepare and implement a plan for system evaluation and capacity assurance if peak flow conditions are contributing to an SSO discharge unless you have either (1) already taken steps to correct the hydraulic deficiency or (2) the discharge meets the criteria of 122.42(g)(2). At a minimum the plan must include:
  - (i) **Evaluation:** Steps to evaluate those portions of the collection system which you own or over which you have operational control which are experiencing or contributing to an SSO discharge caused by hydraulic deficiency or to noncompliance at a treatment plant. The evaluation must provide estimates of peak flows (including flows from SSOs that escape from the system) associated with conditions similar to those causing overflow events, provide estimates of the capacity of key system components, identify hydraulic deficiencies, including components of the system with limiting capacity and identify the major sources that contribute to the peak flows associated with overflow events.
  - (ii) **Capacity Enhancement Measures:** Establish short and long term actions to address each hydraulic deficiency including prioritization, alternative analysis, and a schedule.
  - (iii) **Plan updates:** The plan must be updated to describe any significant change in proposed actions and/or implementation schedule. The plan must also be updated to reflect available information on the performance of measures that have been implemented.
- (5) **CMOM Program Audits -** As part of the NPDES permit application, you must conduct an audit, appropriate to the size of the system and the number of overflows, and submit a report of such audit, evaluating your CMOM and its compliance with this subsection, including its deficiencies and steps to respond to them.
- (6) **Communications:** The permittee should communicate on a regular basis with various interested parties on the implementation and performance of its CMOM program. The communication system should allow interested parties to provide input to the permittee as the CMOM program is developed and implemented.

**APPENDIX D**

**SUMMARY OF INFLOW AND INFILTRATION STUDY REPORTS  
FOR EASTERN DELAWARE COUNTY**

<b>Municipality/Sewer Authority</b>	<b>Report Title</b>	<b>Prepared by</b>	<b>Submittal Date</b>	<b>Notes</b>
Aldan Borough	Infiltration and Inflow Study, Sanitary Sewer System, Aldan Borough, Delaware County, Pennsylvania	Chester Valley Engineers, Inc.	August 1997	
Clifton Heights Borough	Infiltration/Inflow Study for the Clifton Heights Sewer System	Kelly & Associates, Inc.	December 1996	
Collingdale Borough	Inflow and Infiltration Study for Borough of Collingdale	Brandywine Valley Engineers, Inc.	November 1998	
Colwyn Borough	Inflow/Infiltration Study of the Borough of Colwyn Sanitary Sewer System	Remington and Vernick Engineers	March 1997	
Darby Borough	Infiltration/Inflow Study, Borough of Darby	Pennoni Associates, Inc.	April 1997	
Darby Township	1996 Infiltration and Inflow Study for Darby Township	Catania Engineering Associates, Inc.	July 1997	Vol. 1 & 2
Folcroft Borough	1996 Infiltration and Inflow Study for Folcroft Borough	Catania Engineering Associates, Inc.	July 1997	Vol. 1 & 2
Glenolden Borough	1996 Infiltration and Inflow Study for Glenolden Borough	Catania Engineering Associates, Inc.	July 1997	Vol. 1 & 2
Lansdowne Borough	Infiltration/Inflow Study, Borough of Lansdowne	Pennoni Associates, Inc.	March 1997	
Marple Township	Inflow/Infiltration Study of the Marple Township Sanitary Sewer System (Sub-System No. 5)	Remington and Vernick Engineers	April 1997	
Morton Borough	1996 Infiltration and Inflow Study for Morton Borough	Catania Engineering Associates, Inc.	July 1997	Vol. 1 & 2
Nether Providence Township	Borough of Yeaton I/I Reduction Study	NDI Engineering Company	December 1996	Vol. 1 & 2
Norwood Borough	Borough of Yeaton I/I Reduction Study	NDI Engineering Company	December 1996	
Prospect Park Borough	Inflow Infiltration Study of the Borough of Prospect Park Sanitary Sewer System	Remington and Vernick Engineers	April 1997	

**SUMMARY OF INFLOW AND INFILTRATION STUDY REPORTS  
FOR EASTERN DELAWARE COUNTY, PENNSYLVANIA (cont.)**

<b>Municipality/Sewer Authority</b>	<b>Report Title</b>	<b>Prepared by</b>	<b>Submittal Date</b>	<b>Notes</b>
Ridley Park Borough	1996 Infiltration and Inflow Study for Ridley Park Borough	Catania Engineering Associates, Inc.	July 1997	Vol. 1 & 2
Ridley Township	1996 Infiltration and Inflow Study for Ridley Township	Catania Engineering Associates, Inc.	July 1997	Vol. 1, 2A, 2B, & 2C
Rutledge Borough	1996 Infiltration and Inflow Study for Rutledge Borough	Catania Engineering Associates, Inc.	July 1997	Vol. 1 & 2
Sharon Hill Borough	Infiltration/Inflow Study for the Borough of Sharon Hill	H. Gilroy Damon Associates, Inc.	December 1996	
Springfield Township	No study conducted. Active I&I program in place.	DPW	N/A	
Swarthmore Borough	Sanitary System Evaluation for Swarthmore Borough, Pennsylvania	Pennoni Associates, Inc.	September 1994	
Upper Darby Township	Darby and Muckinipates Service Area, Infiltration/Inflow Study and Sewer System Evaluation	Upper Darby Department of Public Works	December 1996	
Yeadon Borough	Borough of Yeadon I/I Reduction Study	NDI Engineering Company	December 1996	
Central Delaware County Authority	Trunk Line Study for Facility Improvements and Inflow and Infiltration Reduction	John P. Damon Associates, Inc.	December 1994	
Muckinipates Authority	Borough of Norwood, Borough of Folcroft, Borough of Glenolden, Borough of Clifton Heights, Township of Ridley, Township of Darby, Township of Upper Darby, Township of Springfield Infiltration/Inflow Study	H. Gilroy Damon Associates, Inc.	February 2000	
Darby Creek Joint Authority	Flow Study, Darby Creek Trunk Line for Darby Creek Joint Authority	John P. Damon Associates, Inc.	May 1993	
Radnor-Haverford-Marple*	Infiltration/Inflow Reduction Program Report	WESTON	Annually	

Note: Radnor-Haverford-Marple I&I reduction progress report is prepared annually.



## DELAWARE COUNTY PLANNING DEPARTMENT

COURT HOUSE/GOVERNMENT CENTER  
201 W. Front St. Media, PA 19063

COUNCIL  
**JOHN J. McFADDEN**  
CHAIRMAN

**TIM MURTAUGH**  
VICE CHAIRMAN

**ANDREW J. REILLY**  
**G. MICHAEL GREEN**  
**LINDA A. CARTISANO**

**Office Location:** Toal Building, 2<sup>nd</sup> & Orange Sts., Media, PA 19063  
Phone: (610) 891-5200 FAX: (610) 891-5203

**JOHN E. PICKETT, AICP**  
DIRECTOR

December 19, 2002

Donna Ulan, Water Quality Specialist  
PA Dept. of Environmental Protection  
Southeast Regional Office  
Lee Park, Suite 6010  
555 North Lane  
Conshohocken, PA 19428

Dear Donna:

Enclosed for your review are two copies of the final Act 573 Sewage Facilities – Eastern Plan of Study. Also enclosed for your information is the required packet of documentation that includes page numbers, municipal resolutions, proof of publication, etc.

If you have any additional questions or need any additional information, please feel free to call me at 610-891-5213.

Very truly yours,

A handwritten signature in cursive script that reads "Karen L. Holm".

**Karen L. Holm, Manager**  
**Environmental Section**





**PART 1 GENERAL INFORMATION****A. Project Information** (See Section A of instructions)

1. Project Name Delaware County Act 537 Sewage Facilities Plan Update - East
2. Brief Project Description Preparation of an Act 537 plan update for the sewerred portions of Delaware County, providing specific recommendations for dealing with known I&I problems in portions of the DELCORA eastern service area.

**B. Client (Municipality) Information** (See Section B of instructions)

Municipality Name	County	City	Boro	Twp
County of Delaware		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Municipality Contact Individual - Last Name	First Name	MI	Suffix	Title
Holm	Karen	L		Mrs.
Additional Individual Last Name	First Name	MI	Suffix	Title
Delaware County Planning Department				
Municipality Mailing Address Line 1	Mailing Address Line 2			
Court House / Government Center	201 West Front Street			
Address Last Line -- City	State	ZIP+4		
Media	PA	19063		
Phone + Ext.	FAX (optional)	Email (optional)		
610-891-5213	610-891-5203	holm@co.delaware.pa.us		

**C. Site Information** (See Section C of instructions)

Site (or Project) Name	(Municipal Name) Act 537 Plan
Refer to attached list of municipalities	
Site Location Line 1	Site Location Line 2

**D. Project Consultant Information** (See Section D of instructions)

Last Name	First Name	MI	Suffix
Holm	Karen	L	Mrs.
Title	Consulting Firm Name		
Manager, Environmental Section	Delaware County Planning Department		
Mailing Address Line 1	Mailing Address Line 2		
Court House / Government Center	201 West Front Street		
Address Last Line -- City	State	ZIP+4	Country
Media	PA	19063	USA
Email	Phone	Ext.	FAX
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**PART 2 ADMINISTRATIVE COMPLETENESS CHECKLIST**

DEP Use Only	Indicate Page #(s) in Plan	In addition to the main body of the plan, the plan must include items one through eight listed below to be accepted for formal review by the department. Incomplete Plans will be returned unless the municipality is clearly requesting an advisory review.
_____	<u>i-vii</u>	1. Table of Contents
_____	<u>A</u>	2. Plan Summary
_____	<u>A</u>	A. Identify the proposed service areas and major problems evaluated in the plan. (Reference - Title 25, §71.21.a.7.i).
_____	<u>A</u>	B. Identify the alternative(s) chosen to solve the problems and serve the areas of need identified in the plan. Also, include any institutional arrangements necessary to implement the chosen alternative(s). (Reference Title 25 §71.21.a.7.ii).
_____	<u>A</u>	C. Present the estimated cost of implementing the proposed alternative (including the user fees) and the proposed funding method to be used. (Reference Title 25, §71.21.a.7.ii).
_____	<u>A</u>	D. Identify the municipal commitments necessary to implement the Plan. (Reference Title 25, §71.21.a.7.iii).
_____	<u>A</u>	E. Provide a schedule of implementation for the project which identifies the MAJOR milestones with dates necessary to accomplish the project to the point of operational status. (Reference Title 25, §71.21.a.7.iv).
_____	<u>E</u>	3. <u>Original</u> , signed and sealed Resolution of Adoption by the municipality which contains, at a minimum, alternatives chosen and a commitment to implement the Plan in accordance with the implementation schedule. (Reference Title 25, §71.31.f) Section V.F. of the Planning Guide.
_____	<u>E</u>	4. Evidence that the municipality has requested, reviewed and considered comments by appropriate official planning agencies of the municipality, planning agencies of the county, planning agencies with areawide jurisdiction (where applicable), and any existing county or joint county departments of health. (Reference-Title 25, §71.31.b) Section V.E.1 of the Planning Guide.
_____	<u>E</u>	5. Proof of Public Notice which documents the proposed plan adoption, plan summary, and the establishment and conduct of a 30 day comment period. (Reference-Title 25, §71.31.c) Section V.E.2 of the Planning Guide.
_____	<u>E</u>	6. Copies of ALL written comments received and municipal response to EACH comment in relation to the proposed plan. (Reference-Title 25, §71.31.c) Section V.E.2 of the Planning Guide.
_____	<u>A</u> p. 5-6	7. A complete project implementation schedule with milestone dates specific for each existing and future area of need. Other activities in the project implementation schedule should be indicated as occurring a finite number of days from a major milestone. (Reference-Title 25, §71.31.d) Section F of the Planning Guide. Include dates for the future initiation of feasibility evaluations in the project's implementation schedule for areas proposing completion of sewage facilities for planning periods in excess of five years. (Reference Title 25, §71.21.b).
_____	<u>NA</u>	8. Documentation indicating that the appropriate agencies have received, reviewed and concurred with the method proposed to resolve identified inconsistencies within the proposed alternative and consistency requirements in 71.21.(a)(5)(i-iii). (Reference-Title 25, §71.31.e). Appendix B of the Planning Guide. (Refer to Item 4 above)

A - Attachment  
E - Enclosed

**PART 3 GENERAL PLAN CONTENT CHECKLIST**

DEP Use Only	Indicate Page #(s) in Plan	Item Required
_____	<u>Ch. 5</u>	<b>I. Previous Wastewater Planning</b>
_____	<u>5-1-11</u>	A. Identify and briefly analyze all existing wastewater planning that:
_____	<u>5-1-11</u>	1. Has been previously undertaken under the Sewage Facilities Act (Act 537). (Reference-Act 537, Section 5 §d.1).
_____	<u>5-1-11</u>	2. Has not been carried out according to an approved implementation schedule contained in the plans. (Reference-Title 25, §71.21.a.5.i.A-D). Section V.F of the Planning Guide.
_____	<u>5-1-11</u>	3. Is anticipated or planned by applicable sewer authorities. (Reference-Title 25, §71.21.a.5.i.A). Section V.D. of the Planning Guide.
_____	<u>NA</u>	4. Has been done through planning modules for new land development, planning "exemptions" and addenda. (Reference-Title 25, §71.21.a.5.i.A).
_____	<u>5-11-16</u>	B. Identify and briefly summarize all municipal and county planning documents adopted pursuant to the Pennsylvania Municipalities Planning Code (Act 247) including:
_____	<u>5-11-16</u>	1. All land use plans and zoning maps which identify residential, commercial, industrial, agricultural, recreational and open space areas. (Reference-Title 25, §71.21.a.3.iv).
_____	<u>NA</u>	2. Zoning or subdivision regulations that establish lot sizes predicated on sewage disposal methods. (Reference-Title 25 §71.21.a.3.iv).
_____	<u>NA</u>	3. All limitations and plans related to floodplain and stormwater management and special protection (Ch. 93) areas. (Reference-Title 25 §71.21.a.3.iv) Appendix B, Section II.F of the Planning Guide.
_____	<u>1-11-19</u>	<b>II. Physical and Demographic Analysis utilizing written description and mapping</b> (All items listed below require maps, and all maps should show all current lots and structures and be of appropriate scale to clearly show significant information).
_____	<u>NA</u>	A. Identification of planning area(s), municipal boundaries, Sewer Authority/Management Agency service area boundaries. (Reference-Title 25, §71.21.a.1.i).
_____	<u>4-3</u>	B. Identification of physical characteristics (streams, lakes, impoundments, natural conveyance, channels, drainage basins in the planning area). (Reference-Title 25, §71.21.a.1.ii).
_____	<u>4-5</u>	C. Soils - Analysis with description by soil type and soils mapping. Show areas suitable for in-ground onlot systems, elevated sand mounds, individual residential spray irrigation systems, and areas unsuitable for soil dependent systems. (Reference-Title 25, §71.21.a.1.iii). Show Prime Agricultural Soils and any locally protected agricultural soils. (Reference-Title 25, §71.21.a.1.iii).
_____	<u>4-5</u>	D. Geologic Features - (1) Identification through analysis, (2) mapping and (3) their relation to existing or potential nitrate-nitrogen pollution and drinking water sources. Include areas where existing nitrate-nitrogen levels are in excess of five mg/l. (Reference-Title 25, §71.21.a.1.iii).

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_____	<u>4-4</u>	E. Topography - Depict slopes that are suitable for conventional systems; slopes that are suitable for elevated sand mounds; slopes that are unsuitable for on-lot systems. (Reference-Title 25, §71.21.a.1.ii).
_____	<u>4-5</u>	F. Potable Water Supplies - Identification through mapping, description and analysis to include available public water supply capacity and aquifer yield for groundwater supplies. (Reference-Title 25 §71.21.a.1.vi). Section V.C. of the Planning Guide.
_____	<u>4-4</u>	G. Wetlands-Identify wetlands as defined in Title 25, Chapter 105 by description, analysis and mapping. Include National Wetland Inventory mapping and potential wetland areas per USDA, SCS mapped hydric soils. Proposed collection, conveyance and treatment facilities and lines must be located and labeled, along with the identified wetlands, on the map. (Reference-Title 25, §71.21.a.1.v). Appendix B, Section II.I of the Planning Guide.
<b>III. Existing Sewage Facilities in the Planning Area - Identifying the Existing Needs</b>		
A. Identify, map and describe municipal and non-municipal, individual and community sewerage systems in the planning area including:		
_____	<u>3-1-17</u>	1. Location, size and ownership of treatment facilities, main intercepting lines, pumping stations and force mains including their size, capacity, point of discharge. Also include the name of the receiving stream, drainage basin, and the facility's effluent discharge requirements. (Reference-Title 25, §71.21a.2.i.A).
_____	<u>NA</u>	2. A narrative and schematic diagram of the facility's basic treatment processes including the facility's NPDES permitted capacity, and the Clean Streams Law permit number. (Reference-Title 25, §71.21.a.2.i).
_____	<u>3-18-30</u>	3. A description of problems with existing facilities (collection, conveyance and/or treatment), including existing or projected overload under Title 25, Chapter 94 (relating to municipal wasteload management) or violations of the NPDES permit, Clean Streams Law permit, or other permit, rule or regulation of the department. (Reference-Title 25, §71.21.a.2.i.B).
_____	<u>3-1-17</u>	4. Details of scheduled or in-progress upgrading or expansion of treatment facilities and the anticipated completion date of the improvements. Discuss any remaining reserve capacity and the policy concerning the allocation of reserve capacity. Also discuss the compatibility of the rate of growth to existing and proposed wastewater treatment facilities. (Reference-Title 25, §71.21.a.4.i & ii).
_____	<u>4-1-2</u>	5. A detailed description of operation and maintenance requirements of the municipality for on-lot systems and the status of past and present compliance with these requirements and any other requirements relating to sewage management programs. (Reference-Title 25, §71.21.a.2.i.C).
_____	<u>4-5-6</u>	6. Disposal areas, if other than stream discharge, and any applicable groundwater limitations. (Reference-Title 25, §71.21.a.4.i & ii).



DEP Use Only	Indicate Page #(s) in Plan	Item Required
		B. Using DEP's manual titled <i>Sewage Disposal Needs Identification</i> , identify, map and describe areas that utilize individual and community onlot sewage disposal and, unpermitted collection and disposal systems ("wildcat" sewers, borehole disposal, etc.) and retaining tank systems in the planning area including:
_____	<u>NA</u>	1. The types of systems in use. (Reference-Title 25, §71.21.a.2.ii.A).
_____	<u>3-18-29</u>	2. A sanitary survey complete with a description of documented and potential public health pollution, and operational problems (including malfunctioning systems) with the systems, including violations of local ordinances, the Sewage Facilities Act, the Clean Stream Law or regulations promulgated thereunder. (Reference-Title 25, §71.21.a.2.ii.B).
_____	<u>NA</u>	3. A comparison of the types of on-lot sewage systems installed in an area with the types of systems which are appropriate for the area according to soil, geologic conditions, topographic limitations sewage flows, and Title 25 Chapter 73 (relating to standards for sewage disposal facilities). (Reference-Title 25, §71.21.a.2.ii.C).
_____	<u>NA</u>	4. An individual water supply survey to identify possible contamination by malfunctioning on-lot sewage disposal systems consistent with DEP's <i>Sewage Disposal Needs Identification</i> manual. (Reference-Title 25 §71.21.a.2.ii.B).
		C. Identify <del>wastewater</del> <b>sewage</b> sludge and septage generation, transport and disposal methods. <del>Include this information in the sewage facilities alternative analysis including:</del>
_____	<u>3-3</u>	1. Location of sources of wastewater sludge or septage (Septic tanks, holding tanks, wastewater treatment facilities). (Reference-Title 25 §71.71).
_____	<u>3-16</u>	2. Quantities of the types of sludges or septage generated. (Reference-Title 25 §71.71).
_____	<u>3-18</u>	3. Present disposal methods, locations, capacities and transportation methods. (Reference-Title 25 §71.71).
_____	<u>same</u>	
_____	<u>NA</u>	
		IV. <b>Future Growth and Land Development</b>
		A. Delineate and describe the following through map, text and analysis:
_____	<u>NA</u>	1. <del>Areas with existing development or plotted subdivisions. Include the name, location, description, total number of EDU's in development, total number of EDU's currently developed and total number of EDUs remaining to be developed (include time schedule for EDU's remaining to be developed).</del> (Reference-Title 25, §71.21.a.3.i).
_____	<u>5-11-16</u>	2. Land use designations established under the Pennsylvania Municipalities Planning Code (35 P.S. 10101-11202), including <del>residential</del> , commercial and industrial areas. (Reference-Title 25, §71.21.a.3.ii). Include a comparison of proposed land use as allowed by zoning and existing sewage facility planning. (Reference-Title 25, §71.21.a.3.iv).
_____	<u>2-1-9</u>	3. Future growth areas with population and EDU projections for these areas using historical, current and future population figures and projections of the municipality. Discuss and evaluate discrepancies between local, county, state and federal projections as they relate to sewage facilities. (Reference-Title 25, §71.21.a.1.iv). (Reference-Title 25, §71.21.a.3.iii).

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_____	<u>NA</u>	4. Zoning, and/or subdivision regulations; local, county or regional comprehensive plans; and existing plans of a Commonwealth agency relating to the development, use and protection of land and water resources with special attention to: (Reference-Title 25, §71.21.a.3.iv). --public ground/surface water supplies --recreational water use areas --groundwater recharge areas --industrial water use --wetlands
_____	<u>5-10</u> <u>5-16</u>	5. Sewage planning to provide adequate wastewater treatment for the municipality. This planning must be related to both the five and ten year future planning periods and be based on growth impacts on existing and proposed wastewater collection and treatment facilities. (Reference-Title 25, §71.21.a.3.v).
<b>V. Identify Alternatives to Provide New or Improved Wastewater Disposal Facilities</b>		
<b>A. Conventional collection, conveyance, treatment and discharge alternatives including:</b>		
_____	<u>6-1-16</u>	1. The potential for regional wastewater treatment. (Reference-Title 25, §71.21.a.4).
_____	<u>same</u>	2. The potential for extension of existing municipal or non-municipal sewage facilities to areas in need of new or improved sewage facilities. (Reference-Title 25, §71.21.a.4.i).
_____	<u>same</u>	3. The potential for the continued use of existing municipal or non-municipal sewage facilities through one or more of the following: (Reference-Title 25, §71.21.a.4.ii).
_____	<u>same</u>	a. Repair. (Reference-Title 25, §71.21.a.4.ii.A).
_____	<u>same</u>	b. Upgrading. (Reference-Title 25, §71.21.a.4.ii.B).
_____	<u>same</u>	c. Reduction of hydraulic or organic loading to existing facilities. (Reference-Title 25, §71.71).
_____	<u>same</u>	d. Improved operation and maintenance. (Reference-Title 25, §71.21.a.4.ii.C).
_____	<u>same</u>	e. Other applicable actions that will resolve or abate the identified problems. (Reference-Title 25, §71.21.a.4.ii.D).
_____	<u>same</u>	4. The need for construction of new community sewage systems including sewer systems and/or treatment facilities. (Reference-Title 25, §71.21.a.4.iii).
_____	<u>same</u>	5. Repair or replacement of collection and conveyance system components. (Reference-Title 25, §71.21.a.4.ii.A).
_____	<u>same</u>	6. Use of innovative/alternative methods of collection/conveyance to serve needs areas using existing wastewater treatment facilities. (Reference-Title 25, §71.21.a.4.ii.B).

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		B. The use of individual sewage disposal systems including individual residential spray irrigation systems based on:
_____	<u>NA</u>	1. Soil and slope suitability. (Reference-Title 25, §71.21.a.2.ii.C).
_____	<u>NA</u>	2. Preliminary hydrogeologic evaluation. (Reference-Title 25, §71.21.a.2.ii.C).
_____	<u>NA</u>	3. The establishment of a sewage management program. (Reference-Title 25, §71.21.a.4.iv). See also Part "F" below.
		4. The repair, replacement or upgrading of existing malfunctioning systems in areas suitable for onlot disposal considering: (Reference-Title 25, §71.21.a.4).
_____	<u>NA</u>	a. Existing technology and sizing requirements of Title 25 Chapter 73. (Reference-Title 25, §73.31-73.72).
_____	<u>NA</u>	b. Use of expanded absorption areas or alternating absorption areas. (Reference-Title 25, §73.16).
_____	<u>NA</u>	c. Use of water conservation devices. (Reference-Title 25, §71.73.b.2.iii).
		C. The use of small flow sewage treatment facilities or package treatment facilities to serve individual homes or clusters of homes based on: (Reference-Title 25, §71.64.d).
_____	<u>NA</u>	1. Treatment and discharge requirements. (Reference-Title 25, §71.64.d).
_____	<u>NA</u>	2. Soil suitability. (Reference-Title 25, §71.64.c.i).
_____	<u>NA</u>	3. Preliminary hydrogeologic evaluation. (Reference-Title 25, §71.64.c.2).
_____	<u>NA</u>	4. Agency or other controls over operation and maintenance requirements. (Reference-Title 25, §71.64.d). See Part "F" below.
		D. The use of community land disposal alternatives including:
_____	<u>NA</u>	1. Soil and site suitability. (Reference-Title 25, 71.21.a.2.ii.C).
_____	<u>NA</u>	2. Preliminary hydrogeologic evaluation. (Reference-Title 25, 71.21.a.2.ii.C).
_____	<u>NA</u>	3. Controls over operation and maintenance requirements through a Sewage Management Program (Reference-Title 25, 71.21.a.2.ii.C). See Part "F" below.
_____	<u>NA</u>	4. The rehabilitation or replacement of existing malfunctioning community land disposal systems. (See Part V, B, 4, a, b, c above). See also Part "F" below.
		E. The use of retaining tank alternatives on a temporary or permanent basis including: (Reference-Title 25, §71.21.a.4).
_____	<u>NA</u>	1. Commercial, residential and industrial use. (Reference-Title 25, §71.63.e).
_____	<u>NA</u>	2. Designated conveyance facilities (pumper trucks). (Reference-Title 25, §71.63.b.2).
_____	<u>NA</u>	3. Designated treatment facilities or disposal site. (Reference-Title 25, 71.63.b.2).
_____	<u>NA</u>	4. Implementation of a retaining tank ordinance by the municipality. (Reference-Title 25, §71.63.b.2). See Part "F" below.

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_____	<u>NA</u>	5. Financial guarantees when retaining tanks are used as an interim sewage disposal measure. (Reference-Title 25, §71.63.c.2).
_____	<u>NA</u>	F. Sewage management programs to assure the future operation and maintenance of existing and proposed sewage facilities through: <ol style="list-style-type: none"> <li>1. Municipal ownership or control over the operation and maintenance of individual onlot sewage disposal systems, small flow treatment facilities, or other traditionally non-municipal treatment facilities. (Reference-Title 25, §71.21.a.4.iv).</li> <li>2. Required inspection of sewage disposal systems on a schedule established by the municipality. (Reference-Title 25, §71.73.b.1.).</li> <li>3. Required maintenance of sewage disposal systems including septic and aerobic treatment tanks and other system components on a schedule established by the municipality. (Reference-Title 25, §71.73.b.2).</li> <li>4. Repair, replacement or upgrading of malfunctioning onlot sewage systems. (Reference-Title 25, §71.21.a.4.iv) through: <ol style="list-style-type: none"> <li>a. Aggressive pro-active enforcement of ordinances which require operation and maintenance and prohibit malfunctioning systems. (Reference-Title 25, §71.73.b.5).</li> <li>b. Public education programs to encourage proper operation and maintenance and repair of sewage disposal systems.</li> </ol> </li> <li>5. Establishment of joint municipal sewage management programs. (Reference-Title 25, §71.73.b.8).</li> <li>6. Requirements for bonding, escrow accounts, management agencies or associations to assure operation and maintenance for non-municipal facilities. (Reference-Title 25, §71.71).</li> </ol>
_____	<u>NA</u>	G. Non-structural comprehensive planning alternatives that can be undertaken to assist in meeting existing and future sewage disposal needs including: (Reference-Title 25, §71.21.a.4).
_____	<u>NA</u>	1. Modification of existing comprehensive plans involving: <ol style="list-style-type: none"> <li>a. Land use designations. (Reference-Title 25, §71.21.a.4).</li> <li>b. Densities. (Reference-Title 25, §71.21.a.4).</li> <li>c. Municipal ordinances and regulations. (Reference-Title 25, §71.21.a.4).</li> <li>d. Improved enforcement. (Reference-Title 25, §71.21.a.4).</li> <li>e. Protection of drinking water sources. (Reference-Title 25, §71.21.a.4).</li> </ol>
_____	<u>6 - 8</u>	2. Consideration of a local comprehensive plan to assist in producing sound economic and consistent land development. (Reference-Title 25, §71.21.a.4).
_____	<u>NA</u>	3. Alternatives for creating or changing municipal subdivision regulations to assure long-term use of on-site sewage disposal which consider lot sizes and protection of replacement areas. (Reference-Title 25, §71.21.a.4).
_____	<u>NA</u>	4. Evaluation of existing local agency programs and the need for technical or administrative training. (Reference-Title 25, §71.21.a.4).



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_____	<u>6-3-4</u>	H. A no-action alternative which includes discussion of both short-term and long-term impacts on: (Reference-Title 25, §71.21.a.4).
_____	<u>6-4</u>	1. Water Quality/Public Health. (Reference-Title 25, §71.21.a.4).
_____	<u>NA</u>	2. Growth potential (residential, commercial, industrial). (Reference-Title 25, §71.21.a.4).
_____	<u>NA</u>	3. Community economic conditions. (Reference-Title 25, §71.21.a.4).
_____	<u>NA</u>	4. Recreational opportunities. (Reference-Title 25, §71.21.a.4).
_____	<u>NA</u>	5. Drinking water sources. (Reference-Title 25, §71.21.a.4).
_____	<u>NA</u>	6. Other environmental concerns. (Reference-Title 25, §71.21.a.4).
<b>VI. Evaluation of Alternatives</b>		
		A. Technically feasible alternatives identified in Section V of this check-list must be evaluated for consistency with respect to the following: (Reference-Title 25, §71.21.a.5.i.A).
_____	<u>NA</u>	1. Applicable plans developed and approved under Sections 4 and 5 of the Clean Streams Law or Section 208 of the Clean Water Act (33 U.S.C.A. 1288). (Reference-Title 25, §71.21.a.5.i.A). Appendix B, Section II.A of the Planning Guide.
_____	<u>Ch. 33</u>	2. Municipal wasteload management plans developed under PA Code, Title 25, Chapter 94. (Reference-Title 25, §71.21.a.5.i.B). The municipality's recent Wasteload Management (Chapter 94) Reports should be examined to determine if the proposed alternative is consistent with the recommendations and findings of the report. Appendix B, Section II.B of the Planning Guide.
_____	<u>NA</u>	3. Plans developed under Title II of the Clean Water Act (33 U.S.C.A. 1281-1299) or Titles II and VI of the Water Quality Act of 1987 (33 U.S.C.A. 1251-1376). (Reference-Title 25, §71.21.a.5.i.C). Appendix B, Section II.E of the Planning Guide.
_____	<u>5-11-16</u>	4. Comprehensive plans developed under the Pennsylvania Municipalities Planning Code. (Reference-Title 25, §71.21.a.5.i.D). The municipality's comprehensive plan must be examined to assure that the proposed wastewater disposal alternative is consistent with land use and all other requirements stated in the comprehensive plan. Appendix B, Section II.D of the Planning Guide.
_____	<u>NA</u>	5. Antidegradation requirements as contained in PA Code, Title 25, Chapters 93, 95 and 102 (relating to water quality standards, wastewater treatment requirements and erosion control) and the Clean Water Act. (Reference-Title 25, §71.21.a.5.i.E). Appendix B, Section II.F of the Planning Guide.
_____	<u>NA</u>	6. State Water Plans developed under the Water Resources Planning Act (42 U.S.C.A. 1962-1962 d-18). (Reference-Title 25, §71.21.a.5.i.F). Appendix B, Section II.C of the Planning Guide.
_____	<u>NA</u>	7. Pennsylvania Prime Agricultural Land Policy contained in Title 4 of the Pennsylvania Code, Chapter 7, Subchapter W. Provide narrative on local municipal policy and an overlay map on prime agricultural soils. (Reference-Title 25, §71.21.a.5.i.G). Appendix B, Section II.G of the Planning Guide.

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_____	<u>NA</u>	8. County Stormwater Management Plans approved by DEP under the Storm Water Management Act (32 P.S. 680.1-680.17). (Reference-Title 25, §71.21.a.5.i.H). Conflicts created by the implementation of the proposed wastewater alternative and the existing recommendations for the management of stormwater in the county Stormwater Management Plan must be evaluated and mitigated. If no plan exists, no conflict exists. Appendix B, Section II.H of the Planning Guide.
_____	<u>NA</u>	9. Using wetland mapping developed under Section II.A.7, identify and discuss mitigative measures including the need to obtain permits for any encroachments on wetlands from the construction or operation of any proposed wastewater facilities. Appendix B, Section II.I of the Planning Guide.
_____	<u>NA</u>	10. Protection of rare, endangered or threatened plant and animal species as identified by the Pennsylvania Natural Diversity Inventory (PNDI). (Reference-Title 25, §71.21.a.5.i.J). Provide the department with a copy of the completed Request For PNDI Search document. Also provide a copy of the response letter from the Department of Conservation and Natural Resources' Bureau of Forestry regarding the findings of the PNDI search. Appendix B, II.J.
_____	<u>NA</u>	11. Historical and archaeological resource protection under P.C.S. Title 37, Section 507 relating to cooperation by public officials with the Pennsylvania Historical and Museum Commission. (Reference-Title 25, §71.21.a.5.i.K). Provide the department with a completed copy of a Cultural Resource Notice request to the Bureau of Historic Preservation (BHP) to provide a listing of known historical sites and potential impacts on known archaeological and historical sites. Also provide a copy of the response letter from the BHP. Appendix B, Section II.K of the Planning Guide.
_____	<u>NA</u>	B. Provide for the resolution of any inconsistencies in any of the points identified in Section VI.A. of this checklist by submitting a letter from the appropriate agency stating that the agency has received, reviewed and concurred with the resolution of identified inconsistencies. (Reference-Title 25, §71.21.a.5.ii). Appendix B of the Planning Guide.
_____	<u>NA</u>	C. Evaluate alternatives identified in Section V of this checklist with respect to applicable water quality standards, effluent limitations or other technical, legislative or legal requirements. (Reference-Title 25, §71.21.a.5.iii).
_____	<u>6-9-15</u>	D. Provide cost estimates using present worth analysis for construction, financing, on going administration, operation and maintenance and user fees for alternatives identified in Section V of this checklist. Estimates shall be limited to areas identified in the plan as needing improved sewage facilities within five years from the date of plan submission. (Reference-Title 25, §71.21.a.5.iv).
_____	<u>Ch. 7</u>	E. Provide an analysis of the funding methods available to finance the proposed alternatives evaluated in Section V of this checklist. Also provide documentation to demonstrate which alternative and financing scheme combination is the most cost-effective; and a contingency financial plan to be used if the preferred method of financing cannot be implemented. The funding analysis shall be limited to areas identified in the plan as needing improved sewage facilities within five years from the date of the plan submission. (Reference-Title 25, §71.21.a.5.v).

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		F. Analyze the need for immediate or phased implementation of each alternative proposed in Section V of this checklist including: (Reference-Title 25, §71.21.a.5.vi).
_____	<u>NA</u>	1. A description of any activities necessary to abate critical public health hazards pending completion of sewage facilities or implementation of sewage management programs. (Reference-Title 25, §71.21.a.5.vi.A).
_____	<u>Ch. 7</u>	
_____	<u>Ch. 8</u>	2. A description of the advantages, if any, in phasing construction of the facilities, or implementation of a sewage management program justifying time schedules for each phase. (Reference-Title 25, §71.21.a.5.vi.B).
_____	<u>Ch. 7</u>	
_____	<u>Ch. 8</u>	G. Evaluate administrative organizations and legal authority necessary for plan implementation. (Reference - Title 25, §71.21.a.5.vi.D.).
<b>VII. Institutional Evaluation</b>		
		A. Provide an analysis of all existing wastewater treatment authorities, their past actions and present performance including:
_____	<u>NA</u>	1. Financial and debt status. (Reference-Title 25, §71.61.d.2).
_____	<u>NA</u>	2. Available staff and administrative resources. (Reference-Title 25, §71.61.d.2).
_____	<u>6-15, Ch. 7+8</u>	3. Existing legal authority to:
_____	<u>same</u>	a. Implement wastewater planning recommendations. (Reference-Title 25, §71.61.d.2).
_____	<u>same</u>	b. Implement system-wide operation and maintenance activities. (Reference-Title 25, §71.61.d.2).
_____	<u>same</u>	c. Set user fees and take purchasing actions. (Reference-Title 25, §71.61.d.2).
_____	<u>same</u>	d. Take enforcement actions against ordinance violators. (Reference-Title 25, §71.61.d.2).
_____	<u>same</u>	e. Negotiate agreements with other parties. (Reference-Title 25, §71.61.d.2).
_____	<u>same</u>	f. Raise capital for construction and operation and maintenance of facilities. (Reference-Title 25, §71.61.d.2).
		B. Provide an analysis and description of the various institutional alternatives necessary to implement the proposed technical alternatives including:
_____	<u>Ch. 7</u>	1. Need for new municipal departments or municipal authorities. (Reference-Title 25, §71.61.d.2).
_____	<u>Ch. 7</u>	2. Functions of existing and proposed organizations (sewer authorities, onlot maintenance agencies, etc.). (Reference-Title 25, §71.61.d.2).
_____	<u>Ch. 8</u>	3. Cost of administration, implementability, and the capability of the authority/agency to react to future needs. (Reference-Title 25, §71.61.d.2).
		C. Describe all necessary administrative and legal activities to be completed and adopted to ensure the implementation of the recommended alternative including:
_____	<u>Ch. 8</u>	1. Incorporation of authorities or agencies. (Reference-Title 25, §71.61.d.2).
_____	<u>Ch. 8</u>	2. Development of all required ordinances, regulations, standards and inter-municipal agreements. (Reference-Title 25, §71.61.d.2).

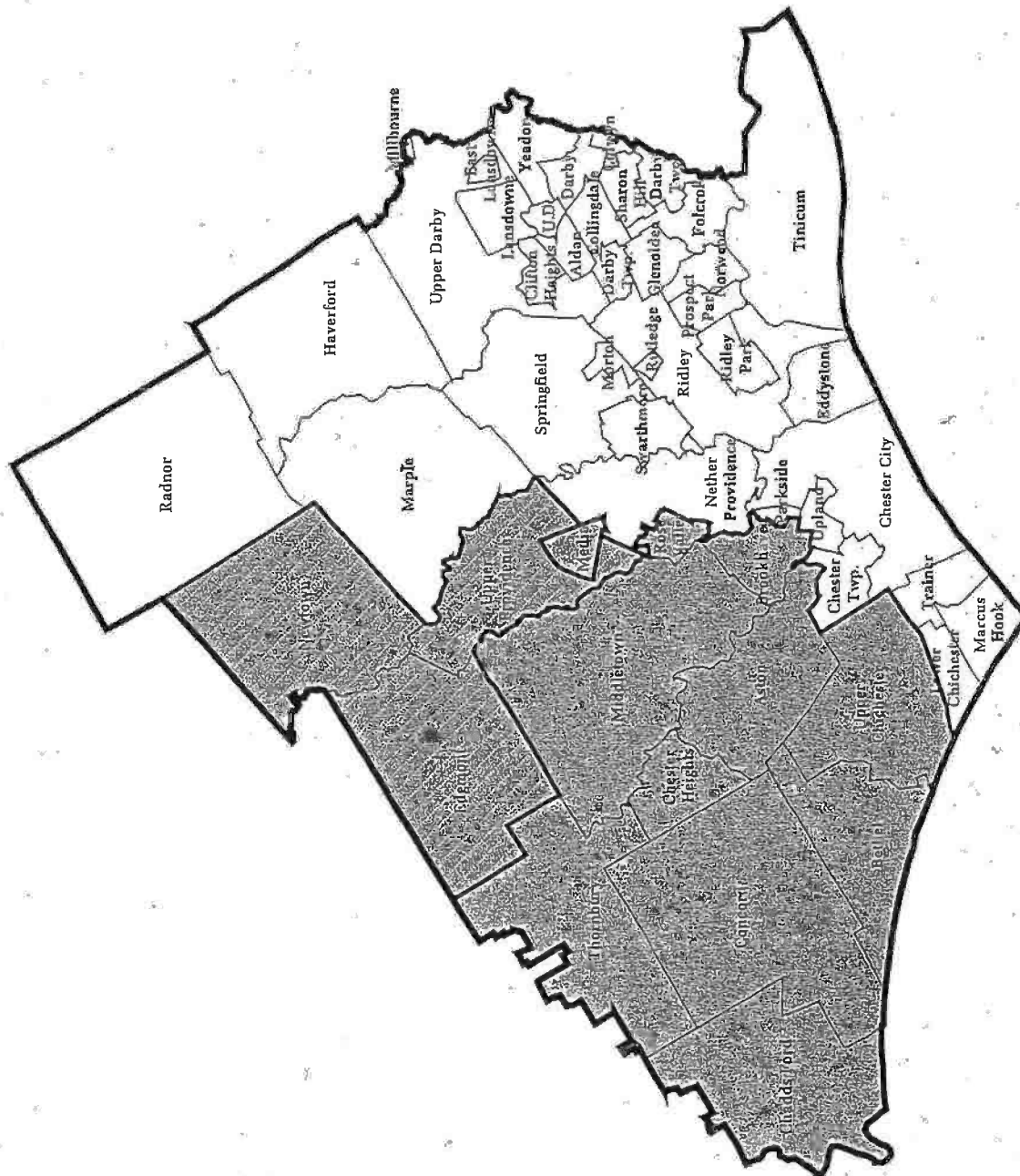
DEP Use Only	Indicate Page #(s) in Plan	Item Required
_____	<u>NA</u>	3. Description of activities to provide rights-of-way, easements and land transfers. (Reference-Title 25, §71.61.d.2).
_____	<u>NA</u>	4. Adoption of other municipal sewage facilities plans. (Reference-Title 25, §71.61.d.2).
_____	<u>NA</u>	5. Any other legal documents. (Reference-Title 25, §71.61.d.2).
_____	<u>Ch. 9</u>	6. Dates or timeframes for items 1-5 above on the project's implementation schedule.
		D. Identify the proposed institutional alternative for implementing the chosen technical wastewater disposal alternative. Provide justification for choosing the specific institutional alternative considering administrative issues, organizational needs and enabling legal authority. (Reference-Title 25, §71.61.d.2).
<b>VIII. Justification for Selected Technical &amp; Institutional Alternatives</b>		
		A. Identify the technical wastewater disposal alternative which best meets the wastewater treatment needs of each study area of the municipality. Justify the choice by providing documentation which shows that it is the best alternative based on:
_____	<u>5-16</u>	1. Existing wastewater disposal needs. (Reference-Title 25, §71.21.a.6).
_____	<u>Ch. 3</u>	2. Future wastewater disposal needs. (five and ten years growth areas). (Reference-Title 25, §71.21.a.6).
_____	<u>Ch. 6</u>	3. Operation and maintenance considerations. (Reference-Title 25, §71.21.a.6).
_____	<u>5-16</u>	4. Cost-effectiveness. (Reference-Title 25, §71.21.a.6).
_____	<u>NA</u>	5. Available management and administrative systems. (Reference-Title 25, §71.21.a.6).
_____	<u>6-9-15</u>	6. Available financing methods. (Reference-Title 25, §71.21.a.6).
_____	<u>Ch. 7</u>	7. Environmental soundness and compliance with natural resource planning and preservation programs. (Reference-Title 25, §71.21.a.6).
_____	<u>Ch. 7</u>	
_____	<u>NA</u>	
_____	<u>NA</u>	B. Designate and describe the capital financing plan chosen to implement the selected alternative(s). Designate and describe the chosen back-up financing plan.

C. Site Information (municipalities covered under the plan)

1. Aldan Borough
2. Chester City
3. Chester Township
4. Clifton Heights Borough
5. Collingdale Borough
6. Colwyn Borough
7. Darby Borough
8. Darby Township
9. East Lansdowne Borough
10. Eddystone Borough
11. Folcroft Borough
12. Glenolden Borough
13. Haverford Township
14. Lansdowne Borough
15. Lower Chichester Township
16. Marcus Hook Borough
17. Marple Township
18. Millbourne Borough
19. Morton Borough
20. Nether Providence Township
21. Norwood Borough
22. Parkside Borough
23. Prospect Park Borough
24. Radnor Township
25. Ridley Township
26. Ridley Park Borough
27. Rutledge Borough
28. Sharon Hill Borough
29. Springfield Township
30. Swarthmore Borough
31. Tinicum Township
32. Trainer Borough
33. Upland Borough
34. Upper Darby Township
35. Yeadon Borough



# Map 1-5



### Legend

	Eastern Project Area	Western Project Area	Fringe Project Area
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Projection: UTM  
Datum: NAD83  
Units: Meters

Source:  
U.S. Department of  
Commerce, Bureau of  
the Census, Tiger Line  
Files, 2000 - County and  
Municipal Boundaries

ATTACHMENT

## Plan Summary

- A. The proposed service areas covered by the plan include the following municipalities in Delaware County:

Aldan Borough*	Morton Borough*
Chester City	Nether Providence Township*
Chester Township	Norwood Borough*
Clifton Heights Borough*	Parkside Borough
Collingdale Borough*	Prospect Park Borough*
Colwyn Borough*	Radnor Township
Darby Borough*	Ridley Township*
Darby Township*	Ridley Park Borough*
East Lansdowne Borough	Rutledge Borough*
Eddystone Borough	Sharon Hill Borough*
Folcroft Borough*	Springfield Township*
Glenolden Borough*	Swarthmore Borough*
Haverford Township	Tinicum Township
Lansdowne Borough*	Trainer Borough
Lower Chichester Township	Upland Borough
Marcus Hook Borough	Upper Darby Township*
Marple Township*	Yeadon Borough*
Millbourne Borough	

The major problem evaluated in the plan was the condition of the existing sewage facilities in the study area and the best mechanism to ensure long-term environmentally sound sewer service and capacity to serve the future needs of the study area. Particular emphasis was placed on development and implementation of needed corrective actions identified in the infiltration and inflow I&I studies prepared for the municipalities and tributary authorities that fall within the DELCORA Eastern Service Area (noted with a \*). Tributary authorities include Central Delaware County Authority, Darby Creek Joint Authority, Muckinipates Authority, and RHM Authority.

- B. The identified alternatives chosen to solve the problems and serve the area of need identified in the plan are as follows:

### DELCORA EASTERN SERVICE AREA

Since DELCORA serves as a conveyance authority in this portion of the eastern study area, the following recommended alternatives are geared toward activities and/or programs to be undertaken by the tributary authorities (DCJA, CDCA, MA, RHM) and the municipalities. When

appropriate, recommendations have also been made regarding activities and programs to be implemented by DELCORA.

#### Designated Alternative(s)

##### DELCORA

- Provide technical assistance to municipalities for implementation of local I&I corrective action plans.
- Develop and implement a joint cooperative purchase program to assist municipalities with implementation of their respective corrective action plans.
- Develop a program to help assist municipalities in funding needed corrections.
- Provide a forum for discussion regarding a possible metering program.

##### Authorities

- Implement individual authority corrective action plans as adopted by reference in Appendix D.

##### Municipalities

- Implement individual municipal corrective action programs as adopted by reference in Appendix D.
- Pursue opportunities for local flow metering to determine the effectiveness of implementation of I&I corrective action programs.
- Identify and monitor any existing on-lot sewage disposal systems.

#### Legal and Administrative Issues and Documents

##### DELCORA

- Amend the contract with the City of Philadelphia, if necessary.
- Develop a joint cooperative purchase program and associated schedule.
- Seek funding (grants, loans, etc.) to implement the cooperative purchase program.
- Develop contracts/agreements with funding entities and municipalities for the cooperative purchase program.

##### Authorities

- Develop a program and associated schedule for implementation of corrective action plans.

- Seek funding for implementation of corrective action plans.
- Renegotiate agreements with member municipalities to allow for equitable cost distribution based on actual flows.

Note: neither the County nor DELCORA has the power to force the authorities to implement their respective corrective action plans. The power to make authorities implement lies with the municipal representatives serving on the authority boards.

#### Municipalities

- Adopt the Delaware County Act 537 Sewage Facilities Plan Update, Eastern Plan of Study (2002).
- Develop a program and associated schedule for implementation of local corrective action plans.
- Seek funding for implementation of municipal corrective action plans.

#### DELCORA WESTERN SERVICE AREA

##### Designated Alternative(s)

- Continue implementation of DELCORA's Long-Term CSO Control Plan.
- Reevaluate conditions and revise the Long-Term CSO Control Plan as necessary.
- Evaluate the potential for storm and sanitary sewer system separation on a case by case basis as redevelopment occurs.
- Undertake I&I studies as needed.
- Implement recommendations of I&I studies as necessary.
- Identify and monitor any existing on-lot sewage disposal systems.

##### Legal and Administrative Issues and Documents

- Adopt the Delaware County Act 537 Sewage Facilities Plan Update, Eastern Plan of Study (2002).
- No specific legal issues have been identified at this time.
- Issues may arise in the future as the CSO control plan is revised.

#### MUNICIPALITIES SERVED BY THE CITY OF PHILADELPHIA

##### Designated Alternative(s)

- Continue to send flows from portions of Upper Darby and Haverford Townships and Millbourne, East Lansdowne, and Yeadon Boroughs through Upper Darby Township to the PSWPCP.



- Conduct I&I studies as necessary to identify any needed corrections.
- Coordinate/cooperate with DELCORA in any joint cooperative purchase program to take advantage of economies of scale.
- Identify and monitor any existing on-lot sewage disposal systems.

#### Legal and Administrative Issues and Documents

- Adopt the Delaware County Act 537 Sewage Facilities Plan Update, Eastern Plan of Study (2002).
- Work with other municipalities and DELCORA to arrange for cooperative agreement(s) or cooperatively negotiate pricing for conveyance and treatment with the City.

### TINICUM TOWNSHIP

#### Designated Alternative(s)

- Continue to collect and treat wastewater from residents and industries in the Township for as long as it continues to be the most cost-effective and environmentally sound treatment method as compared to other alternatives.
- Continue to operate the Township sewage treatment plant and make proposed improvements.
- Develop and implement an O&M program to ensure continued life of the system.
- Coordinate/cooperate with DELCORA to participate in any joint cooperative purchase program to take advantage of economies of scale.
- Identify and monitor any existing on-lot sewage disposal systems.

#### Legal and Administrative Issues and Documents

- Adopt the Delaware County Act 537 Sewage Facilities Plan Update, Eastern Plan of Study (2002).
- Pursue grants as necessary to fund the proposed wastewater treatment plant improvements.
- Continue to equitably distribute costs to customers utilizing the Township system.

- C. The present estimated costs associated with implementing the proposed corrective action plans are identified in the attached Table 3-1 from the plan. It is proposed that municipalities fund corrective actions by taking advantage of economies of scale for the purchase of needed materials, through low-interest loans (i.e., PENNVEST), and ultimately through savings achieved

through the return on municipal investment for repairs. Refer to the attached Table 6-2 from the plan.

- D. The primary municipal commitment necessary to implement the plan is adoption of the County's plan as the local official Act 537 plan. Other commitments include preparation and/or long-term implementation of corrective action plans cited in the document.
- E. The following are the major milestones for implementation of the plan:

#### DELCORA

2002 Develop a technical assistance program including:

- Prepare an organizational outline for the program.
- Seek and or develop options for funding assistance.
- Develop a joint cooperative purchase program (including agreements, etc.).
- Convene a task force consisting of municipal and authority representatives to evaluate the costs/benefits of metering.

2003 Implement an on-going technical assistance program to assist municipalities with implementation of local corrective action plans.

2004 Continue a technical assistance program.

#### DELCORA Eastern Service Area Municipalities and Authorities

The timetable for implementation of municipal and authority I&I studies is as specified in each of the individual studies. However, a general recommendation for proceeding with a five-year implementation program is as follows:

2002 Adopt the Act 537 plan update (each municipality and authority).

2002 Prioritize I&I corrective actions, develop a preliminary budget for implementation, and seek funding for implementation of a corrective action plan.

2003 Begin implementation of a five-year corrective action plan.

2005 Reevaluate the effectiveness of the corrective action plan.

2006 Continue and/or revise the corrective action plan.

#### DELCORA Western Service Area Municipalities

The timetable and associated costs for implementation of needed corrective actions is as specified in the CSO Control Plan. Implementation of a storm/sanitary sewer separation program should be done on a case by case basis as redevelopment occurs.

Develop a sewage management program:

- 2002 Adopt the Act 537 plan update.
- 2002 Develop a scope and budget for an I&I inspection program.
- 2003 Undertake I&I inspections and develop a five-year corrective action plan.
- 2004 Begin implementation of a five-year corrective action plan.
- 2006 Reevaluate the effectiveness of the I&I corrective action plan.
- 2007 Continue and/or revise the corrective action plan.

#### Municipalities Served by the City of Philadelphia

Develop a sewage management program:

- 2002 Adopt the Act 537 plan update.
- 2002 Develop a scope and budget for an I&I inspection program.
- 2003 Undertake I&I inspections and develop a five-year corrective action plan.
- 2004 Begin implementation of a five-year corrective action plan.
- 2006 Reevaluate the effectiveness of the I&I corrective action plan.
- 2007 Continue and/or revise the corrective action plan.

#### Tinicum Township

- 2002 Adopt the Act 537 plan update.
- 2002 Develop an O&M program.
- 2003 Implement an O&M program.

\*The timing for implementation of Tinicum Township's sewage treatment plant improvement program is directly linked to its grants and construction schedule.

TABLE 3-1

ACT 537: SEWAGE FACILITIES PLAN  
MUNICIPAL & AUTHORITY INFLOW AND INFILTRATION STUDY

Table 4-2  
Normalized Summary of Recommended I&I Reduction Program

Municipality	Sewer Length in Service Area (ft)	Inserts (ea)	Disconnect Inlets (ea)	MH Frame Repairs (ea)	MH Repairs (ea)	MH Liner / Replacement (ea)	Sewer Replacement (ft)	Chemical GROUTING (ft)	Chemical Root Removal (ft)	Sewer Slip Lining (ft)	Estimated Inflow Cost	Estimated Infiltration Cost	Estimated I&I Cost	Estimated I&I Reduction (gpd)	Cost per I&I Gallon Removed
Normalized unit cost <sup>1</sup>		\$ 50	\$ 2,500	\$ 197	\$ 685	\$ 3,313	\$ 130	\$ 6.75	\$ 2.20	\$ 59					
Aldan Borough	68,750	200	-	-	400	-	-	2,000	-	3,000	\$ 10,000	\$ 464,500	\$ 474,500	636,150	\$ 0.75
Clifton-Heights Borough	64,000	162	-	21	28	-	-	-	-	-	\$ 12,237	\$ 19,180	\$ 31,417	814,000	\$ 0.04
Collingdale Borough	75,000	-	-	-	14	18	1,000	4,752	-	5,586	\$ -	\$ 560,874	\$ 560,874	300,000	\$ 1.87
Colwyn Borough	17,670	85	-	-	20	-	-	-	-	-	\$ 4,250	\$ 13,700	\$ 17,950	130,000	\$ 0.14
Darby Borough	87,950	100	5	-	-	-	2,000	-	-	3,000	\$ 17,500	\$ 437,000	\$ 454,500	447,000	\$ 1.02
Darby Township	100,415	111	-	-	-	-	-	3,000	-	-	\$ 5,550	\$ 20,250	\$ 25,800	290,000	\$ 0.09
Folsom Borough	58,785	42	-	-	-	-	-	-	-	373	\$ 2,100	\$ 22,007	\$ 24,107	288,000	\$ 0.08
Glenolden Borough	87,955	150	-	-	47	-	-	-	-	2,102	\$ 7,500	\$ 156,213	\$ 163,713	1,380,000	\$ 0.12
Lansdowne Borough	136,900	120	-	-	200	-	980	950	-	3,300	\$ 6,000	\$ 465,513	\$ 471,513	529,000	\$ 0.89
Marple Township	171,215	380	-	-	313	-	-	-	-	-	\$ 19,000	\$ 214,405	\$ 233,405	585,000	\$ 0.40
Morton Borough	40,090	132	-	-	7	-	-	-	-	744	\$ 6,600	\$ 48,691	\$ 55,291	414,000	\$ 0.13
Nether Providence Township	145,582	600	-	303	107	-	-	54,375	145,582	-	\$ 89,691	\$ 760,607	\$ 850,298	149,000	\$ 5.71
Norwood Borough	74,300	83	-	84	45	1	743	44,580	74,300	3,215	\$ 20,698	\$ 814,288	\$ 834,986	112,300	\$ 7.44
Prospect Park Borough	73,300	100	-	-	83	-	-	15,555	-	2,400	\$ 5,000	\$ 303,451	\$ 308,451	963,000	\$ 0.32
Ridley Park Borough	99,000	292	-	-	47	-	-	-	-	1,114	\$ 14,600	\$ 97,921	\$ 112,521	1,250,000	\$ 0.09
Ridley Township	367,000	161	-	-	101	-	-	-	-	43,300	\$ 8,050	\$ 2,623,885	\$ 2,631,935	2,950,000	\$ 0.89
Rutledge Borough	13,450	33	-	-	-	-	435	-	-	1,190	\$ 1,650	\$ 126,760	\$ 128,410	463,000	\$ 0.28
Sharon Hill Borough	64,634	-	-	-	-	-	-	-	-	4,780	\$ -	\$ 282,020	\$ 282,020	380,000	\$ 0.74
Springfield Township	440,145	1,000	-	-	-	-	-	-	-	1,000	\$ 50,000	\$ 59,000	\$ 109,000	350,000	\$ 0.31
Swarthmore Borough	95,000	4	-	-	-	-	1,749	-	-	4,130	\$ 200	\$ 475,835	\$ 476,035	270,000	\$ 1.76
Upper Darby Township	272,761	20	-	948	409	1	1,162	5,790	-	1,924	\$ 187,756	\$ 587,137	\$ 774,893	620,000	\$ 1.25
Yeadon Borough	114,500	300	-	-	400	-	5,725	68,700	114,500	5,725	\$ 15,000	\$ 2,071,650	\$ 2,086,650	131,000	\$ 15.93
Municipal Totals	2,668,402	4,075	5	1,356	2,228	20	13,794	199,702	334,382	87,383	\$ 483,382	\$ 10,624,886	\$ 11,108,268	13,451,450	\$ 0.83
Central Delaware County Authority	121,064	540	-	-	108	-	-	-	43,300	850	\$ 27,000	\$ 219,390	\$ 246,390	253,480	\$ 0.97
Darby Creek Joint Authority	48,921	250	-	-	28	-	-	-	24,000	107	\$ 12,500	\$ 78,293	\$ 90,793	87,380	\$ 1.04
Muckinipates Authority	26,581	77	-	-	-	-	-	-	-	-	\$ 3,850	\$ -	\$ 3,850	23,100	\$ 0.17
Radnor-Haverford-Marple Sewer Authority	1,072,000	265	-	-	1,825	-	-	23,010	104,665	-	\$ 13,250	\$ 1,635,706	\$ 1,648,956	748,775	\$ 2.20
Authority Totals	1,268,566	1,132	-	-	1,961	-	-	23,010	171,965	957	\$ 56,600	\$ 1,933,389	\$ 1,989,989	\$ 1,112,735	\$ 1.79

Notes:

<sup>1</sup> Includes 25% for engineering, legal, procurement costs, etc.

<sup>2</sup> Actual repairs from 1997 and includes all member municipalities.

<sup>3</sup> Estimated I&I reduction for Springfield Twp., CDCA, DJCA, and MA based on 300 gpd per insert, 60 gpd per manhole repair, and 50 gpd per linear foot of pipe ground/slip line/replacement.

**Table 6-2  
Investment Return Eastern Municipalities I&I Correction Program**

Municipality	Estimated Inflow Cost	Estimated Infiltration Cost	Estimated I&I Cost	Estimated I&I Reduction (gpd)	Cost per I&I Gallon Removed	Annual Savings <sup>1</sup>	Payback Years	IRR <sup>2</sup> w/ 20-Year Life
Clifton Heights Borough	12,237	19,180	31,417	814,000	0.04	329,495	0.10	157.8%
Folcroft Borough	2,100	22,007	24,107	288,000	0.08	116,578	0.21	109.8%
Darby Township	5,550	20,250	25,800	290,000	0.09	117,388	0.22	106.6%
Ridley Park Borough	14,600	97,921	112,521	1,250,000	0.09	505,981	0.22	105.9%
Glenolden Borough	7,500	156,213	163,713	1,380,000	0.12	558,603	0.29	92.2%
Morton Borough	6,600	48,691	55,291	414,000	0.13	167,581	0.33	86.7%
Colwyn Borough	4,250	13,700	17,950	130,000	0.14	52,622	0.34	85.2%
Rutledge Borough	1,650	126,760	128,410	463,000	0.28	187,415	0.69	57.9%
Springfield Township	50,000	59,000	109,000	350,000	0.31	141,675	0.77	54.1%
Prospect Park Borough	5,000	303,451	308,451	963,000	0.32	389,808	0.79	53.2%
Marple Township	19,000	214,405	233,405	585,000	0.40	236,799	0.99	46.4%
Sharon Hill Borough	-	282,020	282,020	380,000	0.74	153,818	1.83	30.1%
Aldan Borough	10,000	464,500	474,500	636,150	0.75	257,504	1.84	30.0%
Lansdowne Borough	6,000	465,513	471,513	529,000	0.89	214,131	2.20	26.1%
Ridley Township	8,050	2,623,885	2,631,935	2,950,000	0.89	1,194,116	2.20	26.1%
Darby Borough	17,500	437,000	454,500	447,000	1.02	180,939	2.51	23.3%
Upper Darby Township	187,756	587,137	774,893	620,000	1.25	250,967	3.09	19.3%
Swarthmore Borough	200	475,835	476,035	270,000	1.76	109,292	4.36	13.1%
Collingdale Borough	-	560,874	560,874	300,000	1.87	121,436	4.62	12.2%
Nether Providence Township	89,691	760,607	850,298	149,000	5.71	60,313	14.10	-3.6%
Norwood Borough	20,698	814,288	834,986	112,300	7.44	45,457	18.37	-6.8%
Yeadon Borough	15,000	2,071,650	2,086,650	131,000	15.93	53,027	39.35	-15.3%
<b>Municipal Totals</b>	<b>483,382</b>	<b>10,624,886</b>	<b>11,108,268</b>	<b>13,451,450</b>	<b>0.83</b>	<b>5,444,945</b>	<b>2.04</b>	<b>27.7%</b>
Muckinipates Authority	3,850	-	3,850	23,100	0.17	9,351	0.41	77.1%
Central Delaware County Authority	27,000	219,390	246,390	253,480	0.97	102,605	2.40	24.2%
Darby Creek Joint Authority	12,500	78,293	90,793	87,380	1.04	35,370	2.57	22.9%
Radnor Haverford Marple Sewer Authority	13,250	1,635,706	1,648,956	748,775	2.20	303,093	5.44	9.5%
<b>Authority Totals</b>	<b>56,600</b>	<b>1,933,389</b>	<b>1,989,989</b>	<b>1,112,735</b>	<b>1.79</b>	<b>450,418</b>	<b>4.42</b>	<b>12.9%</b>
<b>Grand Totals</b>	<b>539,982</b>	<b>12,558,275</b>	<b>13,098,257</b>	<b>14,564,185</b>	<b>0.90</b>	<b>5,895,364</b>	<b>2.22</b>	<b>25.9%</b>

**Notes:**

<sup>1</sup> Based on treatment and conveyance costs of \$1,109.00 per million gallons.

<sup>2</sup> Assumes no savings in first 3 years and a 60% reinvestment in the 10th year.



ENCLOSURES

## Municipal Resolutions

**MUNICIPAL ADOPTION  
EASTERN PLAN OF STUDY  
10/15/2002**

<u>Municipality</u>	<u>Adoption Date</u>	<u>Resolution #</u>	<u>Date Received</u>
Aldan Borough	July 17th	2002-06	July 18, 2002
Chester City	March 13, 2002	[no number]	April 18, 2002
Chester Township	March 7, 2002	28-2002	April 23, 2002
Clifton Heights Borough	May 16, 2002	2002-08	October 11, 2002
Collingdale Borough	May 6, 2002	2002-11	June 13, 2002
Colwyn Borough	March 14, 2002	2002-1	March 26, 2002
Darby Borough	May 1, 2002	[no number]	June 4, 2002
Darby Township	March 13, 2002	2002-04	March 20, 2002
E. Lansdowne Borough	May 13, 2002	12-02	June 4, 2002
Eddystone Borough	March 11, 2002	19-02	March 18, 2002
Folcroft Borough	April 16, 2002	02-01	April 29, 2002
Glenolden Borough	March 19, 2002	4-02	March 21, 2002
Haverford Township	June 10, 2002	1419-02	June 13, 2002
Lansdowne Borough	June 19, 2002	2002-12	July 8, 2002
Lower Chichester Township	March 18, 2002	2002-06	April 18, 2002
Marcus Hook Borough	March 4, 2002	R-02-2	March 7, 2002
Marple Township	June 10, 2002	2345	June 13, 2002
Millbourne Borough	March 18, 2002	02-02	April 18, 2002
Morton Borough	March 13, 2002	02-03	April 23, 2002
Nether Providence Township	April 11, 2002	2002-04	April 17, 2002
Norwood Borough	April 22, 2002	2002-04	April 24, 2002
Parkside Borough	March 27, 2002	1480	April 25, 2002
Prospect Park Borough	May 14, 2002	1712	May 16, 2002
Radnor Township	May 20, 2002	2002-14	May 28, 2002
Ridley Township	March 27, 2002	[no number]	April 8, 2002
Ridley Park Borough	March 12, 2002	3-02	March 22, 2002
Rutledge Borough	May 6, 2002	2002-05-01	May 9, 2002
Sharon Hill Borough	March 28, 2001	253-R	April 2, 2002
Springfield Township	April 9, 2002	5-02	April 11, 2002
Swarthmore Borough	May 13, 2002	2002-04	May 16, 2002
Tinicum Township	March 18, 2002	2002-04	March 26, 2002
Trainer Borough	April 11, 2002	884	April 23, 2002
Upland Borough	March 12, 2002	10 of 2002	March 19, 2002
Upper Darby Township	June 19, 2002	45-02	June 21, 2002
Yeadon Borough	May 16, 2002	02-07	June 4, 2002
35 Municipalities			
35 Resolutions			
100.00% Adopted			

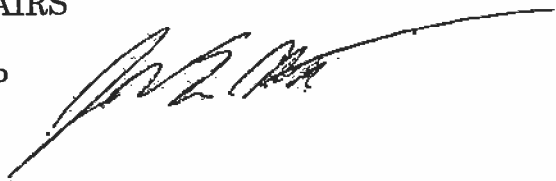
## Evidence of Request for Comments



## Delaware County Planning Department

Toal Building, 2nd & Orange Streets, Media, PA 19063 (610) 891-5200

TO : MUNICIPAL MANAGERS/SECRETARIES  
MUNICIPAL ENGINEERS  
GOVERNING BODY CHAIRS

FROM : JOHN E. PICKETT, AICP  
DIRECTOR 

SUBJECT : ACT 537 SEWAGE FACILITIES PLAN UPDATE

DATE : JULY 21, 2000

As you may be aware, the Delaware County Planning Department (DCPD) in cooperation with the Delaware County Regional Water Quality Control Authority (DELCORA) is in the process of preparing an Act 537 Sewage Facilities Plan update for Delaware County. This update is being prepared in two phases. The first phase of the plan update addresses areas in eastern Delaware County which are fully sewerred and/or are tributary to the DELCORA regional sewer network. The second phase of the plan update, which is to be prepared subsequent to the first, will address areas in western Delaware County which are either not currently tributary to the DELCORA regional system or which currently have significant unsewerred areas.

We are now at the point in the development of the eastern plan where we have collected a tremendous amount of background information and have begun analysis of the various sewage facilities alternatives. Before we proceed with development of the plan's final recommendations, we would like to present your municipality with our findings thus far and solicit input regarding some of the recommendations we are considering in the plan. We have scheduled a meeting for this purpose on:

**Date:** Tuesday, September 26, 2000  
**Location:** Springfield Township Municipal Building  
**Time:** 7:00 p.m.

We will be providing you with a follow-up notice closer to the meeting. At that time, we will ask you to let us know how many people will be attending so that we can assure that we have adequate refreshments. I hope that you or some other representative from your municipality will be able to attend. If you have any questions in the meantime, please feel free to call Karen Holm of my staff at 610-891-5213.





# DCPD

## Delaware County Planning Department

Toal Building, 2nd & Orange Streets, Media, PA 19063 (610) 891-5200

TO: MUNICIPAL MANAGERS/SECRETARIES  
MUNICIPAL ENGINEERS  
GOVERNING BODY CHAIRS

FROM: JOHN E. PICKETT, AICP *John E. Pickett*  
DIRECTOR

DATE: SEPTEMBER 11, 2000

RE: ACT 537 SEWAGE FACILITIES PLAN UPDATE

This notice serves as a follow-up to the July 21, 2000 letter announcing the Act 537 Sewage Facilities Plan update meeting to be held:

**Date:** Tuesday, September 26, 2000  
**Location:** Springfield Township Municipal Building  
**Time:** 7:00 p.m.

The meeting will give DCPD and DELCORA the opportunity to present your municipality with our findings thus far and to solicit input regarding the recommendations we are considering in the plan.

Attached are directions to the Springfield Township Municipal Building. I hope that you or a representative from your municipality will be able to attend. If you have any questions, please don't hesitate to call Karen Holm of my staff at 610-891-5213.



**ACT 537 SEWAGE FACILITIES PLANNING UPDATE**  
**MEETING ATTENDANCE**  
**September 26, 2000**

NAME/TITLE	MUNICIPALITY/ AUTHORITY	STREET ADDRESS	POST OFFICE	PHONE #
P.J. Close/ Twp. Eng. (Kelly)	Aldan Borough	19 Regency Plaza	Glen Mills	610-358-9996
Charles Catania	Catania Engineering	520 W. MacDade Blvd.	Milmont Park	610-532-2884
Joe O'Hara	CDCA	95 Glen Circle	Broomall	610-356-5376
Jim Swindell	CDCA	106 Black Horse Lane	Media	610-566-7919
Marie A. Hosler	CDCA- Nether Prov.	620 Morris Lane	Wallingford	610-894-0590
Rick Megaro	CDCA- Springfield	344 Lester Rd.	Springfield	610-543-5499
Charles Catania Sr.	CEA Inc.	520 W. MacDade Blvd.	Milmont Park	610-532-2884
William Payne	City of Chester	36 E. 50th St.	Chester	610-447-7707
Dan McEnhill	Colwyn Borough	221 Spruce St.	Colwyn	610-461-2000
Nikki Roberts/ Eng.(Pennoni)	Darby Borough	One Riverwalk Centre Suite 333	Wilmington	610-446-0460
Jack Ryan	Darby Township	21 Bartram	Glenolden	610-586-1514
Charles W. Barton	DCJA	312 Greenwood Rd.	Sharon Hill	610-532-2408
Sue Murtha	Folcroft Borough	1555 Elmwood Avenue	Folcroft	610-522-1305
T. Bannar	Haverford Twp.	2325 Darby Rd.	Havertown	610-446-9403
Jim Kelly	Kelly Engineers	19 Regency Plaza	Glen Mills	610-358-9363
Bruce Dorbian	Marcus Hook	10th & Green Sts.	Marcus Hook	610-485-1341
unknown	Morton	114 Locust Rd.	Morton	610-328-1534
Peter Krasas/ Twp. Eng.	Newtown Twp.	206 Wedgewood Circle	Newtown Square	610-518-9001
Cas Holloway	Newtown/ Radnor	608 Long Champs Drive		610-688-0233
Eileen Mulvena	Norwood/Yeadon/ E.Lansdowne/Media/ Brookhaven/Nether Prov.			856-848-0033
William H. Scott/ Manager	Sharon Hill Borough	250 Sharon Ave.	Sharon Hill	610-586-8200
Kevin Kane/ Twp. Eng.	Springfield Twp.	50 Powell Rd.	Havertown	610-544-1300
Bernie Stein	Springfield/DELCORA	818 W. Rolling Rd.	Springfield	610-544-2730
Dennis O'Neill	Tinicum Township	PO Box 118	Broomall	610-356-9550
Robert J. Bernauer Sr.	Tinicum Township	629 N. Gov. Printz Blvd.	Essington	610-521-9191
Fernando Baldvieso	Upper Darby Twp.	100 Garrett Rd.	Upper Darby	610-734-7635
Lisa Catania Smith	Various	520 W. MacDade Blvd.	Milmont Park	610-532-2884
Bill Ross		108 Willis Way	Glen Mills	610-459-9267

Municipality/Authority	Manager/Rep.	Engineer	Board Representative
Aldan Borough		P.J. Close	
CDCA	Joseph O'Hara	Jim Swindell	Marie Hosler, Rick Megaro
Chester City	William Payne	Charles Catania Sr.	
Chester Township			
City of Philadelphia			
Clifton Heights Township		James Kelly	
Collingdale Borough			
Colwyn Borough	Dan McEnhill		
Darby Borough		Nikki Roberts (Pennoni)	
Darby Township	John B. Ryan, Jr.	Charles Catania Sr.	
DCJA	Charles W. Barton		
East Lansdowne Borough		Eileen Mulvena	
Eddystone Borough		Charles Catania Sr.	
Folcroft Borough	Sue Murtha	Charles Catania Sr.	
Glenolden Borough		Charles Catania Sr.	
Haverford Township	Thomas J. Bannar		
Lansdowne Borough			
Lower Chichester Township		Charles Catania Sr.	
MA			
Marcus Hook Borough	Bruce Dorian	Charles Catania Sr.	
Marple Township			
Millbourne Borough		Charles Catania Sr.	
Morton Borough		Charles Catania Sr.	
Nether Providence Townshi		Eileen Mulvena	
Norwood Borough		Eileen Mulvena	
Parkside Borough		Charles Catania Sr.	
Philly Suburban	Bill Ross		
Prospect Park Borough			
Radnor Township			
RHM			
Ridley Park Borough		Charles Catania Sr.	
Ridley Township		Charles Catania Sr.	
Rutledge Borough		Charles Catania Sr.	
Sharon Hill Borough	William H. Scott		
Springfield Township		Kevin Kane	Bernie Stein
Swarthmore Borough			
Tinicum SA	Robert Bernauer Sr.		
Tinicum Township			
Trainer Borough			
Upland Borough		Charles Catania Sr.	
Upper Darby Township		Fernando Baldivieso	
Yeadon Borough		Eileen Mulvena	

# ***SAVE THE DATE!***

**Wednesday, June 13th- 7pm**

## **Act 537 Sewage Facilities Planning Update**

Additional information about the meeting will follow.  
A copy of the draft Act 537 Plan Update will be provided  
to each municipality for review prior to the meeting.



Sponsored by  
Delaware County Planning Department  
& DELCORA



**TO: MUNICIPAL MANAGERS/SECRETARIES  
SEWER AUTHORITY BOARD MEMBERS  
MUNICIPAL AND AUTHORITY ENGINEERS**

**FROM: JOHN E. PICKETT, AICP  
DIRECTOR**

**DATE: JULY 9, 2001**

**RE: ACT 537 SEWAGE FACILITIES PLAN UPDATE**

---

The Delaware County Planning Department (DCPD) and DELCORA held an Act 537 Sewage Facilities Plan Update meeting on June 13<sup>th</sup> to review the highlights of the Draft Plan Update and solicit comments from municipalities and authorities. A number of comments and questions regarding the recommendations have been received thus far.

**Again, we would like to urge municipalities and authorities that have not yet provided comments to review the Draft Plan Update and meeting materials and forward any comments to DCPD and DELCORA by August 31, 2001.** The Power Point presentation that was given is enclosed for those who were not in attendance.

In addition, DCPD and DELCORA are available for individual meetings as requested. Please do not hesitate to call Karen Holm of my staff at 610-891-5213 if you have any questions or concerns. Thank you.





**ACT 537 SEWAGE FACILITIES PLANNING UPDATE**  
**MEETING ATTENDANCE**  
**June 13, 2001/Springfield Twp. Municipal Building**

NAME/TITLE	MUNICIPALITY/ AUTHORITY	PHONE #
P.J. Close/ Twp. Eng.	Aldan Borough, Clifton Heights, Upper Providence Twp., Newtown Twp.	610-358-9363
Charles Catania	Catania Engineering	610-532-2884
Mike Ciocco	Catania Engineering	610-532-2884
Ann Catania	Catania Engineering	610-532-2884
Joe O'Hara	CDCA	610-356-5376
Jim Swindell	CDCA	610-566-7919
Marie A. Hosler	CDCA- Nether Providence Twp.	610-894-0590
William Payne	City of Chester	610-447-7707
Richard Horenoer/ Eng. (Pennoni)	Darby Borough	610-446-0460
John Pileggi	DELCORA	610-876-5523 x18
David P. Earnear/ Twp. Eng.	Haverford Twp.	215-222-3000
Anthony Hamaday	Marple Twp.	610-256-4040
John J. O'Neill	Muckinapates Authority/Darby Twp.	610-586-1514
Robert Fossett	Norwood Borough	610-534-3225
Eileen Mulvena, (NDI)	Norwood/Yeadon/ E.Lansdowne/Media/ Brookhaven/Nether Providence Twp.	856-848-0033
Kevin Kane/ Twp. Eng.	Springfield Twp.	610-544-1300
Joseph L. DiPietro	Springfield Twp./DELCORA	610-328-2477
Dennis O'Neill/ Twp. Eng.	Tinicum Township	610-356-9550
Eileen Nelson, (BVE/Vollmer)	Trainer, Prospect Park, Collingdale Borough	610-494-3636
Steve Walsh/ Twp. Eng.	Upper Darby Twp.	610-734-7635



## Delaware County Planning Department

Toal Building, 2nd & Orange Streets, Media, PA 19063 (610) 891-5200

TO: MUNICIPAL SECRETARIES/MANAGERS  
SEWER AUTHORITIES

FROM: JOHN E. PICKETT, AICP  
DIRECTOR

SUBJECT: ACT 537 SEWAGE FACILITIES PLAN UPDATE  
EASTERN PLAN OF STUDY

DATE: FEBRUARY 21, 2002

Enclosed for your review and consideration is a final copy of the Delaware County Act 537 Sewage Facilities Plan Update for the Eastern Plan of Study (February 2002), prepared on behalf of the municipalities by the Delaware County Planning Department.

This plan, which was presented in draft form at the June 2001 meeting in Springfield Township, has recently undergone minor revision based upon Pennsylvania Department of Environmental Protection (DEP) technical comments and municipal input. The most significant modification was the inclusion of a brief discussion on the benefits of instituting municipal metering programs to document the effectiveness of local corrective action programs and the potential need for revisions to existing agreements between the municipalities and the authorities. While implementation of the corrective action plans is a required element of the plan, instituting a metering program is only a recommendation.

The plan has been reviewed by DEP and complies with all requirements for a municipal Act 537 Sewage Facilities Plan, including a 30-day public comment period which commenced January 30, 2002. The next step on each municipality's part is to consider adopting the document as its Official Act 537 Sewage Facilities Plan. A draft resolution is contained at the end of Chapter 9. The most current Official Sewage Facilities Plan dates back to 1971; therefore, if your municipality does not adopt the plan as it's own, DEP may request preparation of an individual plan for your municipality.

**A meeting is scheduled to formally present the recommendations of the plan and to discuss future actions on:**

**February 26, 2002**

**7:00 p.m.**

**Springfield Township Building  
(refreshments to be served)**

If you have any questions regarding the meeting or the document, please feel free to contact Karen Holm at 610-891-5213.





## Delaware County Planning Department

Toal Building, 2nd & Orange Streets, Media, PA 19063 (610) 891-5200

TO: MUNICIPAL ENGINEERS

FROM: JOHN E. PICKETT, AICP  
DIRECTOR

SUBJECT: ACT 537 SEWAGE FACILITIES PLAN UPDATE  
EASTERN PLAN OF STUDY

DATE: FEBRUARY 21, 2002

Enclosed for your information is a final copy of the Delaware County Act 537 Sewage Facilities Plan Update for the Eastern Plan of Study (February 2002), prepared on behalf of the municipalities by the Delaware County Planning Department.

This plan, which was presented in draft form at the June 2001 meeting in Springfield Township, has recently undergone minor revision based upon Pennsylvania Department of Environmental Protection (DEP) technical comments and municipal input. The most significant modification was the inclusion of a brief discussion on the benefits of instituting municipal metering programs to document the effectiveness of local corrective action programs and the potential need for revisions to existing agreements between the municipalities and the authorities. While implementation of the corrective action plans is a required element of the plan, instituting a metering program is only a recommendation.

The plan has been reviewed by DEP and complies with all requirements for a municipal Act 537 Sewage Facilities Plan, including a 30-day public comment period which commenced January 30, 2002. The next step on each municipality's part is to consider adopting the document as its Official Act 537 Sewage Facilities Plan. A draft resolution is contained at the end of Chapter 9. The most current Official Sewage Facilities Plan dates back to 1971; therefore, if your municipality does not adopt the plan as it's own, DEP may request preparation of an individual plan for your municipality.

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**February 26, 2002  
7:00 p.m.  
Springfield Township Building  
(refreshments to be served)**

If you have any questions regarding the meeting or the document, please feel free to contact Karen Holm at 610-891-5213.





## Delaware County Planning Department

Toal Building, 2nd & Orange Streets, Media, PA 19063 (610) 891-5200

TO: MUNICIPAL SECRETARIES/MANAGERS  
BROOKHAVEN AND ROSE VALLEY BOROUGHES  
NEWTOWN AND UPPER PROVIDENCE TOWNSHIPS

FROM: JOHN E. PICKETT, AICP  
DIRECTOR

SUBJECT: ACT 537 SEWAGE FACILITIES PLAN UPDATE  
EASTERN PLAN OF STUDY

DATE: FEBRUARY 21, 2002

Enclosed for your information is a final copy of the Delaware County Act 537 Sewage Facilities Plan Update for the Eastern Plan of Study (February 2002), prepared on behalf of the municipalities by the Delaware County Planning Department.

As you may be aware, your municipality falls within the Western Study Area; a separate plan for this area is currently underway. However, a portion of your sewage flows are currently or will be directed into the Eastern Study Area for conveyance and/or treatment. Therefore, your municipality may find this plan of interest.

**A meeting is scheduled to formally present the recommendations of the plan and to discuss future actions on:**

**February 26, 2002  
7:00 p.m.  
Springfield Township Building  
(refreshments to be served)**

If you have any questions regarding the meeting or the document, please feel free to contact Karen Holm at 610-891-5213.



Municipality/Authority	Manager/Rep	Engineer	Board Rep
Aldan Borough		P.J. Close	
CDCA			
Chester City		Catania	
Chester Township		Catania	
City of Philadelphia			
Clifton Heights Township			
Collingdale Borough			
Colwyn Borough			
Darby Borough		Eileen Mulvena	
Darby Township	John B. Ryan, Jr.	Catania	
DCJA	Charles W. Barton	Charles Catania	
East Lansdowne Borough			
Eddystone Borough		Catania	
Folcroft Borough			
Glenolden Borough		Catania	
Haverford Township		David Pennoni	
Lansdowne Borough			
Lower Chichester Township		Catania	
MA			
Marcus Hook Borough	Bruce Dorbian	Catania	
Marple Township	Tony Hamaday		
Millbourne Borough		Lisa Catania-Smith	
Morton Borough		Catania	Charles Lillicrapp
Nether Providence Townshi		Eileen Mulvena	
Norwood Borough		Eileen Mulvena	
Parkside Borough		Catania	
Philly Suburban			
Prospect Park Borough			
Radnor Township			
RHM			
Ridley Park Borough			
Ridley Township		Charles Catania	
Rutledge Borough		Catania	
Sharon Hill Borough	Bill Scott		
Springfield Township		Kevin Kane	
Swarthmore Borough		Catania	
Tinicum SA			
Tinicum Township		Dennis O'Neill	
Trainer Borough			
Upland Borough		Catania	
Upper Darby Township		Fernando Baldivieso	
Yeadon Borough		Eileen Mulvena	
Newtown Township	James Sheldrake		



## SEWAGE FACILITIES PLAN DISTRIBUTION

### Municipalities

Aldan Borough  
Chester City  
Chester Township  
Clifton Heights Borough  
Collingdale Borough  
Colwyn Borough  
Darby Borough  
Darby Township  
E. Lansdowne Borough  
Eddystone Borough  
Folcroft Borough  
Glenolden Borough  
Haverford Township  
Lansdowne Borough  
Lower Chichester Township  
Marcus Hook Borough  
Marple Township  
Millbourne Borough  
Morton Borough  
Nether Providence Township  
Norwood Borough  
Parkside Borough  
Prospect Park Borough  
Radnor Township  
Ridley Township  
Ridley Park Borough  
Rutledge Borough  
Sharon Hill Borough  
Springfield Township  
Swarthmore Borough  
Tinicum Township  
Trainer Borough  
Upland Borough  
Upper Darby Township  
Yeadon Borough

### Engineers

P.J. Close, Kelly Eng.  
Catania (C)  
C  
J. P. Kelly, Kelly Eng.  
Joseph Viscuso, BVE  
Remington & Vernick (R&V)  
Richard Hornberger, Pennoni  
C  
F. Clark Walton, NDI  
C  
Schoor DePalma  
C  
Pennoni  
Pennoni  
C  
C  
George Chajkowsky, R&V  
C  
C  
NDI  
C  
C  
Eileen Nelson, BVE  
Daniel Malloy  
C  
C  
C  
H. Gilroy Damon  
Kevin Kane  
C  
James W. MacCombie  
Joseph Viscuso, BVE  
C  
Joseph Vasturia  
NDI

### **Fringe Municipalities**

Brookhaven  
Newtown  
Rose Valley  
Upper Providence

### **Authorities**

Central Delaware County Authority  
Darby Creek Joint Authority  
Muckinipates Authority  
Radnor-Haverford-Marple Authority  
City of Philadelphia Water Department

### **Others**

DEP 2-Donna, 1-submit w/ invoice (3)  
Library (2)  
Env. Section/Lois (5)  
DELCORA (6)  
DELCORA Board (9)  
Weston (2)

## Proof of Public Notice

# Proof of Publication of Notice in Delaware County Daily Times

Under Newspaper Advertising Act. No. 587, Approved May 16, 1929

State of Pennsylvania, }  
County of Delaware, } ss.

Carol Sandone

designated agent of CENTRAL STATES PUBLISHING,

INC., being duly sworn, deposes and says that the DELAWARE COUNTY DAILY TIMES, a daily newspaper of general circulation as defined in the above-mentioned Act, published at Primos, Delaware County, Pennsylvania, was established September 7, 1876, and issued and published continuously thereafter for a period of 100 years and for a period of more than six months immediately prior hereto, (under the name Chester Times prior to November 2, 1959) in the City of Chester, County of Delaware and further says that the printed notice or publication attached hereto is an exact copy of a notice or publication printed and published in the regular edition and issues of the DELAWARE COUNTY DAILY TIMES on the following dates, viz.:

January 30, 2002

A.D. 20.....

and that said advertising was inserted in all respects as ordered.

Affiant further deposes that he is the proper person duly authorized by CENTRAL STATES PUBLISHING, INC. publisher of said DELAWARE COUNTY DAILY TIMES, a newspaper of general circulation, to verify the foregoing statement under oath and that affiant is not interested in the subject matter of the aforesaid notice or advertisement, and that all allegations in the foregoing statements as to time, place and character of publication are true.

Sworn to and subscribed before me this

30th

January

2002

day of

Notary Public

Notarial Seal  
Thomas Abbott, Notary Public  
Upper Darby Twp., Delaware County  
My Commission Expires Aug. 23, 2005  
Member, Pennsylvania Association of Notaries

## PUBLIC NOTICE

On behalf of the County of Delaware and the following municipalities:

Alden Borough, Chester City, Chester Township, Clifton Heights Borough, Collingdale Borough, Colwyn Borough, Darby Borough, Darby Township, East Lansdowne Borough, Edgelyne Borough, Folcroft Borough, Glenolden Borough, Haverford Township, Lansdowne Borough, Lower Merion Township, Marcus Hook Borough, Maple Township, Millbourne Borough, Morton Borough, Nether Providence Township, Norwood Borough, Parkside Borough, Prospect Park Borough, Radnor Township, Ridley Township, Ridley Park Borough, Rutledge Borough, Sharon Hill Borough, Springfield Township, Swarthmore Borough, Tinicum Township, Trainer Borough, Upland Borough, Upper Darby Township, Yeadon Borough.

An Act 537, Sewage Facilities Plan Update for the Eastern Planning Area is available for public review at the Delaware County Planning Department (DCPD) office located at 2nd and Orange Streets in Media and the Delaware County Regional Water Quality Control Authority (DELCORA) office located at 5th and Welsh Streets in the City of Chester. The plan, which would be subject to adoption by each of the municipalities noted above, makes recommendations for the continued operation, maintenance, and repair of the existing sewer networks currently serving municipalities in the study area. Written comments are to be provided to both DCPD and to the respective municipality of concern within 30 days of this notice. Comments to DCPD should be transmitted to the following address: Delaware County Planning Department, Court House and Government Center Building, 201 West Front Street, Media, PA 19063.

## Comments Received



## DELAWARE COUNTY PLANNING DEPARTMENT

COURT HOUSE/GOVERNMENT CENTER  
201 W. Front St. Media, PA 19063

### COUNCIL

JOHN J. McFADDEN  
CHAIRMAN

TIM MURTAUGH  
VICE CHAIRMAN

ANDREW J. REILLY  
G. MICHAEL GREEN  
LINDA A. CARTISANO

**Office Location:** Toal Building, 2<sup>nd</sup> & Orange Sts., Media, PA 19063  
Phone: (610) 891-5200 FAX: (610) 891-5203

JOHN E. PICKETT, AICP  
DIRECTOR

March 7, 2002

Mr. Charles J. Catania, Jr., PE  
Catania Engineering Associates, Inc.  
520 W. MacDade Boulevard  
Milmont Park, PA 19033-3311

RE: Act 537 Sewage Facilities Plan  
Eastern Plan of Study  
August 22, 2001 Comment Letter

Dear Mr. Catania:

We have reviewed the comments that you made regarding the Darby Creek Joint Authority (DCJA) in your letter of August 21, 2001. We intend to revise several pages of the document to reflect the following comments:

- Table 1-3 – Glenolden is not a member of DCJA.
- Page 3-12 – RHM has an agreement with DCJA, but is not a member.
- Page 3-12 – DCJA owns three interceptors.
- Page 3-23 – Mention of DCJA under Muckinipates Authority

Revisions to these pages as well as several others will be distributed to everyone that has received the plan. Replacement pages will be inserted in those copies of the plan that have not yet been distributed.

With regard to several other of your comments, we have the following responses:

- Comment that upper sections of the Darby Creek line are maintained by Upper Darby, Springfield, and RHM Authority – We currently do not address the issue of maintenance of specific lines in the text of the plan; therefore, we do not believe it necessary to cite one specific line at this time.
- The peaking factor and how it was used is explained in the Sewage Facilities Engineering Analysis cited in the plan. Representatives from DELCORA and/or



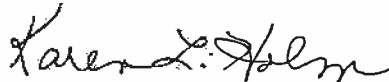


Roy F. Weston will provide you with additional information regarding its use/application. We will provide you with copies of the DEP incident notification reports from August 1991-August 2000 that were cited in the plan.

- Page 3-22 All work in the I&I Summary Report has been completed – Completion of improvements cited in individual municipal and authority plans has been ongoing and ever-changing; therefore, we chose not to try to list them in the plan. However, as we noted at our meeting of February 26, 2002, it is important for all municipalities and authorities to document completion of the various corrective actions that have been recommended in the plan. DELCORA has offered to work with the authorities to try to develop a program to document improvements made throughout the system.
- Page 7-2 The plan notes that authority facilities are operated and maintained by authority boards and consulting engineering staff; therefore, there is a reduced level of oversight on a daily basis. – We still believe this to be true.
- Page 8-2 The plan notes that costs for treatment are increasing. – While we do not have real dollar figures to document these increasing costs, we believe that rising costs are a reasonable assumption to be made when analyzing alternatives.
- Page 8-3 The plan notes that neither the County nor DELCORA has the power to force authorities to implement their respective action plans, only the municipal representatives that serve on the respective authority boards. – We believe this to be true.

If you have any further comments or questions, please feel free to give me a call.

Very truly yours,



Karen L. Holm, Manager  
Environmental Section

Cc: Robert Powell, DELCORA  
Evan Andrews, Roy F. Weston  
Donna Ulan, DEP



# CATANIA ENGINEERING ASSOCIATES, INC.

Consulting Engineers & Land Surveyors

August 22, 2001  
File # 83800-113-537

John E. Pickett, AICP  
Director  
Delaware County Planning Department  
Government Center  
201 W. Front Street  
Media, PA 19063

Attn: Act 537  
Darby Creek Joint Authority

Dear Mr. Pickett:

On behalf of Darby Creek Joint Authority, (DCJA) our office has reviewed the draft Act 537 Sewage Facilities Plan Update Eastern Plan of Study. Comments are as follows:

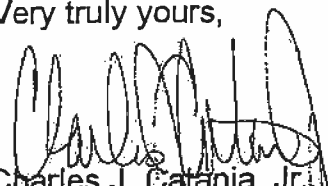
- Table 1.3
  - Glenolden Borough is not a member of DCJA.
- Page 3.12
  - Radnor-Haverford-Marple Authority has an agreement with DCJA for conveyance of flow, but is not a member.
- DCJA owns and maintains 3 interceptors
  - Darby Creek Line
  - Cobb's Creek Line
  - Hermesprota Creek Line
- The upper sections of the Darby Creek Line are maintained by Upper Darby and Springfield and by Radnor-Haverford-Marple Authority.
- Under the Sewage Facilities Engineering Analysis, numerous sections of pipe were identified as exceeding capacity. It should be noted that only under extreme rain events is this a problem. The peaking factor used in the Sewage Facilities Engineering Analysis should also be identified or explained. With the limited information available to our office, there are no records of sewage overflow in the interceptor line nor the pump station with the exception of Hurricane Floyd. The report indicates 6 overflow events. Please provide this information to our office for future use. The Authority has authorized our office to develop a capital improvement plan to rehabilitate, replace or relieve its interceptor lines.

- Page 3.22
  - All work identified in the I & I Summary Report has been completed. In addition, the Authority is currently in the process of converting all manhole covers to bolt down water tight styles.
- Page 3.23
  - Under Muckinipates Authority - Other problems, there is mention of DCPS.
- Page 7.2
  - There is mention of a reduced level of oversight on a daily basis on Authority facilities. Please clarify. Most authorities, while not having its own maintenance crews, have maintenance contractors performing routine maintenance.
- Page 8.2
  - Costs for treatment of I & I are increasing. Are there real dollar figures available?
- Page 8.3 Authorities
  - There is a note that "neither the County nor Delcora has the power to force the Authority....." please clarify. This statement applies to any and all government or quasi-governmental agencies. Whether it is Delcora, County or local Government, the power lies with the elected or appointed members.

Please be aware that the Authority is prepared to do what is necessary to address the problems.

Should you have any additional questions or comments, please contact me.

Very truly yours,



Charles J. Catania, Jr., PE  
for Catania Engineering Assoc., Inc.

CJC,JR/kap

cc: Karen Holm  
Robert Powell  
Charles Barton

Edward Battle  
President of Council

Phil Kosta  
Mayor

Richard Marino  
Borough Secretary

**BOROUGH OF MORTON**  
Highland & Sycamore Aves.  
Morton PA 19070  
Ph: 610-543-4565 fax 610-543-8392  
Email: mortonboro@ccis.net



Karen L. Holm, Manager  
Toal Building  
2nd & Orange Streets  
Media PA 19063

September 6, 2001

RE: Act 537 Revision

Dear Karen

This is to correct the reviewed draft Act 537 plan update.

Table 6-1 whereby the Morton Borough Building Inspector checks for illegal sump pump and/or downspout connection per request for Certificate of Occupancy per transfer (Sale) of real estate.

Thank You  
Charles Lillcrapp  
Borough of Morton

Cc: Delaware County Regional Authority (Delcora)

## FAX COVER SHEET

HERBERT E. MacCOMBIE, Jr. P.E.  
Consulting Engineers and Surveyors, Inc.  
P.O. Box 118  
Broomall, PA 19008

610-356-9550 - Phone  
610-356-5032 - Fax

SEND TO Company name Lafayette County Planning Dept		From Dennis O'Neil
Attention Lafayette County		Date 3-20-02
Receiving Fax Number 610-291-5203		

☐ Urgent ☐ Reply ASAP ☐ Please comment ☐ Please review ☐ For your information

Total pages, including cover:

2

## COMMENTS

PLEASE NOTE CORRECTION ON  
PAGE 3-15 ATTACHED

that it was unable to assign a per capita usage value as employee usage is unknown.

### Treatment Facility Description

The Tinicum plant is located on Chippewa Street in Essington, immediately south of I-95. The plant was built in 1965 to serve an equivalent population of 12,000, with an average design flow of 1.4 MGD and a maximum of 2.8 MGD. Secondary treatment is achieved through a two-stage, high-rate trickling filter process, with recirculation in each stage. Effluent is chlorinated and discharged to Darby Creek. The plant has a pattern of hydraulic overloads during wet weather. In 1987, the Tinicum Township Sewer Authority initiated planning under the Act 537 grants program to isolate and identify areas of I&I and determine appropriate corrective actions. The Township is still in the process of making corrections.

According to the Authority's Chapter 94 Report of 2000, "Peaks in the flow...are a result of excessive amounts of infiltration and inflow." The report notes that the Township is still in the process of implementing the recommended corrective measures contained in its I&I study. It further notes that "...corrective measures are helping and will continue to help alleviate possible future hydraulic overloading." The Chapter 94 Report states that "No hydraulic overloading is anticipated based upon geometric projections." At present, the Authority does not anticipate additional wastewater planning since flows have not reached the plant's design capacity of 2.8 MGD.

The Township has recently  
Improvements are to include raising  
feet), replacing rock with plastic  
additional set of settling tanks.

Design 1.4 MGD

### Conveyance Facilities Desc

#### Conveyance Lines

Tinicum Township owns and  
Township only. The 2000 Chapter 9  
the system "...is generally in fair cond

#### Pump Stations

Sewage flows by gravity to pump stations which pump flows to the plant. Sewage is conveyed to the treatment plant by a system using eleven pump stations. They are as follows:



BOROUGH OF ALDAN  
COUNTY OF DELAWARE  
RESOLUTION 2002-06

**BE IT RESOLVED**, by the Council of the Borough of Aldan that Section 5 of the Act of January 24, 1966, P. L. No. 537 known as the "Pennsylvania Sewage Facilities Act" (codified at 35 P.S. § 750.1, et seq.), as amended, and the Rules and Regulations promulgated by the Pennsylvania Department of Environmental Protection [hereinafter referred to as the "Department"] adopted at Chapter 71 of Title 25 of the Pennsylvania Code, requires municipalities, such as the Borough of Aldan, to adopt an Official Sewage Facilities Plan providing for sewage services adequate to prevent contamination of waters and/or environmental health hazards with sewage wastes, and to revise this plan, when necessary, to meet the sewage disposal needs of the municipality. In furtherance of this statute, the Delaware County Planning Department, acting upon authorization from the Pennsylvania Department of Environmental Protection, has offered technical assistance to municipalities within the County in developing their plan in accord with the Pennsylvania Sewage Facilities Act.

**THEREFORE**, the Council for the Borough of Aldan having reviewed the findings and recommendations of the Delaware County Planning Department find that they conform to the Code of the Borough of Aldan, and to a comprehensive program of pollution control and water quality management.

**NOW, THEREFORE, BE IT RESOLVED THAT THE** Council of the Borough of Aldan adopts the "Delaware County Act 537 Sewage Facilities Plan Update-Eastern Plan of Study" prepared by the Delaware County Planning Department in

February, 2002, as the official plan for sewage facilities in compliance with the Pennsylvania Sewage Facilities Act of 1966. The Borough further assures the Department of its good faith intention to implement said plan in accordance with the financial resources available to do same, as well as the matching funds provided by the County and/or the Department to implement these mandates as required or permitted by law.

**RESOLVED and ORDAINED** this 17<sup>th</sup> day of July, 2002 by the Aldan Borough Council.

**BOROUGH OF ALDAN**

  
**JOSEPH A. MCCOLLAN, JR.**

President,

Aldan Borough Council

**ATTEST:**



**MARIE V. KAUT**

Secretary,  
Borough of Aldan

**APPROVED** this 17<sup>th</sup> day of July, 2002.

  
**JACK P. EDMUNDSON**

Mayor,  
Borough of Aldan

## RESOLUTION

### THE COUNCIL OF THE CITY OF CHESTER DOES RESOLVE:

**WHEREAS**, Section 5 of the Act of January 24, 1966, P. L. 1535, No. 537, known as the "Pennsylvania Sewage Facilities Act," as amended, and the Rules and Regulations of the Department of Environmental Protection (Department) adopted thereunder, Chapter 71 of Title 25 of the Pennsylvania Code, require the municipality to adopt an Official Sewage Facilities Plan providing for sewage services adequate to prevent contamination of waters and/or environmental health hazards with sewage wastes, and to revise said plan whenever it is necessary to meet the sewage disposal needs of the municipality; and

**WHEREAS**, the Delaware County Planning Department, acting upon authorization from the Pennsylvania Department of Environmental Protection, did offer assistance to the municipalities in meeting their Act 537 requirements on a sub-County basis; and

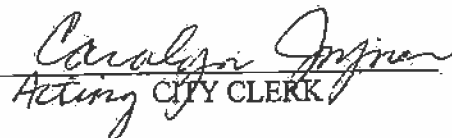
**WHEREAS**, the City of Chester did authorize the County of Delaware to prepare the sewage facilities plan on its behalf; and

**WHEREAS**, the appropriate municipal officials of the City of Chester have reviewed the findings and recommendations of the plan and find it to conform to applicable zoning, subdivision, other municipal ordinances and plans, and to a comprehensive program of pollution control and water quality management.

**NOW, THEREFORE, BE IT RESOLVED THAT THE** City Council of the City of Chester hereby accepts and adopts the "Delaware County Act 537 Sewage Facilities Plan Update- Eastern Plan of Study", prepared by the Delaware County Planning Department, February 2002, as the official plan for sewage facilities in compliance with the Pennsylvania Sewage Facilities Act 1966. The City of Chester hereby assures the Department of the complete and timely implementation of the said plan as required by law, (Section 5, Pennsylvania Sewage Facilities Act, as amended).

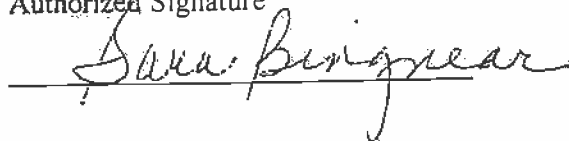
**WE HEREBY CERTIFY** that this Resolution was approved by City Council this day 13<sup>th</sup> of March, A.D. 2002.

  
MAYOR

Attest:   
Acting CITY CLERK

I, Sara Bingnear, City Clerk certify that the attached is a true and correct copy of the Resolution passed by City Council of the City of Chester on March 13, 2002.

Authorized Signature



City of Chester Seal

**TOWNSHIP OF CHESTER  
DELAWARE COUNTY, PENNSYLVANIA  
RESOLUTION NO. 28-2002**

**Resolution of the Council of the Township of Chester, Delaware County, Pennsylvania (hereinafter "the municipality").**

**WHEREAS,** Section 5 of the Act of January 24, 1966, P.L. 1535, No. 537, known as the "Pennsylvania Sewage Facilities Act," as amended, and the Rules and Regulations of the Department of Environmental Protection (Department) adopted thereunder, Chapter 71 of Title 25 of the Pennsylvania Code, require the municipality to adopt an Official Sewage Facilities Plan providing for sewage services adequate to prevent contamination of waters and/or environmental health hazards with sewage waste, and to revise said plan whenever it is necessary to meet sewage disposal needs of the municipality; and

**WHEREAS,** THE Delaware County Planning Department, acting upon authorization from the Pennsylvania Department of Environmental Protection, did offer assistance to the municipalities in meeting their Act 537 requirements on a sub-County basis; and

**WHEREAS,** the Township of Chester did by formal resolution dated March 7, 2002, authorize the County of Delaware to prepare the sewage facilities plan on its behalf; and

**WHEREAS,** the appropriate municipal officials of the Township of Chester have reviewed the findings and recommendations of that plan and find it to conform to applicable zoning, subdivision, other municipal ordinances and plans, and to a comprehensive program of pollution control and water quality management.

**NOW, THEREFORE, BE IT RESOLVED THAT THE** Council of the Township of Chester hereby accept(s) and adopt(s) the "Delaware County Act 537 Sewage Facilities Plan Update-Eastern Plan of Study," prepared by the Delaware County Planning Department, February 2002, as the official plan for sewage facilities in compliance with the Pennsylvania Sewage Facilities Act of 1966. The Township hereby assures the Department of the complete and timely implementation of the said plan as required by law. (Section 5, Pennsylvania Sewage Facilities Act as amended).

**ADOPTED THIS 7TH DAY OF MARCH, 2002.**

TOWNSHIP OF CHESTER:

  
Stanley R. Kester, Chairman

Nathaniel Ellis, Vice Chairman

  
Robert J. May Jr., Councilman

  
Katherine A. Williams, Councilwoman

  
Franklin J. Thompson Jr., Councilman

Attest:

  
William P. Pisarek, Secretary

**RESOLUTION ADOPTING THE DELAWARE COUNTY SEWAGE FACILITIES  
PLAN - EASTERN PLAN OF STUDY**

RESOLUTION OF THE ( BOROUGH ) OF CLIFTON HEIGHTS  
(Township/Borough), DELAWARE COUNTY, PENNSYLVANIA (hereinafter "the  
municipality").

WHEREAS, Section 5 of the Act of January 24, 1966, P.L. 1535, No 537, known as the "Pennsylvania Sewage Facilities Act," as amended, and the Rules and Regulations of the Department of Environmental Protection (Department) adopted thereunder, Chapter 71 of Title 25 of the Pennsylvania Code, require the municipality to adopt an Official Sewage Facilities Plan providing for sewage services adequate to prevent contamination of waters and/or environmental health hazards with sewage wastes, and to revise said plan whenever it is necessary to meet the sewage disposal needs of the municipality; and

WHEREAS, the Delaware County Planning Department, acting upon authorization from the Pennsylvania Department of Environmental Protection, did offer assistance to the municipalities in meeting their Act 537 requirements on a sub-County basis; and

WHEREAS, the BOROUGH of CLIFTON HEIGHTS did by formal resolution dated May 16, 2002, authorize the County of Delaware to prepare the sewage facilities plan on its behalf; and

WHEREAS, the appropriate municipal officials of the BOROUGH have reviewed the findings and recommendations of that plan and find it to conform to applicable zoning, subdivision, other municipal ordinances and plans, and to a comprehensive program of pollution control and water quality management.

NOW, THEREFORE, BE IT RESOLVED THAT THE BOROUGH of CLIFTON HEIGHTS, hereby accept(s) and adopt(s) the "Delaware County Act 537 Sewage Facilities Plan Update - Eastern Plan of Study," prepared by the Delaware County Planning Department, February 2002, as the official plan for sewage facilities in compliance with the Pennsylvania Sewage Facilities Act of 1966. The BOROUGH hereby assures the Department of the complete and timely implementation of the said plan as required by law. (Section 5, Pennsylvania Sewage Facilities Act, as amended).

I, LYNNE WHEAT, Secretary, BOROUGH OF  
CLIFTON HEIGHTS, hereby certify that the foregoing is a true copy of  
the BOROUGH Resolution No. 2002-08, adopted  
MAY 16, 2002, 2002.

AUTHORIZED SIGNATURE

Lynne Wheat

BOROUGH SEAL





**RESOLUTION ADOPTING THE DELAWARE COUNTY SEWAGE  
FACILITIES PLAN - EASTERN PLAN OF STUDY**

RESOLUTION OF THE BOROUGH OF COLLINGDALE  
DELAWARE COUNTY, PENNSYLVANIA (hereinafter "the  
municipality").

WHEREAS, Section 5 of the Act of January 24, 1966, P.L. 1535, No 537, known as the "Pennsylvania Sewage Facilities Act," as amended, and the Rules and Regulations of the Department of Environmental Protection (Department) adopted thereunder, Chapter 71 of Title 25 of the Pennsylvania Code, require the municipality to adopt an Official Sewage Facilities Plan providing for sewage services adequate to prevent contamination of waters and/or environmental health hazards with sewage wastes, and to revise said plan whenever it is necessary to meet the sewage disposal needs of the municipality; and

WHEREAS, the Delaware County Planning Department, acting upon authorization from the Pennsylvania Department of Environmental Protection, did offer assistance to the municipalities in meeting their Act 537 requirements on a sub-County basis; and

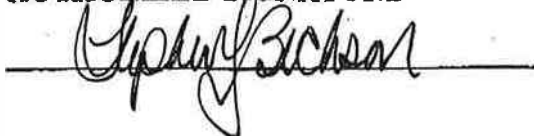
WHEREAS, the BOROUGH OF COLLINGDALE did by formal resolution dated Feb. 4 2000, authorize the County of Delaware to prepare the sewage facilities plan on its behalf; and

WHEREAS, the appropriate municipal officials of the MUNICIPALITY have reviewed the findings and recommendations of that plan and find it to conform to applicable zoning, subdivision, other municipal ordinances and plans, and to a comprehensive program of pollution control and water quality management.

NOW, THEREFORE, BE IT RESOLVED THAT THE BOROUGH of COLLINGDALE hereby accept(s) and adopt(s) the "Delaware County Act 537 Sewage Facilities Plan Update - Eastern Plan of Study," prepared by the Delaware County Planning Department, February 2002, as the official plan for sewage facilities in compliance with the Pennsylvania Sewage Facilities Act of 1966. The MUNICIPALITY hereby assures the Department of the complete and timely implementation of the said plan as required by law. (Section 5, Pennsylvania Sewage Facilities Act, as amended).

I, Stephen J. Beckson Secretary, for the Borough of  
Collingdale hereby certify that the foregoing is a  
true copy of the Resolution No. 2002-11 adopted  
May 6, 2002, 2002.

AUTHORIZED SIGNATURE



colwyn  
RESOLUTION # 2002-1

Resolution Adopting The Delaware County Sewage Facilities Plan-  
Eastern Plan of Study

RESOLUTION OF THE COUNCIL OF COLWYN BOROUGH,  
DELAWARE COUNTY, PENNSYLVANIA (hereinafter "the  
municipality").

WHEREAS, Section 5 of the Act January 24, 1966, P.L. 1535, No. 537, known as the  
"Pennsylvania Sewage Facilities Act," as amended, and the Rules and Regulations of the  
Department of Environmental Protection (department) adopted thereunder, Chapter 71 of  
Title 25 of the Pennsylvania Code, require the municipality to adopt an Official Sewage  
Facilities Plan providing for sewage services adequate to prevent contamination of waters  
and/or environmental health hazards with sewage wastes, and revise said plan whenever  
it is necessary to meet the sewage disposal needs of the municipality; and

WHEREAS, the Delaware County Planning Department, acting upon authorization from  
the Pennsylvania Department of Environmental Protection, did offer assistance to the  
municipalities in meeting their Act 537 requirements on a sub-County basis; and

WHEREAS, the Borough of Colwyn did by formal resolution dated March 14, 2002,  
authorize the County of Delaware to prepare the sewage facilities plan on its behalf; and

WHEREAS, the appropriate municipal officials of the Borough of Colwyn have reviewed  
the findings and recommendations of that plan and find it to conform to applicable  
zoning, subdivision, other municipal ordinances and plans, and to a comprehensive  
program of pollution control and water quality management.

NOW THEREFORE BE IT RESOLVED THAT THE Council of Colwyn Borough  
hereby accept(s) and adopt(s) the "Delaware County Act 537 Sewage Facilities Plan  
Update-Eastern Plan of Study," prepared by the Delaware County Planning Department,  
February 2002, as the official plan for sewage facilities in compliance with the  
Pennsylvania Sewage Facilities Act of 1996. The Borough of Colwyn hereby assures the  
Department of the complete and timely implementation of the said plan as required by  
law. (Section 5, Pennsylvania Sewage Facilities Act, as amended).

I, Kelly Winters, secretary of, Colwyn Borough Council hereby certify that foregoing is a  
true copy of the Borough of Colwyn's Resolution # 2002-1, adopted March 14, 2002.

  
authorized signature  


Colwyn Borough Seal

**DARBY BOROUGH RESOLUTION NO.  
ADOPTING THE DELAWARE COUNTY SEWAGE FACILITIES PLAN  
EASTERN PLAN STUDY**

**RESOLUTION OF THE Council of Darby Borough, Delaware County, Pennsylvania**

**WHEREAS**, Section 5 of the Act of January 24, 1966, P.L. 1535, No. 537, known as the "Pennsylvania Sewage Facilities Act," as amended, and the Rules and Regulations of the Department of Environment Protection (Department) adopted thereunder, Chapter 71 of Title 25 of the Pennsylvania Code, require the municipality to adopt an Official Sewage Facilities Plan providing for sewage services adequate to prevent contamination of waters and/or environmental health hazards with sewage wastes, and to revise said plan whenever it is necessary to meet the sewage disposal needs of the municipality; and

**WHEREAS**, the Delaware County Planning Department, acting upon authorization from the Pennsylvania Department of Environmental Protection, did offer assistance to the municipalities in meeting their Act 537 requirements on a sub-County basis; and

**WHEREAS**, THE Borough of Darby did authorize the County of Delaware to prepare the sewage facilities plan on its behalf; and

**WHEREAS**, the appropriate municipal officials of the Borough of Darby have reviewed the findings and recommendations of that plan and find it to conform to applicable zoning subdivision, other municipal ordinances and plans, and to a comprehensive program of pollution control and water quality management.

**NOW, THEREFORE BE IT RESOLVED THAT**, the Council of the Borough of Darby hereby accepts and adopts the "Delaware County Act 537 Sewage Facilities Plan Update - Eastern Plan of Study," prepared by the Delaware County Planning Department, February 2002, as the official plan for sewage facilities in compliance with the Pennsylvania Sewage Facilities Act of 1966. The Borough hereby assures the Department of the complete and timely implementation of the said plan as required by law, (Section 5, Pennsylvania Sewage Facilities Act, as amended), subject to Borough budgetary constraints and the Borough continuing selection on how best to effectively address I & I problems.

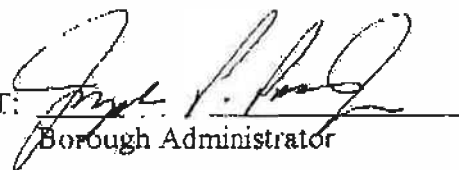
**RESOLVED THIS            DAY OF MAY 1, 2002**

SEAL

BY:

  
President, Darby Borough Council

ATTEST:

  
Borough Administrator

I, Joseph P. Possenti, Administrator, Darby Borough hereby certify that the foregoing is a true copy of the Borough's Resolution No.            , adopted May, 1, 2002.

Certification: \_\_\_\_\_

DELAWARE COUNTY, PENNSYLVANIA

RESOLUTION NO. 2002-04

DELAWARE COUNTY SEWAGE FACILITIES PLAN

EASTERN PLAN OF STUDY

RESOLUTION OF THE BOARD OF COMMISSIONERS OF THE TOWNSHIP OF DARBY, DELAWARE COUNTY, PENNSYLVANIA (hereinafter "the municipality").

WHEREAS, Section 5 of the Act of January 24, 1966, P.L. 1535, No. 537, known as the "Pennsylvania Sewage Facilities Act," as amended, and the Rules and Regulations of the Department of Environmental Protection (Department) adopted thereunder, Chapter 71 of Title 25 of the Pennsylvania Code, require the municipality to adopt an Official Sewage Facilities Plan providing for sewage services adequate to prevent contamination of waters and/or environmental health hazards with sewage wastes, and to revise said plan whenever it is necessary to meet the sewage disposal needs of the municipality; and

WHEREAS, the Delaware County Planning Department, acting upon authorization from the Pennsylvania Department of Environmental Protection, did offer assistance to the municipalities in meeting their Act 537 requirements on a sub-County basis, and

WHEREAS, the Township of Darby did by formal resolution dated March 13, 2002, authorize the County of Delaware to prepare the sewage facilities plan on its behalf; and

WHEREAS, the appropriate municipal officials of the Township have reviewed the findings and recommendations of that plan and find it to conform to applicable zoning, subdivision, other municipal ordinances and plans, and to a comprehensive program of pollution control and water quality management.

NOW, THEREFORE BE IT RESOLVED THAT THE Board of Commissioners of Darby Township hereby accepts and adopts the "Delaware County Act 537 Sewage Facilities Plan Update - Eastern

**EAST LANSDOWNE BOROUGH RESOLUTION NO. 12-02  
ADOPTING THE DELAWARE COUNTY SEWAGE FACILITIES PLAN  
EASTERN PLAN STUDY  
RESOLUTION 12-02**

**RESOLUTION OF THE Council of East Lansdowne Borough, Delaware County, Pennsylvania**

**WHEREAS**, Section 5 of the Act of January 24, 1966, P.L. 1535, No. 537, known as the "Pennsylvania Sewage Facilities Act," as amended, and the Rules and Regulations of the Department of Environment Protection (Department) adopted thereunder, Chapter 71 of Title 25 of the Pennsylvania Code, require the municipality to adopt an Official Sewage Facilities Plan providing for sewage services adequate to prevent contamination of waters and/or environmental health hazards with sewage wastes, and to revise said plan whenever it is necessary to meet the sewage disposal needs of the municipality; and

**WHEREAS**, the Delaware County Planning Department, acting upon authorization from the Pennsylvania Department of Environmental Protection, did offer assistance to the municipalities in meeting their Act 537 requirements on a sub-County basis; and

**WHEREAS**, THE Borough of East Lansdowne did authorize the County of Delaware to prepare the sewage facilities plan on its behalf; and

**WHEREAS**, the appropriate municipal officials of the Borough of East Lansdowne have reviewed the findings and recommendations of that plan and find it to conform to applicable zoning, subdivision, other municipal ordinances and plans, and to a comprehensive program of pollution control and water quality management.

**NOW, THEREFORE BE IT RESOLVED THAT**, the Council of the Borough of East Lansdowne hereby accepts and adopts the "Delaware County Act 537 Sewage Facilities Plan, Update - Eastern Plan of Study," prepared by the Delaware County Planning Department, February 2002, as the official plan for sewage facilities in compliance with the Pennsylvania Sewage Facilities Act of 1966. The Borough hereby assures the Department of the complete and timely implementation of the said plan as required by law, (Section 5, Pennsylvania Sewage Facilities Act, as amended), subject to Borough budgetary constraints and the Borough continuing selection on how best to effectively address I & I problems.

**RESOLVED THIS 13<sup>th</sup> DAY OF MAY, 2002**

SEAL

BY:

George Schmader  
President, East Lansdowne Borough Council

ATTEST:

Marius Russo  
Borough Manager

I, Marius Russo, Manager, East Lansdowne Borough hereby certify that the foregoing is a true copy of the Borough's Resolution No. 12-02, adopted 13 May 2002.

Certification:

Marius Russo

RESOLUTION ADOPTING THE DELAWARE COUNTY SEWAGE

FACILITIES PLAN-EASTERN PLAN OF STUDY

# 19-02

RESOLUTION OF THE COUNCIL OF EDDYSTONE, DELAWARE COUNTY,  
PENNSYLVANIA.

WHEREAS, Section 5 of the Act of January 24, 1966, P.L. 1535, No. 537, known as the "Pennsylvania Sewage Facilities Act," as amended, and the Rules and Regulations of the Department of Environmental Protection (Department) adopted thereunder, Chapter 71 of Title 25 of the Pennsylvania Code, require the municipality to adopt an Official Sewage Facilities Plan providing for sewage services adequate to prevent contamination of waters and /or environmental health hazards with sewage wastes, and to revise said plan whenever it is necessary to meet the sewage disposal needs of the municipality; and

WHEREAS, the Delaware County Planning Department, acting upon authorization from the Pennsylvania Department of Environmental Protection, did offer assistance to the municipalities in meeting their Act 537 requirements on a sub-County basis; and

WHEREAS, the Borough of Eddystone did by formal resolution dated March 11, 2002, authorize the County of Delaware to prepare the sewage facilities plan on its behalf; and

WHEREAS, the appropriate municipal officials of the Borough have reviewed the findings and recommendations of that plan and find it to conform to applicable zoning, subdivision, other municipal ordinances and plans, and to a comprehensive program of pollution control and water quality management.

NOW, THEREFORE, BE IT RESOLVED THAT THE COUNCIL OF EDDYSTONE BOROUGH hereby accepts and adopts the "Delaware County Act 537 Sewage Facilities Plan Update-Eastern Plan of Study." prepared by the Delaware County Planning Department, February 2002, as the official plan for sewage facilities in compliance with the Pennsylvania Sewage Facilities Act of 1966. The Borough hereby assures the Department of the complete and timely implementation of the said plan as required by law. (Section 5, Pennsylvania Sewage Facilities Act, as amended).

I, Patricia M. Rodden, Secretary, Eddystone Borough Council hereby certify that the foregoing is a true copy of the Boroughs Resolution No. 19-02, adopted March 11, 2002.

*Patricia M. Rodden*

Patricia M. Rodden  
Eddystone Borough Secretary



**RESOLUTION ADOPTING THE DELAWARE COUNTY SEWAGE  
FACILITIES PLAN-EASTERN PLAN OF STUDY**

RESOLUTION OF THE COUNCIL OF FOLCROFT BOROUGH, DELAWARE  
COUNTY, PENNSYLVANIA (hereinafter "the municipality").

WHEREAS, Section 5 of the Act of January 24, 1966, P.L. 1535, No 537, known as the "Pennsylvania Sewage Facilities Act," as amended, and the Rules and Regulations of the Department of Environmental Protection (Department) adopted thereunder, Chapter 71 of Title 25 of the Pennsylvania Code, require the municipality to adopt an Official Sewage Facilities Plan providing for sewage services adequate to prevent contamination of waters and/or environmental health hazards with sewage wastes, and to revise said plan whenever it is necessary to meet the sewage disposal needs of the municipality: and

WHEREAS, the Delaware County Planning Department, acting upon authorization from the Pennsylvania Department of Environmental Protection, did offer assistance to the municipalities in meeting their Act 537 requirements on a sub County basis: and

WHEREAS, the Borough of Folcroft did by formal resolution dated April 16, 2002, authorize the County of Delaware to prepare the sewage facilities plan on its behalf: and

WHEREAS, the appropriate municipal officials of the Borough have reviewed the findings and recommendations of that plan and find it to conform to applicable zoning, subdivision, other municipal ordinances and plans, and to a comprehensive program of pollution control and water and quality management.

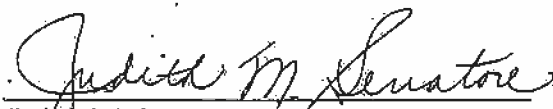
NOW, THEREFORE, BE IT RESOLVED THAT THE COUNCIL OF FOLCROFT hereby accept(s) and adopt(s) the "Delaware County Act 537 Sewage Facilities Plan Update- Eastern Plan of Study" prepared by the Delaware County Planning Department, February, 2002, as the official plan for sewage facilities in compliance with the Pennsylvania Sewage Facilities Act of 1966. The Borough hereby assures the Department of the complete and timely implementation of the said plan as required by law. (Section 5, Pennsylvania Sewage Facilities Act, as amended).

I, Judith M. Serratore, Secretary, Borough of Folcroft hereby certify that the foregoing is a true copy of the Borough's Resolution No. 02-01, adopted April 16, 2002.

AUTHORIZED SIGNATURE

BOROUGH SEAL

  
Kathleen S. Kelly, Council President

  
Judith M. Serratore, Borough Secretary

RESOLUTION 4-02

RESOLUTION ADOPTING THE DELAWARE COUNTY SEWAGE  
FACILITIES PLAN - EASTERN PLAN OF STUDY

RESOLUTION OF THE BOROUGH OF GLENOLDEN, DELAWARE COUNTY,  
PENNSYLVANIA.

WHEREAS, Section 5 of the Act of January 24, 1966, P. L. 1535, No 537, known as the "Pennsylvania Sewage Facilities Act," as amended, and the Rules and Regulations of the Department of Environmental Protection (Department) adopted thereunder, Chapter 71 of Title 25 of the Pennsylvania Code, require the municipality to adopt an Official Sewage Facilities Plan providing for sewage services adequate to prevent contamination of waters and/or environmental health hazards with sewage wastes, and to revise said plan whenever it is necessary to meet the sewage disposal needs of the municipality; and

WHEREAS, the Delaware County Planning Department, acting upon authorization from the Pennsylvania Department of Environmental Protection, did offer assistance to the municipalities in meeting their Act 537 requirements on a sub-County basis; and

WHEREAS, the Borough of Glenolden did by formal resolution dated 3-19-2002, authorize the County of Delaware to prepare the sewage facilities plan on its behalf;

WHEREAS, the appropriate municipal officials of Glenolden Borough have reviewed the finding and recommendations of that plan and find it to conform to applicable zoning, subdivision, other municipal ordinances and plans, and to a comprehensive program of pollution control and water quality management;

NOW, THEREFORE, BE IT RESOLVED THAT THE BOROUGH COUNCIL OF GLENOLDEN BOROUGH hereby accept(s) and adopt(s) the "Delaware County Act 537 Sewage Facilities Plan Update - Eastern Plan of Study," prepared by the Delaware County Planning Department, February 2002, as the official plan for sewage facilities in compliance with the Pennsylvania Sewage Facilities Act of 1966. Glenolden Borough hereby assures the Department of the complete and timely implementation of the said plan as required by law. (Section 5, Pennsylvania Sewage Facilities Act, as amended).

I, Loretta A. Daly, SECRETARY, Glenolden Borough hereby certify that the foregoing is a true copy of the Borough's Resolution No. 4-02, adopted March 19, 2002.

AUTHORIZED SIGNATURE

  
Loretta A. Daly

RESOLUTION NO. 1419-2002

RESOLUTION of the Commissioners of Haverford Township, Delaware County, PA  
(hereinafter "the municipality").

WHEREAS, Section 5 of the Act of January 24, 1966, P.L. 1535, No. 537, known as the "Pennsylvania Sewage Facilities Act," as amended, and the Rules and Regulations of the Department of Environmental Protection (Department) adopted thereunder, Chapter 71 of Title 25 of the PA Code, require the municipality to adopt an Official Sewage Facilities Plan providing for sewage services adequate to prevent contamination of waters and/or environmental health hazards with sewage wastes, and to revise said plan whenever it is necessary to meet the sewage disposal needs of the municipality; and

WHEREAS, the Delaware County Planning Department, acting upon authorization from the PA Department of Environmental Protection, did offer assistance to the municipalities in meeting their Act 537 requirements on a sub-county basis; and

WHEREAS, the Township of Haverford did by formal resolution dated 10/30/89, Resolution No. 864-89, authorize the County of Delaware to prepare the sewage facilities plan on its behalf; and

WHEREAS, the appropriate municipal officers of the Township have reviewed the findings and recommendations of that plan and find it to conform to applicable zoning, subdivision, other municipal ordinances and plans, and to a comprehensive program of pollution control and water quality management.


NOW, THEREFORE, BE IT RESOLVED THAT THE Commissioners of Haverford Township hereby accepts and adopts the "Delaware County Act 537 Sewage Facilities Plan Update - Eastern Plan of Study," prepared by the Delaware County Planning Department, February 2002, as the official plan for sewage facilities in compliance with the PA Sewage Facilities Act of 1966. The Township of Haverford hereby assures the Department of the complete and timely implementation of the said plan as required by law. (Section 5, PA Sewage Facilities, as amended).

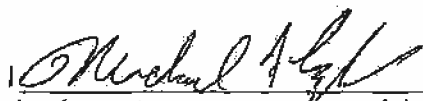
RESOLVED this 10<sup>th</sup> day of June, A.D., 2002.

TOWNSHIP OF HAVERFORD



BY: KENNETH B. RICHARDSON  
President, Board of Commissioners

Attest:   
Michael F. English  
Township Manager

 Secretary, of the Township of Haverford hereby certify that the foregoing is a true copy of the Township's Resolution No. 1419-02 adopted 6/10/02.

Borough of Lansdowne  
12 East Baltimore Avenue  
Lansdowne, Pennsylvania

**RESOLUTION NO. 2002-12**

**Regarding Adopting the Delaware County Sewage Facilities Plan – Eastern Plan of Study  
the Borough of Lansdowne, Delaware County Pennsylvania (hereinafter “the  
municipality”).**

**WHEREAS**, Section 5 of the Act of January 24, 1966, P.L. 1535, No. 537, known as the “Pennsylvania Sewage Facilities Act,” as amended, and the Rules and Regulations of the Department of Environmental Protection (Department) adopted thereunder, Chapter 71 of Title 25 of the Pennsylvania Code, require the municipality to adopt an Official Sewage Facilities Plan providing for sewage services adequate to prevent contamination of waters and/or environmental health hazards with sewage wastes, and to revise said plan whenever it is necessary to meet the sewage disposal needs of the municipality; and

**WHEREAS**, the Delaware County Planning Department, acting upon authorization from the Pennsylvania Department of Environmental Protection, did offer assistance to the municipalities in meeting their Act 537 requirements on a sub-County basis; and

**WHEREAS**, the Borough of Lansdowne did by formal resolution dated June 19, 2002 authorize the County of Delaware to prepare the sewage facilities plan on its behalf; and

**WHEREAS**, the appropriate municipal officials of the Borough of Lansdowne have reviewed the findings and recommendations of that plan and find it to conform to applicable zoning, subdivision, other municipal ordinances and plans, and to a comprehensive program of pollution control and water quality management.

**NOW, THEREFORE, BE IT RESOLVED** that the Council of the Borough of Lansdowne, hereby accepts and adopts the “Delaware County Act 537 Sewage Facilities Plan Update – Eastern Plan of Study,” prepared by the Delaware County Planning Department, February 2002, as the official plan for sewage facilities in compliance with the Pennsylvania Sewage Facilities Act of 1966. The Borough of Lansdowne hereby assures the Department of the complete and timely implementation of the said plan as required by law. (Section 5, Pennsylvania Sewage Facilities Act, as amended].

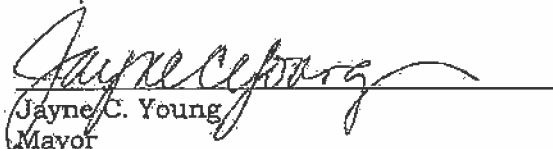
Borough of Lansdowne  
12 East Baltimore Avenue  
Lansdowne, Pennsylvania

Resolution No. 2002-12  
Page Two

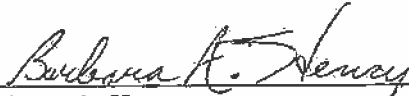
ENACTED AND RESOLVED this 19<sup>th</sup> day of June, 2002

  
Anthony Campuzano  
President of Borough Council

ADOPTED this 19<sup>th</sup> day of June, 2002.

  
Jayne C. Young  
Mayor

I, Barbara A. Henry, Secretary to Borough Council, Borough of Lansdowne, hereby certify that the foregoing is a true copy of the Borough's Resolution Number 2002-12, adopted June 19, 2002.

  
Barbara A. Henry  
Secretary to Borough Council

seal

TOWNSHIP OF LOWER CHICHESTER  
DELAWARE COUNTY, PENNSYLVANIA

RESOLUTION NO: 2002-06  
ADOPTING THE DELAWARE COUNTY SEWAGE FACILITIES  
PLAN EASTERN PLAN OF STUDY

RESOLUTION OF THE TOWNSHIP OF LOWER CHICHESTER DELAWARE COUNTY, DELAWARE COUNTY, PENNSYLVANIA (hereinafter "the municipality" )

WHEREAS, Section 5 of the Act of January 24, 1966, P.L. 1535, No. 537, known as the " Pennsylvania Sewage Facilities Act," as amended, and the Rules and Regulations of the Department of Environmental Protection (Department) adopted thereunder, Chapter 71 of Title 25 of the Pennsylvania Code, require the municipality to adopt an Official Sewage Facilities Plan providing for sewage services adequate to prevent contamination of waters and/or environmental health hazards with sewage wastes, and to revise said plan whenever it is necessary to meet the sewage disposal needs of the municipality; and

WHEREAS, the Delaware County Planning Department, acting upon authorization from the Pennsylvania Department of Environmental Protection, did offer assistance to the municipalities in meeting their Act 537 requirements on a sub-County basis; and,

WHEREAS, the Township of Lower Chichester did by formal resolution dated March 18, 2002, authorize the County of Delaware to prepare the sewage facilities plan on its behalf; and

WHEREAS, the appropriate municipal officials of the Township of Lower Chichester have reviewed the findings and recommendations of that plan and find it to conform to applicable zoning subdivision, other municipal ordinances and plans, and to a comprehensive program of pollution control and water quality management.



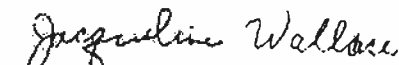
NOW THEREFORE, BE IT RESOLVED, THAT THE Board of Commissioners hereby accepts and adopts the "Delaware County Act 537 Sewage Facilities Plan Update-Eastern Plan of Study", prepared by the Delaware County Planning Department, February 2002, as the official plan for sewage facilities in compliance with the Pennsylvania Sewage Facilities Act of 1966. The Township of Lower Chichester hereby assures the Department of the complete and timely implementation of said plan as required by law. Section 5, Pennsylvania Sewage Facilities Act, as amended).

TOWNSHIP OF LOWER CHICHESTER



ROCCO GASPARI, PRESIDENT  
BOARD OF COMMISSIONERS

I, Jacqueline Wallace, Secretary for the Township of Lower Chichester hereby certify the foregoing is a true copy of the Township of Lower Chichester's Resolution No. 2002-06, adopted March 18, 2002.

  
JACQUELINE WALLACE  
Township Secretary

**BOROUGH OF MARCUS HOOK  
DELAWARE COUNTY, PA  
RESOLUTION R-02-2**

**RESOLUTION ADOPTING THE DELAWARE COUNTY  
SEWAGE FACILITIES PLAN - EASTERN PLAN OF STUDY**

Resolution of the Council of the Borough of Marcus Hook (Borough), Delaware County, Pennsylvania (hereinafter "the municipality").

**WHEREAS**, Section 5 of the Act of January 24, 1966, P.L. 1535, known as the "Pennsylvania Sewage Facilities Act," as amended, and the Rules and Regulations of the Department of Environmental Protection (Department) adopted thereunder, Chapter 71 of Title 25 of the Pennsylvania Code, require the municipality to adopt an Official Sewage Facilities Plan providing for sewage services adequate to prevent contamination of waters and/or environmental health hazards with sewage wastes, and to revise said plan whenever it is necessary to meet the sewage disposal needs of the municipality; and

**WHEREAS**, the Delaware County Planning Department, acting upon authorization from the Pennsylvania Department of Environmental Protection, did offer assistance to the municipalities in meeting their Act 537 requirements on a sub-County basis; and

**WHEREAS**, the Borough of Marcus Hook did by formal resolution dated November 6, 1989, authorize the County of Delaware to prepare the sewage facilities plan on its behalf; and

**WHEREAS**, the appropriate municipal officials of the Borough have reviewed the findings and recommendations of that plan and find it to conform to applicable zoning, subdivision, other municipal ordinances and plans, and to a comprehensive program of pollution control and water quality management.

**NOW, THEREFORE, BE IT RESOLVED** that the Council of the Borough of Marcus Hook, Delaware County, Pennsylvania, hereby accepts and adopts the "Delaware County Act 537 Sewage Facilities Plan Update - Eastern Plan of Study," prepared by the Delaware County Planning Department February 2002, as the official plan of the Borough.

## RESOLUTION NO. 2345

WHEREAS, Section 5 of the Act of January 24, 1966, P.L. 1535, No. 537, known as the "Pennsylvania Sewage Facilities Act", as amended, and the Rules and Regulations of the Department of Environmental Protection (Department) adopted there under, Chapter 71 of Title 25 of the Pennsylvania Code, require the municipality to adopt an Official Sewage Facilities Plan providing for sewage services adequate to prevent contamination of waters and/or environmental health hazards with sewage wastes, and to revise said plan whenever it is necessary to meet the sewage disposal needs of the municipality, and

WHEREAS, the Delaware county Planning Department, acting upon authorization from the Pennsylvania Department of Environmental Protection, did offer assistance to the municipalities in meeting their Act 537 requirements on a sub-county basis; and

WHEREAS, the Township of Marple did by formal resolution # 1546 dated February 12, 1990 authorizing the County of Delaware to prepare the sewage facilities plan on its behalf; and

WHEREAS, the appropriate municipal officials of the Township of Marple has reviewed the findings and recommendation of that plan and find it to conform to applicable zoning, subdivision, other municipal ordinances and plans, and to a comprehensive program of pollution control and water quality management.

NOW, THEREFORE BE IT RESOLVED, that the Board of Commissioners hereby accepts and adopts the "Delaware County Act 537 Sewage Facilities Plan Update – Eastern Plan of Study", prepared by the Delaware County Planning Department, February 2002, as the official plan for sewage facilities in compliance with the Pennsylvania Sewage Facilities Act of 1966. The Township of Marple hereby assures the Department of the complete and timely implementation of the said plan as required by law. (Section 5, Pennsylvania Sewage Facilities Act, as amended)

Resolved, this 10<sup>th</sup> day of June, 2002.

TOWNSHIP OF MARPLE  
BOARD OF COMMISSIONERS

BY: 

Daniel D. Leefson, President  
Board of Commissioners

ATTEST: 

Sharon L. Angelaccio  
Township Secretary



# *Borough of Millbourne*

9 PARK AVENUE  
MILLBOURNE, PENNSYLVANIA 19082  
(610) 352-9080 FAX (610) 352-9081

## RESOLUTION ADOPTING THE DELAWARE COUNTY SEWAGE FACILITIES PLAN-EASTERN PLAN OF STUDY

### RESOLUTION NO. 02-02

RESOLUTION OF THE COUNCIL OF MILLBOURNE, DELAWARE COUNTY, PENNSYLVANIA  
(HEREINAFTER "THE MUNICIPALITY").

WHEREAS, Section 5 of the Act of January 24, 1966, P.L. 1535, NO 537, known as the "Pennsylvania Sewage Facilities Act," as amended, and the Rules and Regulations of the Department of Environmental Protection (Department) adopted thereunder, Chapter 71 of Title 25 of the Pennsylvania Code, require the municipality to adopt an Official Sewage Facilities Plan providing for sewage services adequate to prevent contamination of wastes and/or environmental health hazards with sewage wastes, and to revise said plan whenever it is necessary to meet the sewage disposal needs of the municipality; and

WHEREAS, the Delaware County Planning Department, acting upon authorization from the Pennsylvania Department of Environmental Protection, did offer assistance to the municipalities in meeting their Act 537 requirements on a sub-County basis; and

WHEREAS, the Borough of Millbourne did by formal resolution authorize the County of Delaware to prepare the sewage facilities plan on its behalf; and

WHEREAS, the appropriate municipal officials of the Borough have reviewed the findings and recommendations of that plan and find it to conform to applicable zoning, subdivision, other municipal ordinances and plans, and to a comprehensive program of pollution control and water quality management.

NOW; THEREFORE, BE IT RESOLVED THAT THE Council of the Borough hereby accept(s) and adopt(s) the "Delaware County Act 537 Sewage Facilities Plan Update-Eastern Plan of Study," prepared by the Delaware County Planning Department, February 2002, as the official plan for sewage facilities in compliance with the Pennsylvania Sewage Facilities Act of 1966. The Borough hereby assures the Department of the complete and timely implementation of the said plan as required by law. (Section 5, Pennsylvania Sewage Facilities Act, as amended).

I, Dru Ann Staud, Secretary, Millbourne Borough Council hereby certify that the foregoing is a true copy of the Borough's Resolution No. 02-02, adopted March 18, 2002.

  
AUTHORIZED SIGNATURE

BOROUGH SEAL 

This is a certified copy of Resolution 02-02. Dru Ann Staud

DELAWARE COUNTY, PENNSYLVANIA



RESOLUTION NO. 02-03

**RESOLUTION ADOPTING THE DELAWARE COUNTY SEWAGE FACILITIES PLAN-  
EASTERN PLAN OF STUDY**

RESOLUTION OF THE Council of Morton Borough, DELAWARE COUNTY, PENNSYLVANIA  
(HEREINAFTER "the municipality").

**WHEREAS**, Section 5 of the Act of January 24, 1966, P.L. 1535, No. 537, known as the "Pennsylvania Sewage Facilities Act," as amended, and the rules and Regulations of the Department of Environmental Protection (Department) adopted thereunder, Chapter 71 of Title 25 of the Pennsylvania Code, require the municipality to adopt an Official Sewage Facilities Plan providing for sewage services adequate to prevent contamination of waters and/or environmental health hazards with sewage wastes, and to revise said plan whenever it is necessary to meet the sewage disposal needs of municipality; and

**WHEREAS**, the Delaware County Planning Department, acting upon authorization from the Pennsylvania Department of Environmental Protection did offer assistance to the municipalities in meeting their Act 537 requirements on a sub-County basis; and

**WHEREAS**, the Borough of Morton did by formal resolution authorize the County of Delaware to prepare the sewage facilities plan on its behalf; and

**WHEREAS**, the appropriate municipal officials of the borough have reviewed the findings and recommendations of that plan and find it to conform or will conform to the applicable zoning, subdivision, other municipal ordinances and plans, and to a comprehensive program of pollution control and water quality management.

**NOW THEREFORE, BE IT RESOLVED THAT THE** Council of Morton Borough hereby accept(s) and adopt(s) the "Delaware County Act 537 Sewage Facilities Plan Update - Eastern Plan of Study." Prepared by the Delaware County Planning Department, February 2002, as the official plan for sewage facilities in compliance with the Pennsylvania Sewage Facilities Act of 1966. The Morton Borough hereby assures the Department of the complete and timely implementation of the said plan as required by law. (Section 5, Pennsylvania Sewage Facilities Act, as amended).

Morton Borough Council hereby certifies that the foregoing is a true copy of the Borough's Resolution No. 02-03, adopted March 13, 2002.

BY: 

President of Council

ATTEST: 

Borough Secretary

Approved: 

Mayor, Borough of Morton

**NETHER PROVIDENCE TOWNSHIP RESOLUTION NO. 2002-04  
ADOPTING THE DELAWARE COUNTY SEWAGE FACILITIES PLAN  
EASTERN PLAN STUDY**

**RESOLUTION OF THE Commissioners of Nether Providence Township, Delaware County, Pennsylvania**

**WHEREAS**, Section 5 of the Act of January 24, 1966, P. L. 1535, No. 537, known as the "Pennsylvania Sewage Facilities Act," as amended, and the Rules and Regulations of the Department of Environmental Protection (Department) adopted thereunder, Chapter 71 of Title 25 of the Pennsylvania Code, require the municipality to adopt an Official Sewage Facilities Plan providing for sewage services adequate to prevent contamination of waters and/or environmental health hazards with sewage wastes, and to revise said plan whenever it is necessary to meet the sewage disposal needs of the municipality; and

**WHEREAS**, the Delaware County Planning Department, acting upon authorization from the Pennsylvania Department of Environmental Protection, did offer assistance to the municipalities in meeting their Act 537 requirements on a sub-County basis; and

**WHEREAS**, the Township of Nether Providence did authorize the County of Delaware to prepare the sewage facilities plan on its behalf; and

**WHEREAS**, the appropriate municipal officials of the Township of Nether Providence have reviewed the findings and recommendations of that plan and find it to conform to applicable zoning subdivision, other municipal ordinances and plans, and to a comprehensive program of pollution control and water quality management.

**NOW, THEREFORE BE IT RESOLVED THAT**, the Commissioners of the Township of Nether Providence hereby accepts and adopts the "Delaware County Act 537 Sewage Facilities Plan Update - Eastern Plan of Study," prepared by the Delaware County Planning Department, February 2002, as the official plan for sewage facilities in compliance with the Pennsylvania Sewage Facilities Act of 1966. The Township hereby assures the Department of the complete and timely implementation of the said plan as required by law, (Section 5, Pennsylvania Sewage Facilities Act, as amended), subject to Townships budgetary constraints and the Township continuing selection on how best to effectively address I & I Problems.

**RESOLVED THIS 11<sup>TH</sup> DAY OF APRIL, 2002.**

SEAL

ATTEST:

  
Township Manager

BY:

  
President of Commissioners

I, Gary J. Cummings, Manager, of Nether Providence Township hereby certify that the foregoing is a true copy of the Township's Resolution No. 2002-04, adopted April 11, 2002.

Certification:





**BOROUGH OF NORWOOD  
DELAWARE COUNTY, PENNSYLVANIA  
RESOLUTION NO. 2002-4**

**ADOPTING THE DELAWARE COUNTY SEWAGE FACILITIES PLAN  
EASTERN PLAN STUDY**

RESOLUTION OF THE Councilpersons of Norwood Borough, Delaware County, Pennsylvania.

WHEREAS, Section 5 of the Act of January 24, 1966, P.L. 1535, No. 537, known as the "Pennsylvania Sewage Facilities Act," as amended, and the Rules and Regulations of the Department of Environmental Protection (Department) adopted thereunder, Chapter 71 of Title 25 of the Pennsylvania Code, require the municipality to adopt an Official Sewage Facilities Plan providing for sewage services adequate to prevent contamination of waters and/or environmental health hazards with sewage wastes, and to revise said plan whenever it is necessary to meet the sewage disposal needs of the municipality; and

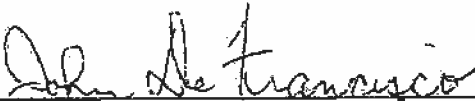
WHEREAS, the Delaware County Planning Department, acting upon authorization from the Pennsylvania Department of Environmental Protection, did offer assistance to the municipalities in meeting their Act 537 requirements on a sub-County basis; and

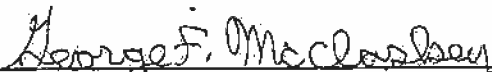
WHEREAS, the Borough of Norwood did authorize the County of Delaware to prepare the sewage facilities plan on its behalf; and

WHEREAS, the appropriate municipal officials of the Borough of Norwood have reviewed the findings and recommendations of that plan and find it to conform to applicable zoning subdivision, other municipal ordinances and plans, and to a comprehensive program of pollution control and water quality management.


NOW, THEREFORE BE IT RESOLVED THAT, the Councilpersons of the Borough of Norwood hereby accept and adopt the "Delaware County Act 537 Sewage Facilities Plan Update - Eastern Plan of Study," prepared by the Delaware County Planning Department, February, 2002, as the official plan for sewage facilities in compliance with the Pennsylvania Sewage Facilities Act of 1966. The Borough hereby assures the Department of the complete and timely implementation of the said plan as required by law, (Section 5, Pennsylvania Sewage Facilities Act, as amended), subject to Borough's budgetary constraints and the Borough's continuing selection of how best to effectively address I and I Problems.

RESOLVED THIS 22<sup>ND</sup> DAY OF APRIL, 2002.

  
John DeFrancisco, Council President

  
George F. McCloskey, Mayor, Norwood Borough

APPROVED:

  
Patricia Dunderdale, Borough Secretary

(SEAL)

Resolution No. 1480

WHEREAS, Borough Council of the Borough of Parkside, Commonwealth of Pennsylvania, in due session assembled, did agree and resolve to adopt the Delaware County Sewage Facilities Plan - Eastern Plan of Study;

WHEREAS, Section 5 of the Act of January 24, 1966, P.L. 1535, No. 537, known as the "Pennsylvania Sewage Facilities Act", as amended, and the Rules and Regulations of the Department of Environmental Protection (Department) adopted thereunder, Chapter 71 of Title 25 of the Pennsylvania Code, require the municipality to adopt an Official Sewage Plan providing for sewage services adequate to prevent contamination of waters and/or environmental health hazards with sewage wastes, and to revise said plan whenever it is necessary to meet the sewage disposal needs of the municipality; and

WHEREAS, the Delaware County Planning Department, acting upon authorization from the Pennsylvania Department of Environmental Protection, did offer assistance to the municipalities in meeting their Act 537 requirements on a sub-County basis; and

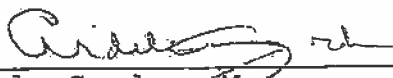
WHEREAS, Parkside Borough did authorize the County of Delaware to prepare the sewage facilities plan on its behalf; and


WHEREAS, the appropriate municipal officials of the Borough of Parkside have reviewed the findings and recommendations of that plan and find it to conform to applicable zoning, subdivision, other municipal ordinances and plans, and to a comprehensive program of pollution control and water quality management.

NOW; THEREFORE, BE IT RESOLVED THAT THE Council of Parkside Borough hereby accepts and adopts the "Delaware County Act 537 Sewage Facilities Plan Update - Eastern Plan of Study," prepared by the Delaware County Planning Department, February 2002, as the official plan for sewage facilities in compliance with the Pennsylvania Sewage Facilities Act of 1966. The Borough hereby assures the Department of the complete and timely implementation of the said plan as required by law. (Section 5, Pennsylvania Sewage Facilities Act, as amended).

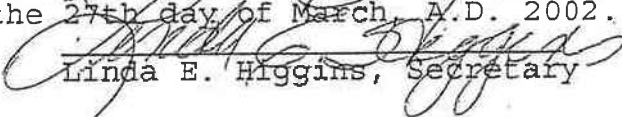
Passed and approved by the Council of the Borough of Parkside this 27th day of March, A.D. 2002.

APPROVED;

  
Ardele Gordon, Mayor

By:   
Charles McCausland, President

I hereby certify that the foregoing resolution is a true copy of Resolution No. 1480 as passed by the Council of the Borough of Parkside, Pennsylvania, on the 27th day of March, A.D. 2002.

  
Linda E. Higgins, Secretary

**RESOLUTION ADOPTING THE DELAWARE COUNTY SEWAGE  
FACILITIES PLAN – EASTERN PLAN OF STUDY**

**RESOLUTION NO. 1712**

**RESOLUTION OF THE** Council of Prospect Park Borough, Delaware County, Pennsylvania (hereinafter “the municipality”).

**WHEREAS**, Section 5 of the Act of January 24, 1966, P.L. 1535, No 537, known as the “Pennsylvania Sewage Facilities Act,” as amended, and the Rules and Regulations of the Department of Environmental Protection (Department) adopted thereunder, Chapter 71 of Title 25 of the Pennsylvania Code, require the municipality to adopt an Official Sewage Facilities Plan providing for sewage services adequate to prevent contamination of waters and/or environmental health hazards with sewage wastes, and to revise said plan whenever it is necessary to meet the sewage disposal needs of the municipality; and

**WHEREAS**, the Delaware County Planning Department, acting upon authorization from the Pennsylvania Department of Environmental Protection, did offer assistance to the municipalities in meeting their Act 537 requirements on a sub-County basis; and

**WHEREAS**, the Borough of Prospect Park did by formal Resolution No. 1650 dated July 13, 1993, authorize the County of Delaware to prepare the sewage facilities plan on its behalf; and

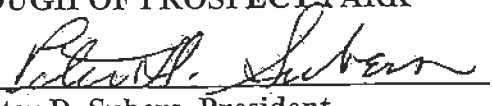
**NOW THEREFORE BE IT RESOLVED THAT THE** Council of Prospect Park Borough hereby accept and adopt the “Delaware County Act 537 Sewage Facilities Plan Update – Eastern Plan of Study,” prepared by the Delaware County Planning Department, February 2002, as the official plan for sewage facilities in compliance with the Pennsylvania Sewage Facilities Act of 1966. The Borough hereby assures the Department of the complete and timely implementation of the said plan as required by law. (Section 5, Pennsylvania Sewage Facilities Act, as amended).

I, Deborah Luty, Secretary, Prospect Park Borough, hereby certify that the foregoing is a true copy of the Borough’s Resolution No. 1712, adopted May 14, 2002.

**ADOPTED AND APPROVED** this 14<sup>TH</sup> day of MAY, 2002.

**BOROUGH OF PROSPECT PARK**

**BY:**

  
Peter D. Subers, President  
Borough Council

**BY:**

  
Donald A. Cook, Mayor

**ATTEST:**

  
Deborah A. Luty, Secretary

RESOLUTION ADOPTING THE DELAWARE COUNTY SEWAGE  
FACILITIES PLAN - EASTERN PLAN OF STUDY

RESOLUTION OF THE (Commissioners/Council) OF RADNOR  
(Township/Borough), DELAWARE COUNTY, PENNSYLVANIA (hereinafter "the  
municipality").

WHEREAS, Section 5 of the Act of January 24, 1966, P.L. 1535, No 537, known as the "Pennsylvania Sewage Facilities Act," as amended, and the Rules and Regulations of the Department of Environmental Protection (Department) adopted thereunder, Chapter 71 of Title 25 of the Pennsylvania Code, require the municipality to adopt an Official Sewage Facilities Plan providing for sewage services adequate to prevent contamination of waters and/or environmental health hazards with sewage wastes, and to revise said plan whenever it is necessary to meet the sewage disposal needs of the municipality; and

WHEREAS, the Delaware County Planning Department, acting upon authorization from the Pennsylvania Department of Environmental Protection, did offer assistance to the municipalities in meeting their Act 537 requirements on a sub-County basis; and

WHEREAS, the (Township/Borough) of RADNOR did by formal resolution dated MAY 20, 2002, authorize the County of Delaware to prepare the sewage facilities plan on its behalf; and

WHEREAS, the appropriate municipal officials of the (Township/Borough) have reviewed the findings and recommendations of that plan and find it to conform to applicable zoning, subdivision, other municipal ordinances and plans, and to a comprehensive program of pollution control and water quality management.

NOW, THEREFORE, BE IT RESOLVED THAT THE (Commissioners/ Council) of (Township/Borough) hereby accept(s) and adopt(s) the "Delaware County Act 537 Sewage Facilities Plan Update - Eastern Plan of Study," prepared by the Delaware County Planning Department, February 2002, as the official plan for sewage facilities in compliance with the Pennsylvania Sewage Facilities Act of 1966. The (Township/Borough) hereby assures the Department of the complete and timely implementation of the said plan as required by law. (Section 5, Pennsylvania Sewage Facilities Act, as amended).

I, Michelle Kiley, Secretary, Radnor Township  
(Township/Borough) (Commissioners/Council) hereby certify that the foregoing is a  
true copy of the (Township's/Borough's) Resolution No. 2002-14, adopted  
MAY 20, 2002.

AUTHORIZED SIGNATURE

John Kiley

TOWNSHIP/BOROUGH SEAL

# TOWNSHIP OF RIDLEY



FOLSOM, PENNSYLVANIA

## Resolution

RESOLUTION OF THE TOWNSHIP OF RIDLEY, DELAWARE COUNTY, PENNSYLVANIA (hereinafter "the municipality").

WHEREAS, Section 5 of the Act of January 24, 2966, P.L. 1535, No. 537, known as the "Pennsylvania Sewage Facilities Act", as amended, and the Rules and Regulations of the Department of Environmental Protection (Department) adopted thereunder, Chapter 71 of Title 25 of the Pennsylvania Code, require the municipality to adopt an Official Sewage Facilities Plan providing for sewage services adequate to prevent contamination of waters and/or environmental health hazards with sewage wastes, and to revise said plan whenever it is necessary to meet the sewage disposal needs of the municipality; and

WHEREAS, the Delaware County Planning Department, acting upon authorization from the Pennsylvania Department of Environmental Protection, did offer assistance to the municipalities in meeting their Act 537 requirements on a sub-County basis; and

WHEREAS, the Township of Ridley did by formal resolution dated October 25, 1989, authorize the County of Delaware to prepare the sewage



***BOROUGH OF RIDLEY PARK  
DELAWARE COUNTY, PENNSYLVANIA***

**RESOLUTION NO. 3-02**

**A RESOLUTION OF THE COUNCIL OF THE BOROUGH OF RIDLEY PARK,  
DELAWARE COUNTY, PENNSYLVANIA, ADOPTING THE DELAWARE  
COUNTY SEWAGE FACILITIES PLAN - EASTERN PLAN OF STUDY.**

**WHEREAS**, Section 5 of the Act of January 24, 1966, P.L. 1535, No. 537, known as the "Pennsylvania Sewage Facilities Act," as amended, and the Rules and Regulations of the Department of Environmental Protection (Department) adopted thereunder, Chapter 71 of Title 25 of the Pennsylvania Code, require the municipality to adopt an Official Sewage Facilities Plan providing for sewage services adequate to prevent contamination of waters and/or environmental health hazards with sewage wastes, and to revise said plan whenever it is necessary to meet the sewage disposal needs of the municipality; and

**WHEREAS**, the Delaware County Planning Department, acting upon authorization from the Pennsylvania Department of Environmental Protection, did offer assistance to the municipalities in meeting their Act 537 requirements on a sub-County basis; and

**WHEREAS**, the Borough of Ridley Park did by formal resolution dated October 13, 1998, authorize the County of Delaware to prepare the sewage facilities plan on its behalf; and

**WHEREAS**, the appropriate municipal officials of Ridley Park Borough have reviewed the findings and recommendations of that plan and find it to conform to applicable zoning, subdivision, other municipal ordinances and plans, and to a comprehensive program of pollution control and water quality management.

1

NOW, THEREFORE, BE IT RESOLVED that the Council of Ridley Park Borough hereby accepts and adopts the "Delaware County Act 537 Sewage Facilities Plan Update - Eastern Plan of Study," prepared by the Delaware County Planning Department, February 2002, as the official plan for sewage facilities in compliance with the Pennsylvania Sewage Facilities Act of 1966. Ridley Park Borough hereby assures the Department of the complete and timely implementation of the said plan as required by law. (Section 5, Pennsylvania Sewage Facilities Act, as amended).

ADOPTED this 12<sup>th</sup> day of March, 2002.

COUNCIL OF THE  
BOROUGH OF RIDLEY PARK

By: 

Jack B. Petrie  
President of Council

Attest: 

Robert J. Poole  
Borough Manager/Secretary

(SEAL)

Approved: 

Henry A. Eberle, Jr.  
Mayor

BOROUGH OF RUTLEDGE  
DELAWARE COUNTY, PENNSYLVANIA

RESOLUTION NO. 2002-05-1

**A RESOLUTION OF THE BOROUGH OF RUTLEDGE, DELAWARE  
COUNTY, PENNSYLVANIA, ADOPTING THE DELAWARE COUNTY  
SEWAGE FACILITIES PLAN - EASTERN PLAN OF STUDY**

RESOLUTION OF THE COUNCIL OF THE BOROUGH OF RUTLEDGE, DELAWARE COUNTY, PENNSYLVANIA (hereinafter "the municipality").

**WHEREAS**, Section 5 of the Act of January 24, 1966, P.L.1535, No. 537, known as the "Pennsylvania Sewage Facilities Act," as amended, and the Rules and Regulations of the Department of Environmental Protection (Department) adopted thereunder, Chapter 71 of Title 25 of the Pennsylvania Code, require the municipality to adopt an Official Sewage Facilities Plan providing for sewage services adequate to prevent contamination of waters and/or environmental health hazards with sewage wastes, and to revise said plan whenever it is necessary to meet the sewage disposal needs of the municipality; and

**WHEREAS**, the Delaware County Planning Department acting upon authorization from the Pennsylvania Department of Environmental Protection, did offer assistance to the municipalities in meeting their Act 537 requirements on a sub-County basis; and

**WHEREAS**, the Borough of Rutledge did by formal resolution dated \_\_\_\_\_, authorize the County of Delaware to prepare the sewage facilities plan on its behalf; and

**WHEREAS**, the appropriate municipal officials of the Borough have reviewed the findings and recommendations of that plan and find it to conform to applicable zoning, subdivision, other municipal ordinances and plans, and to a comprehensive program of pollution control and water quality management.

**NOW, THEREFORE, BE IT RESOLVED THAT THE** Council for the Borough of Rutledge hereby accept(s) and adopt(s) the "Delaware County Act 537 Sewage Facilities

Plan Update - Eastern Plan of Study," prepared by the Delaware County Planning Department, February 2002, as the official plan for sewage facilities in compliance with the Pennsylvania Sewage Facilities Act of 1966. The Borough hereby assures the Department of the complete and timely implementation of the said plan as required by law. (Section 5, Pennsylvania Sewage Facilities Act, as amended).

BE IT RESOLVED by the Borough of Rutledge this 6<sup>th</sup> day of May, 2002.

**BOROUGH OF RUTLEDGE**

BY: Edward D. McLaughlin  
President of Council

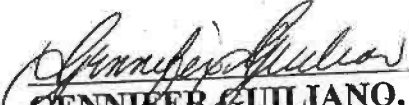
Attest: [Signature]  
Borough Secretary

THIS RESOLUTION APPROVED this 6<sup>th</sup> day of May, 2002.

Paul R. Mesconch  
Mayor

**CERTIFICATION**

I, Gennifer Guiliano, Borough Secretary of the Borough of Rutledge hereby certify that the foregoing is a true copy of the Borough's Resolution No. 2042-05-1, adopted May 6, 2002.

  
GENNIFER GUILIANO,

Borough Secretary  
Borough of Rutledge

**BOROUGH OF SHARON HILL  
DELAWARE COUNTY, PENNSYLVANIA**

**RESOLUTION NO. 253-R**

**A RESOLUTION OF THE BOROUGH OF SHARON HILL, DELAWARE  
COUNTY, PENNSYLVANIA, ADOPTING THE DELAWARE COUNTY  
SEWAGE FACILITIES PLAN - EASTERN PLAN OF STUDY**

RESOLUTION OF THE COUNCIL OF THE BOROUGH OF SHARON HILL,  
DELAWARE COUNTY, PENNSYLVANIA (hereinafter "the municipality").

**WHEREAS**, Section 5 of the Act of January 24, 1966, P.L. 1535, No. 537, known as the "Pennsylvania Sewage Facilities Act," as amended, and the Rules and Regulations of the Department of Environmental Protection (Department) adopted thereunder, Chapter 71 of Title 25 of the Pennsylvania Code, require the municipality to adopt an Official Sewage Facilities Plan providing for sewage services adequate to prevent contamination of waters and/or environmental health hazards with sewage wastes, and to revise said plan whenever it is necessary to meet the sewage disposal needs of the municipality; and

**WHEREAS**, the Delaware County Planning Department acting upon authorization from the Pennsylvania Department of Environmental Protection, did offer assistance to the municipalities in meeting their Act 537 requirements on a sub-County basis; and

**WHEREAS**, the Borough of Sharon Hill did by formal resolution dated 1971, authorize the County of Delaware to prepare the sewage facilities plan on its behalf; and

**WHEREAS**, the appropriate municipal officials of the Borough have reviewed the findings and recommendations of that plan and find it to conform to applicable zoning, subdivision, other municipal ordinances and plans, and to a comprehensive program of pollution control and water quality management.

**NOW, THEREFORE, BE IT RESOLVED THAT THE** Council for the Borough of Sharon Hill hereby accept(s) and adopt(s) the "Delaware County Act 537 Sewage