



**Comprehensive
Sanitary Sewage
Management Plan**

Allegheny County, Pennsylvania

Comprehensive Sanitary Sewage Management Plan

Prepared for

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1.0 Executive Summary

1.1 Project Scope

This report presents the results of the County's Comprehensive Sanitary Sewage Management Plan. The goals of the Plan are to:

- Identify the current physical, institutional and financial state of wastewater management within Allegheny County
- Project future wastewater management requirements based on demographic, technical and regulatory trends
- Recommend policy options and directions to Allegheny County to provide for adequate wastewater facilities and institutional capabilities to meet future needs.

The last county-wide sewage facilities plan was prepared in 1970.¹ This plan was prepared in recognition of the major regulatory changes, rapid suburban development and changes in the economic and demographic conditions of the older urban areas that have occurred during the past 30 years.

1.2 Principal Findings

All or portions of 127 of the 130 municipalities within Allegheny County are served by one or more treatment agencies. Three municipalities are served entirely by on-lot wastewater systems.² There are 35 treatment agencies providing public sewage treatment service to approximately 1.3 million people throughout 140 municipalities in Allegheny County and parts of Beaver, Butler, Westmoreland and Washington Counties. There are 49 publicly owned wastewater treatment plants (WWTP) in Allegheny County, ranging in capacity from 250³ million gallons per day (mgd) at the Allegheny County Sanitary Authority (ALCOSAN) to the 6,600 gallons per day capacity plant of Grouse Ridge in Bell Acres Borough. Twenty-three of the 49 treatment plants have capacities of one mgd or more, thereby being considered "major" plants under PaDEP regulations.

The 49 treatment plants are geographically scattered throughout the county. Except ALCOSAN, which is located on the Ohio River and serves most of the main valleys via gravity, the topography of Allegheny County encourages relatively small, localized wastewater treatment plants. This was due to the costs of pumping and transporting wastewater across local watershed boundaries and to the historic political decentralization of responsibilities for wastewater management throughout Allegheny County.

Due to the locations of existing treatment plants, most subscribing municipalities and treatment agencies are already largely arrayed in a mostly logical watershed basis. Therefore, there are significant opportunities, for efficiencies and water quality improvements if the intermunicipal institutional and financial arrangements were also focused at a watershed level. Current municipal wastewater statutes and programs do not demand or actively encourage inter-municipal cooperation within watersheds. Unless incorporated into enforceable orders by PaDEP, intermunicipal cooperative efforts depend upon the consensus and voluntary cooperation of all municipalities involved.

¹ Comprehensive Sewerage Needs Plan 1970 - 2000 prepared by Green Engineering Co.

² See figure 2-1 (pocket page)

³ Currently undergoing expansion from 200 mgd to 250 mgd.

Current total county-wide treatment capacity is 282 mgd, increasing to 332 mgd upon completion of ALCOSAN's current expansion. The annual average daily flow in 1997 county-wide was 243 mgd. Based upon the projected growth rates for each treatment agency, the total average daily flow in the design year is projected to be approximately 280 mgd. The Southwestern Pennsylvania Commission's *Cycle 5* population projections estimate county-wide service population is projected to increase by approximately 15% between 1995 and 2015 to approximately 1.54 million or an increase of 204,000.

Due to the modest population growth projections, there will generally be sufficient hydraulic capacity to treat dry weather and average day wastewater generation in the design year on a county-wide basis. The hydraulic stress put on the existing treatment facilities by the projected growth is minor compared with the capacity demands placed on the treatment plants during wet weather. County-wide, current average day capacity approximates the projected average day flow in 2015. However, the average daily flows from 13 treatment plants are projected to exceed their current average daily design capacities. The ALCOSAN plant is currently undergoing expansion to a nominal capacity of 250 mgd. Of the remaining 11 plants with projected average day capacity deficits, six are major plants (flows greater than one mgd).

Approximately 60 on-lot problem areas remain in Allegheny County as identified by the Allegheny County Health Department, the Department of Economic Development and the municipalities. These are located in 31 municipalities ranging in size from Haysville to Pittsburgh. These do not include many isolated individual failing on-lot systems.

The 35 wastewater treatment agencies in Allegheny County have a combined annual budget of approximately \$110 million. This amount includes collection system costs for systems in which the treatment authority is also responsible for collection system operation and maintenance (O&M). However, the total amount does not include collection system O&M costs for municipalities that directly maintain their collection systems. Average annual costs per household have been estimated for the 35 treatment agencies. The county-wide average⁴ cost per household is approximately \$235 annually, and ranges from \$44 to \$820. These figures compare to an estimated national average of \$265.

With isolated exceptions, the wastewater infrastructure within Allegheny County is adequate to meet the current average day dry weather needs of the current service population. The infrastructure is less adequate during wet weather, which taxes the hydraulic capacity of the collection sewers and the treatment capacities of the treatment plants to the point that overflows can occur.

The management of sewage flows during wet weather has become the driving wastewater management issue in Allegheny County as it has nationally. More specifically, the issue may be defined as the management of the volumes of storm, sewage and groundwater entering municipal sewers such that overflows from sanitary sewer systems are eliminated (or reduced) and overflows from combined systems are managed sufficiently to comply with the USEPA Combined Sewer Overflow Policy.

During wet weather and high groundwater table conditions, many municipal collection systems are hydraulically overloaded. The condition of hydraulic overload is due primarily to excessive inflow and infiltration entering the municipal system. Recurring incidences of overflows from hydraulic reliefs, surcharging manholes and basement flooding are the primary problem with systems in this condition. As of April, 1999, 41 of the 127 sewer municipalities within Allegheny County were under the Corrective Action Plan program with the Pennsylvania Department of Environmental Protection (PaDEP) due to wet weather problems. Thirty-seven of the 82 municipalities within the ALCOSAN service area are under consideration for action by the United States Environmental Protection Agency (USEPA) over sanitary sewer overflow issues. There are 43 municipalities within Allegheny County that are partially or fully served by combined sewer systems. These municipalities are

⁴ Weighted for municipal population

under Federal and state mandates to control discharges from the combined sewer overflow points within their systems.

Wet weather overflows from sanitary and combined sewer systems within Allegheny County increase risk of waterborne diseases resulting from exposure to pathogenic agents of viral, protozoan, or bacteriologic origin. Recent outbreaks of cryptosporidiosis in several metropolitan areas of the United States occurred despite the fact those water treatment regimens met currently accepted industry standards. On approximately 50 days during each of the recreational boating seasons in 1997, 1998 and 1999, the Allegheny County Health Department issued advisories warning residents to limit direct contact with river waters because of wet weather sewage overflows and sewage system bypassing. The wet weather capacity issues also have the potential to limit growth and economic development through the imposition of future connection bans and the demands on public resources and bonding capacity that could result from regulatory mandates. More important, the wet weather capacity issues are symptomatic of the long term deterioration of the County's sewerage systems and of the need for long term reinvestment.

The wet weather flow management challenge in Allegheny County has revealed that the legal, institutional and financial frameworks in which the wastewater systems operate need to be updated to reflect the current regulatory emphasis on combined sewer overflow control and the elimination of sanitary sewer overflows. Anticipated USEPA regulations covering municipal storm sewer systems and sanitary sewer systems will increase the regulatory burden on the municipalities and will require pro-active system maintenance, user regulation and data management. It is estimated that approximately 50% of extraneous clearwater flow (inflow and infiltration) in municipal collection systems is attributable to sources on private property such as deteriorated house lateral sewers. *A mechanism for financing repairs on private property is required* so that homeowners can be realistically expected to address a major source of inflow and infiltration.

Nationwide, the estimated costs of compliance with the Combined Sewer Overflow Policy have been estimated to range between \$50 and \$100 billion. Preliminary national estimates of complying with the emerging Sanitary Sewer Overflow Policy are around \$80 billion. It should be noted that these cost estimates do not include the rehabilitation of private lateral sewer repairs and do not address the need to rehabilitate and replace sewer systems due to age and deterioration.

Within Allegheny County, a reasonable order of magnitude estimate would be more than \$1 billion for short and mid term (less than 20 years) compliance with the CSO and SSO regulatory requirements throughout the County. *There is a need for a long term reinvestment* in the County's aging sewerage systems that extends beyond, and ultimately overshadows regulatory compliance in importance. To maintain the long term viability of the system, a long term (~50 years) rehabilitation will be required. County-wide, this long term reinvestment could range in cost from \$1.2 to \$5 billion. Using a mid-range estimate of \$2 billion and a fifty-year period, annual system wide costs would average \$40 million. It must be emphasized that these cost estimates are preliminary, and will change as municipal and treatment agency plans evolve.

The funding of regulatory compliance, system reinvestment and the expansion of systems to address on-lot problems is a major concern. Access to conventional funding sources such as general obligation or revenue bonds by small and low income municipalities is limited and expensive. Alternative sources such as PENNVEST have limited availability. The broad-brush estimated costs presented above *emphasize the need for new County, Commonwealth and Federal funding strategies*. There may be a need for a county level bond bank or other financing mechanism that would specifically address the needs of smaller and/or lower income municipalities and municipal authorities. There is a need for enhancement of the current PENNVEST program better to address sewer rehabilitation needs. There is also a need for innovative approaches to sewer rate stabilization such as pro-active rate increases to reduce long term borrowing costs.

Overall, the current intermunicipal service agreements do not reflect the current regulatory climate that mandates the management of combined sewer overflows and elimination of sanitary sewer overflows. Current intermunicipal service agreements do not provide an adequate basis for defining and regulating wet weather

flows between municipalities and authorities. Most intermunicipal points of connection do not have permanent flow meters, resulting in a lack of a basis to allocate costs related to wet weather flow management.

Municipal sewer use ordinances are also generally inadequate to meet current needs. *A more aggressive approach to the enforcement of inflow and infiltration (I/I)⁵ prohibitions is required*. The current widespread practice of inspections upon sale of the property results in slow and haphazard enforcement. When more aggressive enforcement is taken, the removal of storm and groundwater is generally not coordinated with local storm water management efforts to avoid introducing new storm drainage problems.

1.3 Specific Recommendations

- The wastewater management stakeholders (municipalities, County, treatment authorities, etc.) *must develop a comprehensive wastewater workplan and implementation schedule* containing an evolving consensus of how the County (and the region) should proceed with addressing wastewater management needs
- *An institutional leader and structure must emerge* to spearhead the efforts at developing a consensus strategy and workplan. The county governmental leadership (County Council and County Executive) should endorse the selected lead agency.
- *Sufficient public and private resources* (through foundations, etc.) should be provided to the designated lead agency.
- Steps should be taken to *raise the awareness* of municipal officials about the evolving USEPA sanitary sewer regulations. This awareness would allow the municipalities an opportunity for input during the rule making phase, with emphasis on the need for flexibility to account for Allegheny County's unique situations.
- Cost effective and efficient sewer rehabilitation requires an understanding of the wet weather hydraulic behavior of individual municipal systems and their interactions with interconnected systems. Obtaining this understanding will require years of flow monitoring, data quality control, analysis and dynamic computer modeling. The resources and levels of sophistication required are beyond those available to most municipalities, and hence *intermunicipal watershed-based approaches to cost and resource sharing is recommended*.
- *A County-Wide set of flow monitoring and analysis protocols* should be promulgated as Allegheny County Health Department guidelines. An example of flow monitoring protocols is the flow monitoring standards to be issued by the 3 Rivers Wet Weather Demonstration Program for use by their municipal grantees.
- A formal process for the updating, maintaining and expansion of the wastewater data bases represented by this Study and by other efforts such as the system benchmarking surveys being conducted by the 3 Rivers Wet Weather Demonstration Program should be established. *An Allegheny County wastewater facilities data base library / clearing house is recommended*. Possible physical and institutional venues include the Allegheny County Health Department, the 3 Rivers Wet Weather Demonstration Program, the Carnegie Library system or one of the universities. Foundation funding could be investigated as a potential source for the implementation of this idea.

⁵ Infiltration is groundwater entering public sewers and building service connection sewers through defective joints and broken or cracked pipe and manholes. Inflow is water discharged into public or private sewer pipes or service connections from sources such as foundation drains, roof leaders, cellar and yard drains.

- The condition of each treatment plant and collection system varies. Therefore, there is a *need for localized studies* to determine cost-effective mixes of plant expansion and collection system maintenance to eliminate sewer overflows and provide effective treatment.
- Article 14 of the Allegheny County Health Department Rules and Regulations (Sewage Management) should be revised to include *minimum provisions for municipal sewer use ordinances*, and a county-wide guidance (e.g., model ordinances) should be made available.
- The stakeholders process should be used to evaluate opportunities and impediments to revising intermunicipal agreements. This process could include legal, institutional and technical analysis by groups such as the Allegheny County Bar Association, the Engineering Society of Western Pennsylvania, the Allegheny County League of Municipalities, and other stakeholder groups. The goal of this analysis would be to *develop consensus approaches to revising the agreements*.
- A county-wide voluntary intermunicipal dispute resolution process should be established. Municipalities could bring disputes to a peer review board comprising volunteering engineers, attorneys, municipal officials, and County regulators to review and mediate disagreements. The intent of this process would be to allow the municipalities avoid costly and counterproductive litigation.
- The establishment of *county-wide guidance for new intermunicipal service agreements* through the modification of Article 14 of the Allegheny County Health Department Code is recommended.
- *Flow monitoring by impartial county-wide groups* using county-wide monitoring and data management protocols *should be available to municipalities* involved in intermunicipal disputes to establish the hydraulic behavior of the relative collection systems during wet and dry weather.
- There is a need to *develop useful county-wide estimates of wet weather conveyance and sewer rehabilitation needs* and the subsequent development of a project priority system. The development of such estimates should be a key element of the recommended County Workplan.
- *The Pennsylvania General Assembly should enact lateral repair legislation* giving municipalities (and authorities) clear powers to make repairs to private lateral sewers without assuming ownership or long term maintenance responsibilities. The legislation should also provide that municipalities would be not be liable for property damage resulting from problems with the lateral sewers after the performance testing and municipal acceptance of rehabilitation work, and that municipalities may use public funds for repairs to private property in recognition of the cost-effective public benefit of such repairs.
- The lateral legislation should also give municipalities the power to recover the costs of lateral repairs from the property owners through a special property tax assessment over a multi year period or other repayment plan, and would allow municipalities to require existing sewer laterals be repaired as necessary to reduce inflow and infiltration.
- *The PENNVEST program should consider a form of zero interest loans* to ease financing to low income municipalities and interest rebate loans (or a similar program) to encourage proactive sewer maintenance and rehabilitation efforts.
- A key component of the proposed Workplan should be the development of the institutional structure, economic analysis and draft legislation for new funding sources such as a county (or regional) bond bank.

- The municipalities and authorities should be encouraged to establish local and/or county-wide sewer rehabilitation funds through phased rate increases before the completion of planning, design and construction of major sewer projects.

1.4 Moving Forward

There is a need for county-wide and regional institutional leadership in wastewater management. The responsibilities for wastewater management in Allegheny County are widely diffused, involving the 130 municipalities, 35 treatment agencies, additional municipal collection authorities, county regulation through the Health Department, state regulation through PaDEP and federal regulation through USEPA. The political and service area boundaries of this disparate group overlap 180 watersheds. A failure to deal with our wastewater system needs rationally, cooperatively and creatively may, in the short term, lead to a loss of local control over the scope, schedule and cost of fixing the sewers. In the long term, the public health, environmental quality and economic viability of Allegheny County will be threatened.

The physical and institutional complexities of the wastewater system in Allegheny County are unique. The issues of wet weather flow management, aging sewers and the need for regional cooperation are typical of metropolitan areas throughout the United States. A number of counties, (e.g., King's County, Washington State) have implemented county-wide proactive programs.

Addressing the wastewater needs of Allegheny County will require leadership, vision and a consensus strategy. Components of this strategy could include:

- Intermunicipal watershed-based cooperation toward flow and capacity allocations analogous to the emissions trading provisions of the Clean Air Act.
- Municipal acceptance of cost allocation formulas that account for the costs of wet weather flow management
- A means to an intermunicipal prioritization of sewer rehabilitation needs based on the physical condition of municipal systems, current or potential water quality impacts, and the opportunity to achieve economies of scale (or other consensus priority factors)
- A long term (~ 50 years) commitment to sewer rehabilitation and reconstruction that will provide future generations with adequate and reliable wastewater conveyance capacities and manageable infrastructure costs.
- A long term financing mechanism
- It is critical that the stakeholders develop public support for the need to reinvest in the sewer systems. There is limited public understanding of the scope and necessity of addressing the wastewater systems beyond perhaps a vague awareness of an external regulatory mandate.
- A consensus framework and schedule for regulatory compliance between the municipalities, the treatment authorities, ACHD, PaDEP and USEPA
- Intermunicipal watershed-based cooperation and resource sharing toward regulatory requirements (e.g., flow monitoring), sewer maintenance and sewer rehabilitation
- An educational campaign to foster public understanding for the need to reinvest in the sewer systems. There is limited public understanding of the scope and necessity of addressing the wastewater systems beyond perhaps a vague awareness of an external regulatory mandate.

There needs to be a critical mass of the stakeholders in wastewater management who will establish a forum for envisioning, discussing and evolving this county-wide consensus wastewater management strategy.

The stakeholders include, but are not necessarily limited to:

- The municipalities and municipal authorities,
- The conveyance and treatment authorities such as ALCOSAN,
- The Councils of Government,
- Allegheny County and its Departments of Health and Economic Development,
- The Three Rivers Wet Weather Demonstration Program,
- The Allegheny Conference on Community Development,
- The Pennsylvania Economy League,
- Southwest Pennsylvania Commission,
- Economic development agencies,
- Environmental and Citizens Groups,
- Philanthropic Foundations, and
- The Universities.

A number of forums already exist, including the Southwest Pennsylvania Commission and the Three Rivers Wet Weather Demonstration Program. Private groups such as the Allegheny Conference are also actively considering wastewater management issues.

Over time, and with institutional leadership and nominal resources, the efforts of these groups could evolve into a detailed *Comprehensive Wastewater Workplan and Implementation Schedule*. The workplan would specify institutional responsibilities, recommend legislative needs, prioritize investment, and alternative financing mechanisms to be implemented, along with a detailed implementation schedule. The workplan would document the evolving consensus strategy for addressing wastewater needs in Allegheny County and could serve as a basis for negotiations with the regulatory agencies, with the goal of preserving local control and realistic time frames.

For progress to be made, institutional leadership and structure needs to emerge to spearhead the efforts of developing a consensus strategy and workplan. This institutional leader would provide focus and resources to work with the stakeholder groups. *For example, the 3 Rivers Wet Weather Demonstration Program and the Allegheny Conference could form a partnership to provide such leadership and structure.* The 3 Rivers Wet Weather Program could provide institutional leadership and technical support and the Allegheny Conference could provide research capabilities and their experience at bringing attention and action on important issues. This partnership could be given credibility and moral authority to lead through a public show of support for its endeavors by the County Council and County Executive.

2.0 Overview of Wastewater Management

2.1 Overview of Wastewater Management Responsibilities

Thirty-five wastewater management agencies provide public sewage treatment service to approximately 1.3 million people throughout 140 municipalities in Allegheny County and parts of Beaver, Butler, Westmoreland and Washington Counties. All or portions of 127 of the 130 municipalities within Allegheny County are served by one or more treatment agencies. Three municipalities are served entirely by on-lot wastewater systems. For the purposes of this report, a treatment agency is defined as an authority or municipality that has a permit for a publicly owned treatment works (POTW). There are 36 privately owned sewage treatment plants in Allegheny County. The wastewater treatment agencies serving each municipality are shown on Table 2-1. Thirty-four municipalities are served by more than one agency. The management agencies and the municipalities which they serve are listed on Table 2-2. The Allegheny County Sanitary Authority (ALCOSAN) is the largest treatment agency in Allegheny County, serving all or part of 82 municipalities. ALCOSAN's 1997 service population of approximately 879,000 represents approximately 66 percent of the County's 1990 population.

Service areas by treatment agency and treatment plant locations are shown on Map 2-1 (end pocket). Eight of the 35 treatment agencies have more than one treatment plant within the agency service area. The Bell Acres Municipal Authority and the McCandless Township Sanitary Authority each own four wastewater treatment plants. The Municipal Authority of the Township of Robinson and the West Mifflin Sanitary Sewer Municipal Authority each own and operate three POTWs. The Aleppo Township Authority, Moon Township Municipal Authority, Plum Borough Municipal Authority, and the Municipality of Penn Hills each own two wastewater treatment plants. All municipalities practice a watershed-based approach to wastewater treatment when feasible. For example, Jefferson Hills Borough is served by three treatment agencies: Clairton Municipal Authority, Pleasant Hills Authority, and West Elizabeth Sanitary Authority. Sewage from Jefferson Hills Borough flows by gravity to treatment facilities owned by these three treatment agencies. The collection systems and treatment plants for each treatment agency are also shown on individual treatment agency maps in Appendix A.

2.2 Wastewater Treatment Facilities

There are 49 POTWs in Allegheny County, ranging in capacity from the 6,600 gallons per day (gpd) plant of Grouse Ridge located in Bell Acres Borough to the 250 million gallons per day (mgd) plant capacity at ALCOSAN (1998 permitted capacity). Twenty-three of the 49 treatment plants have capacities of one mgd or more, thereby being considered "major" plants under PaDEP regulations. With the exception of ALCOSAN, which is located on the Ohio River and serves most of the main valleys via gravity, the topography of Allegheny County encourages relatively small, localized wastewater treatment plants. Next to ALCOSAN, the McKeesport City plant at 11.5 mgd is the second largest in the County. Including ALCOSAN and McKeesport, eight plants are at or exceed 5 mgd.

Table 2-3 summarizes the wastewater process train and receiving stream for each POTW alphabetically by the treatment agency. In conformance to the Pennsylvania Clean Streams Law and the Federal Clean Water Act, all plants provide at least secondary treatment using biochemical processes.¹ Of the 49 treatment facilities, 20 discharge to a major river (Allegheny, Monongahela, Ohio, or Youghiogheny). Most plants under 1.25 mgd

¹ Secondary treatment typically provides for approximately 85% removal of the organic and inorganic wastes in sewage.

operate in the extended aeration mode of an activated sludge biological process.² Of the 49 POTWs in Allegheny County, 47 use some form of chlorination for disinfection of the effluent stream. The remaining two plants use ultraviolet radiation for effluent disinfection. Gaseous chlorine remains in use in 21 treatment plants. In response to Clean Air Act process material safety requirements, ALCOSAN has converted its disinfection to sodium hypochlorite liquid, furthering a nationwide trend. Nine of the smallest plants use chlorine tablets. All 49 POTWs utilize landfills for primary or backup sludge disposal. Twenty-three plants haul their sludge to another plant where it is then disposed of in a landfill. In addition to landfill disposal, ALCOSAN also uses lime stabilization and beneficial reuse as cover for reclaimed strip mine lands in Ohio and incineration.

The 1997 hydraulic and organic loading to each of the POTWs was compared to the current design hydraulic and organic loading conditions. Tables 2-4 through 2-7 summarize this information for each treatment plant by treatment agency. Hydraulic and organic loadings exceeding the design criteria are shaded in gray. Permit limits for average day hydraulic loading are shown on Table 2-4, and are compared with annual average daily plant flows. The average flows for the highest consecutive three month period are also shown. Under PaDEP wastewater regulations, treatment plants are considered to be hydraulically overloaded when their monthly average daily flows exceed the permit value for three consecutive months.

The hydraulic utilization of the treatment plants is summarized on Table 2-5. The maximum consecutive three month average exceeded the permitted capacity at seven plants in 1997. These plants will require further analysis to determine the need for hydraulic expansion or flow reduction. Seventeen POTWs exceeded the permitted average monthly hydraulic loadings for one to five months. The annual average daily hydraulic loadings exceeded 75% of the permitted hydraulic capacity in 16 of the 49 plants. Average flows at four of the treatment plants exceeded 90% of permitted plant capacity. Exceeding the hydraulic limit for one or more months and the annual average flows exceeding 75% of the permitted hydraulic limit indicate that the POTWs may face excessive inflow and infiltration during wet weather (See Section 5.) and serves as an early warning that the demands for wastewater treatment may exceed capacities in the future. This situation exists at 13 treatment plants.

Organic loading data are shown on Table 2-6. Four POTWs exceeded the permitted average monthly influent organic loading capacity at least once. Three POTWs were operating at or above 75% capacity, with one POTW operating at or above 90%. The percentage of current hydraulic and organic treatment capacities utilized by the 49 plants are summarized on Table 2-7.

² Naturally occurring aquatic micro-organisms within treatment plant tankage are provided oxygen and an optimal environment to consume and stabilize organic wastes.

**Table 2-1
Treatment Service Providers per Municipality**

Municipality		Treatment Service Providers	Municipality		Treatment Service Providers	Municipality		Treatment Service Providers
1	Aleppo Township	Aleppo Township Authority Borough of Sewickley	47	Glassport Borough	Borough of Glassport The Municipal Authority of the City of McKeesport	88	Pitcairn Borough	Allegheny County Sanitary Authority
2	Aspinwall Borough	Allegheny County Sanitary Authority	48	Glenfield Township	On-lot	89	Pittsburgh, City of	Allegheny County Sanitary Authority
3	Avalon Borough	Allegheny County Sanitary Authority	49	Greentree Borough	Allegheny County Sanitary Authority	90	Pleasant Hills Borough	Pleasant Hills Authority
4	Baldwin Borough	Allegheny County Sanitary Authority Pleasant Hills Authority	50	Hampton Township	Hampton Township Municipal Authority McCandless Township Sanitary Authority	91	Plum Borough	Allegheny County Sanitary Authority Municipality of Penn Hills New Kensington Borough Plum Borough Municipal Sewer Authority
5	Baldwin Township	Allegheny County Sanitary Authority	51	Harmar Township	Allegheny Valley Joint Sewage Authority	92	Portvue Borough	The Municipal Authority of the City of McKeesport
6	Bell Acres Borough	Bell Acres Municipal Authority City of Ambridge	52	Harrison Township	Upper Allegheny Joint Sanitary Authority	93	Rankin Borough	Allegheny County Sanitary Authority
7	Bellevue Borough	Allegheny County Sanitary Authority	53	Haysville Borough	On-lot	94	Reserve Township	Allegheny County Sanitary Authority
8	Ben Avon Borough	Allegheny County Sanitary Authority	54	Heidelberg Borough	Allegheny County Sanitary Authority	95	Richland Township	Allegheny Valley Joint Sewage Authority Breakneck Creek Regional Authority Hampton Township Municipal Authority Township of Richland
9	Ben Avon Hts. Borough	Allegheny County Sanitary Authority	55	Homestead Borough	Allegheny County Sanitary Authority			
10	Bethel Park Borough	Allegheny County Sanitary Authority Bethel Park Municipal Authority Pleasant Hills Authority	56	Indiana Township	Allegheny County Sanitary Authority Allegheny Valley Joint Sewage Authority			
11	Blawnox Borough	Allegheny County Sanitary Authority	57	Ingram Borough	Allegheny County Sanitary Authority	96	Robinson Township	Allegheny County Sanitary Authority Coraopolis Borough Municipal Authority Moon Township Municipal Authority The Mun. Authority of the Twp. Of Robinson
12	Brackenridge Borough	Upper Allegheny Joint Sanitary Authority	58	Jefferson Hills Borough	Clairton Municipal Authority Pleasant Hills Authority West Elizabeth Sanitary Authority			
13	Braddock Borough	Allegheny County Sanitary Authority	59	Kennedy Township	Allegheny County Sanitary Authority	97	Ross Township	Allegheny County Sanitary Authority McCandless Township Sanitary Authority
14	Braddock Hills Borough	Allegheny County Sanitary Authority	60	Kilbuck Township	Allegheny County Sanitary Authority			
15	Bradford Woods Borough	McCandless Township Sanitary Authority	61	Leet Township	Municipal Authority of the Borough of Leetsdale City of Ambridge	98	Roslyn Farms Borough	McCandless Township Sanitary Authority
16	Brentwood Borough	Allegheny County Sanitary Authority	62	Leetsdale Borough	Municipal Authority of the Borough of Leetsdale	99	Scott Township	Allegheny County Sanitary Authority
17	Bridgeville Borough	Allegheny County Sanitary Authority	63	Liberty Borough	The Municipal Authority of the City of McKeesport	100	Sewickley Borough	Sewickley Hills Borough
18	Carnegie Borough	Allegheny County Sanitary Authority	64	Lincoln Borough	Elizabeth Borough Municipal Authority Lincoln Borough	101	Sewickley Heights Borough	Aleppo Township Authority (small area) majority on-lot
19	Castle Shannon Borough	Allegheny County Sanitary Authority				102	Sewickley Hills Borough	Sewickley Hills Borough
20	Chalfant Borough	Allegheny County Sanitary Authority	65	Marshall Township	Municipal Sewer and Water Authority of Cranberry Township McCandless Township Sanitary Authority	103	Shaler Township	Allegheny County Sanitary Authority
21	Cheswick Borough	Allegheny Valley Joint Sewage Authority				104	Sharpsburg Borough	Allegheny County Sanitary Authority
22	Churchill Borough	Allegheny County Sanitary Authority	66	McCandless, Town of	Allegheny County Sanitary Authority McCandless Township Sanitary Authority	105	South Fayette Township	Allegheny County Sanitary Authority
23	Clairton, City of	Clairton Municipal Authority	67	McDonald Borough	Allegheny County Sanitary Authority	106	South Park Township	Bethel Park Municipal Authority Clairton Municipal Authority Pleasant Hills Authority
24	Collier Township	Allegheny County Sanitary Authority The Mun. Authority of the Twp. Of Robinson	68	McKees Rocks, Borough of	Allegheny County Sanitary Authority			
25	Coraopolis Borough	Coraopolis Borough Municipal Authority	69	McKeesport, City of	The Municipal Authority of the City of McKeesport	107	South Versailles Township	South Versailles Township
26	Crafton Borough	Allegheny County Sanitary Authority	70	Millvale Borough	Allegheny County Sanitary Authority	108	Springdale Borough	Allegheny Valley Joint Sewage Authority
27	Crescent Township	Crescent South Heights Municipal Authority	71	Monroeville, Municipality of	Allegheny County Sanitary Authority	109	Springdale Township	Allegheny Valley Joint Sewage Authority
28	Dormont Borough	Allegheny County Sanitary Authority	72	Moon Township	Coraopolis Borough Municipal Authority Crescent South Heights Municipal Authority Moon Township Municipal Authority	110	Stowe Township	Allegheny County Sanitary Authority
29	Dravosburg Borough	Dravosburg Borough				111	Swissvale Borough	Allegheny County Sanitary Authority
30	Duquesne, City of	City of Duquesne	73	Mt. Lebanon Municipality	Allegheny County Sanitary Authority	112	Tarentum Borough	Upper Allegheny Joint Sanitary Authority
31	East Deer Township	Upper Allegheny Joint Sanitary Authority	74	Mt. Oliver Borough	Allegheny County Sanitary Authority	113	Thornburg Borough	Allegheny County Sanitary Authority
32	East McKeesport Borough	Allegheny County Sanitary Authority The Municipal Authority of the City of McKeesport	75	Munhall Borough	Allegheny County Sanitary Authority	114	Trafford Borough	Allegheny County Sanitary Authority
33	East Pittsburgh Borough	Allegheny County Sanitary Authority	76	Neville Township	Allegheny County Sanitary Authority	115	Turtle Creek Borough	Allegheny County Sanitary Authority
34	Edgewood Borough	Allegheny County Sanitary Authority	77	North Braddock Borough	Allegheny County Sanitary Authority	116	Upper St. Clair Township	Allegheny County Sanitary Authority
35	Edgeworth Borough	Borough of Sewickley Municipal Authority of the Borough of Leetsdale	78	North Fayette Township	Allegheny County Sanitary Authority Moon Township Municipal Authority The Mun. Authority of the Twp. Of Robinson	117	Verona Borough	Allegheny County Sanitary Authority
36	Elizabeth Borough	Elizabeth Borough Municipal Authority				118	Versailles Borough	The Municipal Authority of the City of McKeesport
37	Elizabeth Township	Elizabeth Borough Municipal Authority Elizabeth Township Sanitary Authority The Municipal Authority of the City of McKeesport	79	North Versailles Township	Allegheny County Sanitary Authority The Municipal Authority of the City of McKeesport	119	Wall Borough	Allegheny County Sanitary Authority
38	Emsworth Borough	Allegheny County Sanitary Authority				120	West Deer Township	Allegheny Valley Joint Sewage Authority Deer Creek Drainage Basin Authority
39	Etna Borough	Allegheny County Sanitary Authority	80	Oakdale Borough	Allegheny County Sanitary Authority	121	West Elizabeth Borough	West Elizabeth Sanitary Authority
40	Fawn Township	Upper Allegheny Joint Sanitary Authority	81	Oakmont Borough	Borough of Oakmont	122	West Homestead Borough	Allegheny County Sanitary Authority
41	Findlay Township	Moon Township Municipal Authority Township of Findlay	82	O'Hara Township	Allegheny County Sanitary Authority	123	West Mifflin Borough	Allegheny County Sanitary Authority West Mifflin Sanitary Sewer Municipal Authority
42	Forest Hills Borough	Allegheny County Sanitary Authority	83	Ohio Township	Allegheny County Sanitary Authority Ohio Township Sanitary Authority	124	West View Borough	Allegheny County Sanitary Authority
43	Forward Township	Elizabeth Borough Municipal Authority Elizabeth Township Sanitary Authority	84	Osborne Borough	Borough of Sewickley	125	Whitaker Borough	Allegheny County Sanitary Authority
44	Fox Chapel Borough	Allegheny County Sanitary Authority	85	Penn Hills, Municipality of	Allegheny County Sanitary Authority Municipality of Penn Hills	126	White Oak Borough	The Municipal Authority of the City of McKeesport North Huntingdon Township
45	Franklin Park Borough	Allegheny County Sanitary Authority McCandless Township Sanitary Authority	86	Pennsbury Village Borough	Pennsbury Borough	127	Whitehall Borough	Allegheny County Sanitary Authority Pleasant Hills Authority
46	Frazer Township	On-lot (in Upper Allegheny service area)	87	Pine Township	Municipal Sewer and Water Authority of Cranberry Township McCandless Township Sanitary Authority	128	Wilkins Township	Allegheny County Sanitary Authority
						129	Wilksburg Borough	Allegheny County Sanitary Authority
						130	Wilmerding Borough	Allegheny County Sanitary Authority

**Table 2-2
Municipalities Served per Treatment Service Provider**

Treatment Service Provider	Municipality	Treatment Service Provider	Municipality	Treatment Service Provider	Municipality		
Aleppo Township Authority	Aleppo Township		Rankin Borough	Borough of Glassport	Glassport Borough		
	Sewickley Heights Borough		Reserve Township	Hampton Township Municipal Authority	Hampton Township		
Allegheny County Sanitary Authority	Aspinwall Borough		Robinson Township	Municipal Authority of the Borough of Leetsdale	Richland Township		
	Avalon Borough		Ross Township		Edgeworth Borough		
	Baldwin Borough		Rosslyn Farms Borough		Leet Township		
	Baldwin Township		Scott Township		Leetsdale Borough		
	Bellevue Borough		Shaler Township		Borough of Lincoln	Lincoln Borough	
	Ben Avon Borough		Sharpsburg Borough		McCandless Township Sanitary Authority	Bradford Woods Borough	
	Ben Avon Hts. Borough		South Fayette Township			Franklin Park Borough	
	Bethel Park Borough		Stowe Township			Hampton Township	
	Blawnox Borough		Swissvale Borough			Marshall Township	
	Braddock Borough		Thornburg Borough			McCandless, Town of	
	Braddock Hills Borough		Trafford Borough	Pine Township			
	Brentwood Borough		Turtle Creek Borough	Ross Township			
	Bridgeville Borough		Upper St. Clair Township	The Municipal Authority of the City of McKeesport		East McKeesport Borough	
	Carnegie Borough		Verona Borough			Elizabeth Township	
	Castle Shannon Borough		Wall Borough			Glassport Borough	
	Chalfant Borough		West Homestead Borough		Liberty Borough		
	Churchill Borough		West Mifflin Borough		McKeesport, City of		
	Collier Township		West View Borough		North Versailles Township		
	Crafton Borough		Whitaker Borough		Portvue Borough		
	Dormont Borough		Whitehall Borough		Versailles Borough		
	East McKeesport Borough		Wilkins Township		White Oak Borough		
	East Pittsburgh Borough		Wilksburg Borough		Moon Township Municipal Authority	Findlay Township	
	Edgewood Borough		Wilmerding Borough	Moon Township			
	Emsworth Borough		Cheswick Borough	North Fayette Township			
	Etna Borough		Allegheny Valley Joint Sewage Authority	Harmar Township	Borough of Oakmont	Oakmont Borough	
	Forest Hills Borough			Indiana Township	Ohio Township Sanitary Authority	Ohio Township	
	Fox Chapel Borough			Richland Township	Municipality of Penn Hills	Penn Hills, Municipality of	
	Franklin Park Borough			Springdale Borough		Plum Borough	
	Greentree Borough			Springdale Township	Pennsbury Borough	Pennsbury Village Borough	
	Heidelberg Borough			West Deer Township	Pleasant Hills Authority	Baldwin Borough	
	Homestead Borough			Bell Acres Municipal Authority		Bethel Park Borough	
	Indiana Township			Bethel Park Municipal Authority		Jefferson Hills Borough	
	Ingram Borough			Clairton Municipal Authority		Pleasant Hills Borough	
	Kennedy Township					Clairton, City of	South Park Township
	Kilbuck Township		Finleyville Borough			Whitehall Borough	
	McCandless, Town of		Jefferson Hills Borough			Plum Borough Municipal Sewer Authority	Plum Borough
	McDonald Borough		North Strabane Township				Murrysville, Municipality of
	McKees Rocks, Borough of		Nottingham Township				Richland Township
	Millvale Borough		Peters Township			The Mun. Authority of the Twp. of Robinson	Collier Township
	Monroeville, Municipality of		South Park Township		North Fayette Township		
	Mt. Lebanon Municipality		Union Township		Robinson Township		
	Mt. Oliver Borough		Coraopolis Municipal Sanitary Authority		Coraopolis Borough	Borough of Sewickley	Aleppo Township
	Munhall Borough			Moon Township	Edgeworth Borough		
Neville Township	Robinson Township	Osborne Borough					
North Braddock Borough	Crescent South Heights Municipal Authority	Crescent Township	Sewickley Borough	Sewickley Borough			
North Fayette Township		Hopewell Borough	Sewickley Hills Borough	Sewickley Hills Borough			
North Huntingdon Township		Moon Township	South Versailles Township	South Versailles Township			
North Versailles Township		South Heights Borough	Upper Allegheny Joint Sanitary Authority	Brackenridge Borough			
Oakdale Borough	Deer Creek Drainage Basin Authority	Buffalo Township					
O'Hara Township	Dravosburg Borough	East Deer Township					
Ohio Township	City of Duquesne	Fawn Township					
Penn Hills, Municipality of	Elizabeth Borough Municipal Authority	Harrison Township					
Penn Township		Elizabeth Borough		Tarentum Borough			
Peters Township		Elizabeth Township		Jefferson Hills Borough			
Pitcairn Borough		Forward Township		West Elizabeth Borough			
Pittsburgh, City of	Lincoln Borough	West Elizabeth Sanitary Authority		West Elizabeth Borough			
Plum Borough	Elizabeth Township Sanitary Authority			West Mifflin Sanitary Sewer Municipal Authority	West Mifflin Borough		
	Township of Findlay	Findlay Township					

**Table 2-4
Treatment Plant Hydraulic Loading Permit Limits and Hydraulic Loading Summary**

Treatment Agency	Treatment Plant	Design Hydraulic Loading	1997 Hydraulic Loading (mgd)												Average	% Utilization	Max Consecutive 3 Month Average
			January	February	March	April	May	June	July	August	September	October	November	December			
Aleppo Township Authority	I-79 North Properties STP	0.05	0.011	0.02	0.014	0.022	0.014	0.019	0.016	0.024	0.025	0.018	0.011	0.002	0.016	33%	0.0223
	Sewickley Heights Manor STP	0.084	0.041	0.055	0.061	0.052	0.056	0.043	0.025	0.026	0.037	0.059	0.052	0.03	0.045	53%	0.0563
Allegheny County Sanitary Authority	ALCOSAN STP	200	196.6	208.7	215.5	181.9	188.7	200.7	163.8	173.4	164.6	200.5	200.5	192.2	189.691	95%	206.9
Allegheny Valley Joint Sewage Authority	Allegheny Valley Jt. Sewage Auth. STP	5.1	2.976	3.354	4.558	3.566	4.298	4.111	3.024	3.372	3.189	2.91	4.899	3.926	3.682	72%	4.141
Bell Acres Municipal Authority	Grouse Ridge STP	0.00665	0.005	0.005	0.005	0.005	0.003	0.005	0.004	0.004	0.003	0.003	0.003	0.004	0.0041	61%	0.005
	Sewickley Heights #1 STP	0.016	0.009	0.009	0.009	0.009	0.008	0.009	0.006	0.006	0.008	0.008	0.008	0.009	0.008	51%	0.009
	Sewickley Heights #2 STP	0.028	0.004	0.004	0.004	0.005	0.003	0.004	0.004	0.004	0.015	0.015	0.014	0.015	0.008	27%	0.0147
	Sewickley Heights #3 STP	0.008	0.004	0.004	0.004	0.004	0.003	0.004	0.005	0.005	0.006	0.003	0.004	0.005	0.004	53%	0.0053
Bethel Park Municipal Authority	Piney Fork STP	4.1	3.917	4.39	1.988	2.738	3.42	4.103	2.709	2.909	2.648	2.396	4.316	3.656	3.266	80%	3.456
Clairton Municipal Authority	Clairton STP	6.0	4.27	4.65	5.31	3.65	4.39	3.8	2.99	3.47	3.15	2.97	4.39	3.99	3.919	65%	4.743
Coraopolis Municipal Sanitary Authority	Coraopolis Water Pollution Control Facility	4.34	3.32	3.789	4.494	3.254	3.527	3.542	2.455	2.528	2.647	2.436	3.797	3.211	3.250	75%	3.868
Crescent South Heights Municipal Authority	Crescent South Heights Municipal Authority STP	0.396	0.358	0.425	0.549	0.322	0.43	0.415	0.2533	0.28	0.276	0.242	0.428	0.332	0.359	91%	0.444
Deer Creek Drainage Basin Authority	Hampshire Estates STP	0.04	0.0096	0.0096	0.0096	0.0096	0.0096	0.0096	0.0096	0.0096	0.0096	0.0096	0.0096	0.0096	0.010	24%	0.0096
Dravosburg Borough	Dravosburg STP	0.48	0.438	0.44	0.484	0.459	0.4	0.475	0.4	0.366	0.319	0.319	0.39	0.401	0.408	85%	0.461
City of Duquesne	Duquesne STP	2.0	0.625	0.673	0.773	0.551	0.97	0.889	0.733	0.696	0.556	0.502	0.91	0.702	0.715	36%	0.864
Elizabeth Borough Municipal Authority	Elizabeth Borough STP	1.2	0.89	1.091	1.37	0.74	0.98	0.96	0.61	0.69	0.73	0.615	1.331	1.01	0.918	77%	1.117
Elizabeth Township Sanitary Authority	Buena Vista STP	1.4	1.035	1.076	1.107	0.961	0.978	1.06	0.956	0.748	0.722	0.659	0.912	0.923	0.928	66%	1.072
Township of Findlay	Clinton Mobile Home Park STP	0.01	0.0052	0.0029	0.0114	0.0034	0.0023	0.00022	0.0017	0.0021	0.0082	0.0111	0.003	0.0026	0.005	45%	0.0074
Borough of Glassport	Glassport Borough STP	1.2	0.88	0.93	1.08	0.69	0.87	0.86	0.88	0.84	1.06	0.92	0.86	0.896	75%	0.96	
Hampton Township Municipal Authority	Allison Park STP	3.4	2.15	2.26	2.65	2.28	2.3	1.84	2.02	1.98	2.1	2.36	2.48	1.83	2.188	64%	2.41
Municipal Authority of the Borough of Leetsdale	Leetsdale Borough STP	0.775	0.554	0.693	1.085	0.731	0.841	0.79	0.514	0.579	0.542	0.489	0.775	0.668	0.688	89%	0.886
Borough of Lincoln	Virginia Drive STP	0.0088	No Data	No Data	No Data	0.003	0.003	0.004	0.005	0.004	0.004	0.003	0.003	0.003	0.004	40%	0.0043
McCandless Township Sanitary Authority	A & B STP	0.4	0.129	0.152	0.191	0.104	0.16	0.14	0.077	0.095	0.085	0.077	0.183	0.144	0.128	32%	0.208
	Longvue #1 STP	1.2	1.019	1.134	1.292	0.846	1.187	1.062	0.745	0.837	0.78	0.756	1.207	0.98	0.987	82%	1.148
	Longvue #2 STP	0.1	0.06	0.071	0.096	0.042	0.068	0.06	0.028	0.039	0.034	0.026	0.082	0.048	0.055	55%	0.076
	Pine Creek STP	6.0	3.405	3.26	3.746	2.892	3.487	3.307	2.37	2.661	2.653	2.552	3.195	2.834	3.009	50%	5.206
The Municipal Authority of the City of McKeesport	McKeesport WPCP	11.5	10.1	10.6	11.5	8.4	9.5	9.9	8.1	8.2	7.9	7.5	10.2	9.4	9.275	81%	10.73
Moon Township Municipal Authority	Flaugherty Run STP	1.0	0.36	0.35	0.4	0.3	0.37	0.41	0.26	0.33	0.33	0.35	0.39	0.31	0.347	35%	0.368
	Montour Run WPCP	6.2	3.44	3.76	4.3	3.44	4.97	4.62	3.38	3.54	3.38	3.16	4.44	3.75	3.848	62%	4.34
Borough of Oakmont	Oakmont Borough STP	1.2	1.05	1.2	1.4	1.0	1.4	1.5	1.04	1.1	0.96	0.92	1.29	1.0	1.155	96%	1.313
Ohio Township Sanitary Authority	Windy Knoll STP	0.1	0.057	0.048	0.048	0.045	0.042	0.05	0.03	0.03	0.075	0.0341	0.035	0.035	0.044	44%	0.051
Municipality of Penn Hills	Lincoln Road STP	0.24	0.083	0.107	0.143	0.083	0.078	0.103	0.054	0.06	0.064	0.065	0.124	0.075	0.087	36%	0.111
	Plum Creek STP	3.7	1.9	2.34	2.963	1.55	2.253	2.2531	1.3	1.431	1.27	1.103	2.5	1.713	1.881	51%	2.401
Pennsbury Borough	Pennsbury Village STP	0.17	0.065	0.115	0.065	0.06	0.065	0.055	0.055	0.052	0.048	0.048	0.068	0.065	0.063	37%	0.0817
Pleasant Hills Authority	Pleasant Hills STP	5.0	2.447	2.862	3.595	1.991	2.684	3.138	1.903	2.092	1.931	1.678	3.594	2.547	2.539	51%	2.968
Plum Borough Municipal Authority	Holiday Park STP	1.52	1.239	1.355	1.59	0.959	1.466	1.38	0.907	1.042	0.954	0.883	1.775	1.332	1.240	82%	1.395
	Laurel Gardens STP	0.014	0.014	0.006	0.008	0.005	0.005	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.007	48%	0.009
Township of Richland	Fairwinds STP	0.052	0.015	0.016	0.19	0.013	0.016	0.014	0.012	0.012	0.013	0.017	0.015	0.015	0.029	56%	0.0737
The Mun. Authority of the Twp. Of Robinson	Campbells Run STP	1.0	0.816	0.818	0.867	0.601	0.715	0.713	0.649	0.69	0.788	0.7	0.79	0.673	0.735	74%	0.834
	Covi - Douglas STP	0.1583	0.119	0.126	0.166	0.091	0.154	0.144	0.083	0.095	0.091	0.079	0.184	0.117	0.121	76%	0.137
	Moon Run STP	0.25	0.231	0.239	0.266	0.192	0.22	0.226	0.168	0.171	0.186	0.178	0.264	0.211	0.213	85%	0.245
Borough of Sewickley	Sewickley Borough STP	0.9	0.57	0.62	0.86	0.57	0.63	0.6	0.59	0.62	0.61	0.55	0.65	0.52	0.616	68%	0.69
Sewickley Hills Borough	Sewickley Hills Borough STP	0.018	No Data	0.015	0.017	0.016	0.015	0.017	0.015	0.015	0.015	0.015	0.015	0.015	0.015	86%	0.016
South Versailles Township	South Versailles Township STP	0.03	0.007	0.007	0.014	0.004	0.003	0.003	0.002	0.045	0.003	0.001	0.011	0.006	0.009	29%	0.0167
Upper Allegheny Joint Sanitary Authority	Upper Allegheny Jt. San. Auth. STP	6.0	5.2	6.5	7.6	4.8	5.9	5.5	2.9	3.4	3.2	3.0	6.0	5.8	4.983	83%	6.433
West Elizabeth Sanitary Authority	West Elizabeth Borough STP	0.5	0.401	0.473	0.44	0.437	0.477	0.422	0.311	0.424	0.348	0.299	0.462	0.401	0.408	82%	0.451
West Mifflin Sanitary Sewer Municipal Authority	Kenmore Manor STP	0.48	0.053	0.06	0.079	0.046	0.116	0.128	0.106	0.118	0.043	0.031	0.087	0.014	0.073	15%	0.117
	New England STP	1.2	0.693	0.818	0.99	0.679	0.833	0.975	0.625	0.707	0.64	0.518	0.857	0.623	0.747	62%	0.834
	Thompson Run STP	2.5	2.47	2.683	2.874	2.13	2.39	2.999	2.4	2.188	1.85	1.833	2.81	2.05	2.390	96%	2.676

**Table 2-5
Hydraulic Loading Status Summary**

Treatment Agency	Treatment Plant	Average Flows > 75% Permitted Capacity	Average Flows > 90% Permitted Capacity	Average Flows > 100% Permitted Capacity	Max. Consecutive 3 Month Average > Permitted Capacity	Months With Average Flows Exceeding Permitted Capacity
Aleppo Township Authority	I-79 North Properties STP					
	Sewickley Heights Manor STP					
Allegheny County Sanitary Authority	ALCOSAN STP					5
Allegheny Valley Joint Sewage Authority	Allegheny Valley Jt. Sewage Auth. STP					
Bell Acres Municipal Authority	Grouse Ridge STP					
	Sewickley Heights #1 STP					
	Sewickley Heights #2 STP					
	Sewickley Heights #3 STP					
Bethel Park Municipal Authority	Piney Fork STP					3
Clairton Municipal Authority	Clairton STP					
Coraopolis Municipal Sanitary Authority	Coraopolis Water Pollution Control Facility					1
Crescent South Heights Municipal Authority	Crescent South Heights Municipal Authority STP					5
Deer Creek Drainage Basin Authority	Hampshire Estates STP					
Dravosburg Borough	Dravosburg STP					1
City of Duquesne	Duquesne STP					
Elizabeth Borough Municipal Authority	Elizabeth Borough STP					2
Elizabeth Township Sanitary Authority	Buena Vista STP					
Township of Findlay	Clinton Mobile Home Park STP					2
Borough of Glassport	Glassport Borough STP					
Hampton Township Municipal Authority	Allison Park STP					
Municipal Authority of the Borough of Leetsdale	Leetsdale Borough STP					3
Borough of Lincoln	Virginia Drive STP					
McCandless Township Sanitary Authority	A & B STP					
	Longvue #1 STP					2
	Longvue #2 STP					
	Pine Creek STP					
The Municipal Authority of the City of McKeesport	McKeesport WPCP					
Moon Township Municipal Authority	Flaugherty Run STP					
	Montour Run WPCP					
Borough of Oakmont	Oakmont Borough STP					4
Ohio Township Sanitary Authority	Windy Knoll STP					
Municipality of Penn Hills	Lincoln Road STP					
	Plum Creek STP					
Pennsbury Borough	Pennsbury Village STP					
Pleasant Hills Authority	Pleasant Hills STP					
Plum Borough Municipal Authority	Holiday Park STP					2
	Laurel Gardens STP					
Township of Richland	Fairwinds STP					1
The Mun. Authority of the Twp. Of Robinson	Campbells Run STP					
	Covi - Douglas STP					2
	Moon Run STP					2
Borough of Sewickley	Sewickley Borough STP					
Sewickley Hills Borough	Sewickley Hills Borough STP					
South Versailles Township	South Versailles Township STP					1
Upper Allegheny Joint Sanitary Authority	Upper Allegheny Jt. San. Auth. STP					2
West Elizabeth Sanitary Authority	West Elizabeth Borough STP					
West Mifflin Sanitary Sewer Municipal Authority	Kenmore Manor STP					
	New England STP					
	Thompson Run STP					4
Count		16	4	0	7	17

**Table 2-6
Treatment Plant Permit Limit, Organic Loading, and Compliance Status Summary**

Treatment Agency	Treatment Plant	Design Organic Loading	1997 Organic Loading (lbs/day)												Average
			January	February	March	April	May	June	July	August	September	October	November	December	
Aleppo Township Authority	I-79 North Properties STP	85	19	34	24	38	24	32	27	41	42	30	19	34	30
	Sewickley Heights Manor STP	205	100	133	148	125	136	104	60	64	89	144	125	68	108
Allegheny County Sanitary Authority	ALCOSAN STP	245,000	187,031	182,868	147,464	162,421	168,493	140,687	161,295	159,173	160,710	184,621	192,415	194,073	170,104
Allegheny Valley Joint Sewage Authority	Allegheny Valley Jt. Sewage Auth. STP	8,100	3,811	3,925	7,334	5,416	6,859	7,363	9,166	8,267	8,437	5,034	6,572	4,948	6,428
Bell Acres Municipal Authority	Grouse Ridge STP ^{1,2}	14	1.9	1.5	2.1	3.6	0.8	5.4	2.2	2.2	0.5	0.8	0.2	1.1	1.9
	Sewickley Heights #1 STP ^{1,2}	33	1.5	2.0	2.0	3.5	1.5	3.0	1.5	1.2	0.9	0.9	16.2	2.7	3.1
	Sewickley Heights #2 STP ^{1,2}	58	0.7	0.7	1.1	3.3	0.6	0.7	0.9	0.5	2.1	0.8	1.1	4.5	1.4
	Sewickley Heights #3 STP ^{1,2}	17	0.7	1.1	1.2	1.1	0.9	1.1	1.0	1.1	1.7	0.9	0.9	2.1	1.1
Bethel Park Municipal Authority	Piney Fork STP	6,155	4,714	5,198	4,915	3,522	3,621	4,278	4,257	3,662	3,981	3,627	5,050	4,433	4,271
Clairton Municipal Authority	Clairton STP	10,000	5,338.2	3,742.4	3,786.4	2,718.4	3,943.2	1,584.6	2,057.3	2,485.9	2,713.8	3,002.1	3,895.6	3,653.8	3,243.5
Coraopolis Municipal Sanitary Authority	Coraopolis Water Pollution Control Facility	5,808	3,837	3,337	4,062	3,774	3,455	2,642	2,494	2,549	2,867	2,972	3,851	3,410	3,271
Crescent South Heights Municipal Authority	Crescent South Heights Municipal Authority STP	565	510	526	627	371	537	491	385	414	406	452	394	437	463
Deer Creek Drainage Basin Authority	Hampshire Estates STP ¹	83.4	14.4	14.4	14.4	14.4	14.4	14.4	14.4	14.4	14.4	14.4	14.4	14.4	14.4
Dravosburg Borough	Dravosburg STP	2,780	56.6	45.1	31.9	82.2	107.2	83.3	111.5	98.6	98.4	114.4	128.2	133.3	90.9
City of Duquesne	Duquesne STP	2,780	581.2	616.3	694.9	510.5	897.2	835.6	656.6	611.8	492.5	381.4	800.7	606.5	640.4
Elizabeth Borough Municipal Authority	Elizabeth Borough STP	1,100	290	365	450	321	392	357	247	266	295	240	488	350	338
Elizabeth Township Sanitary Authority	Buena Vista STP	2,000	535	449	379	585	465	548	734	487	530	462	426	447	504
Township of Findlay	Clinton Mobile Home Park STP	16.7	6.8	3	11.8	2.8	1.6	1.8	2.1	2.1	No Data	No Data	2.4	3	3.7
Borough of Glassport	Glassport Borough STP ¹	2502	668	489	775	432	631	316	477	514	511	407	575	775	547
Hampton Township Municipal Authority	Allison Park STP	4,938	2,727	2,975	3,605	2,796	3,522	2,532	2,706	2,795	2,578	2,853	2,958	3,159	2,934
Municipal Authority of the Borough of Leetsdale	Leetsdale Borough STP	875	598.5	545	653.5	770.2	619.5	560.75	657.6	575.5	564	608.5	671	729.8	629.5
Borough of Lincoln	Virginia Drive STP ^{1,2}	18.3	No Data	No Data	No Data	5.3	8.2	3.9	6.5	5.3	5.9	7.1	2.4	2.5	5.2
McCandless Township Sanitary Authority	A & B STP	680	115	147	175	157	162	148	181	196	133	149	51	305	160
	Longvue #1 STP	2,040	1,310	992	909	866	906	872	1,089	789	889	1,034	1,236	839	977.6
	Longvue #2 STP	170	26	45	48	21	38	26	15	23	19	19	41	48	30.75
	Pine Creek STP	10,200	3,966	4,344	4,053	3,600	4,702	3,929	5,468	4,380	4,003	4,650	4,462	5,089	4,387
The Municipal Authority of the City of McKeesport	McKeesport WPCP	19,500	5,840	5,800	5,010	6,334	5,794	6,383	6,055	5,993	6,873	7,416	6,321	6,572	6,199
Moon Township Municipal Authority	Flaugherty Run STP	2085	546	565	727	377	391	528	403	409	551	618	552	459	510
	Montour Run WPCP	10,200	5,254	5,217	7,029	5,235	5,079	5,825	5,139	4,977	6,957	5,124	5,869	6,354	5,671
Borough of Oakmont	Oakmont Borough STP	2,040	1,153	1,408	1,476	1,157	1,404	1,582	1,083	1,141	1,319	1,113	1,325	1,281	1,287
Ohio Township Sanitary Authority	Windy Knoll STP	170	85.5	48.7	58.3	58.8	47.1	45.6	34.9	41	120.5	45.4	50.4	48.8	57.1
Municipality of Penn Hills	Lincoln Road STP	408	122	45	167	74	139	61	85	404	89	191	206	110	141.1
	Plum Creek STP	10,200	2,265	2,315	2,621	1,899	1,925	2,876	1,314	2,150	1,519	1,225	895	1,326	1,861
Pennsbury Borough	Pennsbury Village STP ^{1,2}	354.4	10.8	19.1	15.3	10.7	10.8	11.5	9.2	8.7	7.9	6.3	7.5	8.7	10.5
Pleasant Hills Authority	Pleasant Hills STP	7,004	2,000	2,100	2,700	1,800	3,200	2,430	2,250	2,050	2,190	2,110	3,150	2,190	2,350
Plum Borough Municipal Authority	Holiday Park STP	3,060	1,436	1,435	1,412	1,320	1,516	1,579	1,225	1,408	1,313	1,186	1,880	1,433	1,429
	Laurel Gardens STP	23.3	20	15	20	13	13	20	20	15	20	15	20	15	17
Township of Richland	Fairwinds STP	89	32	31	15	22	26	26	28	28	28	28	28	28	27
The Mun. Authority of the Twp. Of Robinson	Campbells Run STP	1,700	1,180	1,387	1,423	1,071	1,393	1,158	1,160	1,219	912	1,180	1,270	1,235	1,216
	Covi - Douglas STP	308	191.2	306.7	307.3	135.7	205.6	187.4	174.9	183.8	194	121.3	254.3	174.5	203.1
	Moon Run STP	425	345.9	513.8	552.1	359.7	333.8	349.8	309.6	264.8	564.8	280.2	410.6	392.8	389.8
Borough of Sewickley	Sewickley Borough STP	1,800	694	822	1,011	651	531	445	453	615	493	569	661	533	623
Sewickley Hills Borough	Sewickley Hills Borough STP ^{1,2}	37.5	No Data	0.80	0.92	0.55	0.51	0.94	0.52	0.45	0.74	0.00	0.00	2.42	0.71
South Versailles Township	South Versailles Township STP	6.3	0.665	0.76	0.737	0.268	0.346	0.237	0.111	2.4	0.716	0.134	0.586	0.469	0.62
Upper Allegheny Joint Sanitary Authority	Upper Allegheny Jt. San. Auth. STP	8,340	3,004.2	2,597.7	2,594.9	2,755.4	2,791.0	2,597.2	2,676.7	2,736.1	3,222.3	2,915.1	2,659.1	3,038.2	2,799
West Elizabeth Sanitary Authority	West Elizabeth Borough STP	850	160	160	130	150	150	120	80	120	130	90	130	120	130
West Mifflin Sanitary Sewer Municipal Authority	Kenmore Manor STP	1,700	54	92	136	82	177	239	309	229	69	58	52	87	132
	New England STP	2,040	872	1,108	1,158	1,115	1,174	1,038	4,390	1,211	1,251	1,096	1,050	1,027	1,097
	Thompson Run STP	4,250	1,969	2,022	1,895	2,090	2,052	1,856	2,176	1,977	1,649	1,697	1,794	1,352	1,877

¹ Design Organic Loading is based on a typical influent wastewater CBOD concentration of 250 mg/l.

² 1997 Organic Loading (Jan. - Dec.) is based on an 85 percent CBOD removal rate.

**Table 2-7
1997 Loading Utilization Summary**

Treatment Agency	Treatment Plant	Hydraulic Loading Utilization (mgd)			Organic Loading Utilization (lbs/day)		
		Design Hydraulic Capacity	1997 Average Monthly Hydraulic Loading	Percent Of Plant Capacity Utilized	Design Organic Capacity	1997 Average Monthly Organic Loading	Percent Of Plant Capacity Utilized
Aleppo Township Authority	I-79 North Properties STP	0.05	0.016	33%	85	30	35%
	Sewickley Heights Manor STP	0.084	0.045	53%	205	108	53%
Allegheny County Sanitary Authority	ALCOSAN STP	200	189.691	95%	245,000	170,104	69%
Allegheny Valley Joint Sewage Authority	Allegheny Valley Jt. Sewage Auth. STP	5.1	3.682	72%	8,100	6,428	79%
Bell Acres Municipal Authority	Grouse Ridge STP ^{1,2}	0.00665	0.0041	62%	14	1.9	14%
	Sewickley Heights #1 STP ^{1,2}	0.016	0.008	51%	33	3.1	9%
	Sewickley Heights #2 STP ^{1,2}	0.028	0.008	27%	58	1.4	2%
	Sewickley Heights #3 STP ^{1,2}	0.008	0.004	53%	17	1.1	7%
Bethel Park Municipal Authority	Piney Fork STP	4.1	3.266	80%	6,155	4,271	69%
Clairton Municipal Authority	Clairton STP	6.0	3.919	65%	10,000	3,243.5	32%
Coraopolis Municipal Sanitary Authority	Coraopolis Water Pollution Control Facility	4.34	3.250	75%	5,808	3,271	56%
Crescent South Heights Municipal Authority	Crescent South Heights Municipal Authority STP	0.396	0.359	91%	565	463	82%
Deer Creek Drainage Basin Authority	Hampshire Estates STP ¹	0.04	0.010	24%	83.4	14.4	17%
Dravosburg Borough	Dravosburg STP	0.48	0.408	85%	2,780	90.9	3%
City of Duquesne	Duquesne STP	2.0	0.715	36%	2,780	640.4	23%
Elizabeth Borough Municipal Authority	Elizabeth Borough STP	1.2	0.918	77%	1,100	338	31%
Elizabeth Township Sanitary Authority	Buena Vista STP	1.4	0.928	66%	2,000	504	25%
Township of Findlay	Clinton Mobile Home Park STP	0.01	0.005	45%	16.7	3.7	22%
Borough of Glassport	Glassport Borough STP ¹	1.2	0.896	75%	2502	547	22%
Hampton Township Municipal Authority	Allison Park STP	3.4	2.188	64%	4,938	2,934	59%
Municipal Authority of the Borough of Leetsdale	Leetsdale Borough STP	0.775	0.688	89%	875	629.5	72%
Borough of Lincoln	Virginia Drive STP ^{1,2}	0.0088	0.004	40%	18.3	5.2	28%
McCandless Township Sanitary Authority	A & B STP	0.4	0.128	32%	680	160	24%
	Longvue #1 STP	1.2	0.987	82%	2,040	977.6	48%
	Longvue #2 STP	0.1	0.055	55%	170	30.75	18%
	Pine Creek STP	6.0	3.009	50%	10,200	4,387	43%
The Municipal Authority of the City of McKeesport	McKeesport WPCP	11.5	9.275	81%	19,500	6,199	32%
Moon Township Municipal Authority	Flaugherty Run STP	1.0	0.347	35%	2085	510	24%
	Montour Run WPCP	6.2	3.848	62%	10,200	5,671	56%
Borough of Oakmont	Oakmont Borough STP	1.2	1.155	96%	2,040	1,287	63%
Ohio Township Sanitary Authority	Windy Knoll STP	0.1	0.044	44%	170	57.1	34%
Municipality of Penn Hills	Lincoln Road STP	0.24	0.087	36%	408	141.1	35%
	Plum Creek STP	3.7	1.881	51%	10,200	1,861	18%
Pennsbury Borough	Pennsbury Village STP ^{1,2}	0.17	0.063	37%	354.4	10.5	3%
Pleasant Hills Authority	Pleasant Hills STP	5.0	2.539	51%	7,004	2,350	34%
Plum Borough Municipal Authority	Holiday Park STP	1.52	1.240	82%	3,060	1,429	47%
	Laurel Gardens STP	0.014	0.007	48%	23.3	17	73%
Township of Richland	Fairwinds STP	0.052	0.029	56%	89	27	30%
The Mun. Authority of the Twp. Of Robinson	Campbells Run STP	1.0	0.735	74%	1,700	1,216	72%
	Covi - Douglas STP	0.1583	0.121	76%	308	203.1	66%
	Moon Run STP	0.25	0.213	85%	425	389.8	92%
Borough of Sewickley	Sewickley Borough STP	0.9	0.616	68%	1,800	623	35%
Sewickley Hills Borough	Sewickley Hills Borough STP ^{1,2}	0.018	0.015	86%	37.5	0.71	2%
South Versailles Township	South Versailles Township STP	0.03	0.009	29%	6.3	0.62	10%
Upper Allegheny Joint Sanitary Authority	Upper Allegheny Jt. San. Auth. STP	6.0	4.983	83%	8,340	2,799	34%
West Elizabeth Sanitary Authority	West Elizabeth Borough STP	0.5	0.408	82%	850	130	15%
West Mifflin Sanitary Sewer Municipal Authority	Kenmore Manor STP	0.48	0.073	15%	1,700	132	8%
	New England STP	1.2	0.747	62%	2,040	1,097	54%
	Thompson Run STP	2.5	2.390	96%	4,250	1,877	44%

¹ Permitted Organic Capacity is based on a typical influent wastewater CBOD concentration of 250 mg/l.

² 1997 Average Monthly Organic Loading is based on an 85 percent CBOD removal rate.

2.3 Wastewater Collection Systems

Of the 130 municipalities within Allegheny County, 84 have sanitary sewer systems. Forty-three municipalities are predominately served by combined sewer systems. The sanitary and combined sewer municipalities are shown on Figure 2-2.

2.3.1 Combined Sewer Systems

Combined sewer systems were designed to transport wastewater from domestic, commercial and institutional sources, industrial wastewater plus stormwater from street catch basins and other sources. Each building sewer (service lateral) connects to the collection sewer in the street or easement. Street catch basins and other storm sewer appurtenances are also connected to the collection sewers. The local collection sewers are connected to interceptor sewers which lead to the treatment plant. The flow of sewage from the collection sewers into the interceptor sewers is controlled through regulator structures. During dry weather, all flows from collection sewers discharge through the regulator structures into the interceptor system for conveyance to the treatment plant. During wet weather, the flows in the collection system may exceed the capacities of the interceptor sewers and/or the treatment plant. The regulators are set to force flow volumes exceeding these capacities into diversion pipes for discharge into an adjacent stream or river, resulting in a combined sewer overflow (CSO).

Combined sewer systems were a logical development of the urbanization process in the nineteenth and early twentieth centuries throughout the urbanized areas of the United States. Local storm drainage and sewage was typically discharged directly to local creeks, drainage swales and the rivers. To protect public health, these unsanitary drains were eventually culverted and covered over. As wastewater treatment plants were constructed in the decades following World War II, they were sized to handle maximum dry weather flows. The remainder of flows during wet weather was intended to be discharged to receiving streams as combined sewer overflows.

2.3.2 Sanitary Sewer Systems

Sanitary sewer systems are designed to collect and transport wastewater from residential building sewers (house laterals), office buildings, stores and restaurants, industries and institutions such as schools and hospitals. Sanitary sewer systems are sized to accommodate peak usage periods such as early mornings in residential area and groundwater and surface water that may be incidentally present. For example, the PaDEP design standards call for sanitary sewers in residential areas to accommodate a peak flow rate of 400 gallons per capita per day in collector sewers; reflecting water usage of about 100 gallons per day and a 4.0 peaking factor.³ The construction of sanitary sewers in new construction became the norm in the first half of this century.

While designed for the conveyance of wastewater, sanitary sewers typically convey large quantities of inflow and infiltration (I/I). Sanitary sewer systems frequently function as de-facto storm drainage systems throughout Allegheny County (and nationally). Within the ALCOSAN service area for example, approximately 50% of the water reaching the treatment plant is inflow/infiltration. This percentage is typical for metropolitan areas.

Inflow sources include building foundation drains, downspouts that are connected to the building sewer, basement drains, and public sources such as catch basins that have been connected to sanitary sewers by mistake or expediency. Infiltration is ground water that enters sanitary sewers through structural defects such

³ PaDEP Domestic Wastewater Facilities Manual - A Guide for the Preparation of Applications, Reports and Plans (1997)

as loose joints, deteriorated manhole walls and crushed pipe sections. After decades of efforts towards reducing inflow and infiltration through the rehabilitation of public sewers, municipalities are beginning to address private sources. It is estimated that approximately 50% of inflow and infiltration in municipal collection systems is attributable to sources on private property such as deteriorated house lateral sewers. Recent advances in flow monitoring, closed circuit television inspection, and pipe sealing technologies have allowed for an understanding of the significance of I/I from private sewers and provided techniques for addressing this problem.

2.4 Storm Sewer and Drainage Systems

Municipalities with sanitary sewer systems typically also have storm sewer systems. Storm sewage systems are intended to remove surface runoff from streets and sidewalks and provide a means for stormwater drainage from private property. This is typically accomplished with street catch basins and piping sized to accommodate the maximum run-off from specified "design storms", storms with defined return frequencies, rainfall durations and intensities. Since the enactment of the Storm Water Management Act,⁴ public and private storm drainage systems must be designed so as to not increase the net run-off volumes and rates from their drainage areas. This is intended to reduce the potential for downstream flooding due to the increase in impermeable ground cover due to development.

There is a growing understanding nationally and within Allegheny County as to the relationship between stormwater management practices and wet weather flow management in sanitary sewer areas. Inadequate or poorly maintained storm sewer systems exacerbate inflow and infiltration problems in sanitary sewer systems and conversely, the removal of excessive inflow and infiltration from a sanitary sewer system can result in significant new demands on storm sewer systems.

Construction of all storm sewers must be consistent with the watershed Storm Water Management Plans adopted by Allegheny County. Storm sewer systems are increasingly covered by national pollution discharge elimination systems (NPDES) permitting requirements under the federal Water Quality Act of 1987. Under the Water Quality Act, municipalities with separate storm sewers are required to implement storm water management programs. Stormwater management programs are intended to reduce the discharge of pollutants to receiving streams to the "maximum extent possible" by using best management practices. Best management practices focus on reducing the sources of storm water contamination, thereby protecting water quality without imposing numerical "end of pipe" effluent standards. Typical best management practices include public education and outreach, e.g., stenciling catch basins with admonitions not to dump wastes, illicit discharge detection and elimination, e.g., locating building sewers that are connected to storm drains rather than sanitary sewers, construction site runoff control and pollution prevention through "good housekeeping" such as street sweeping and catch basin cleaning.

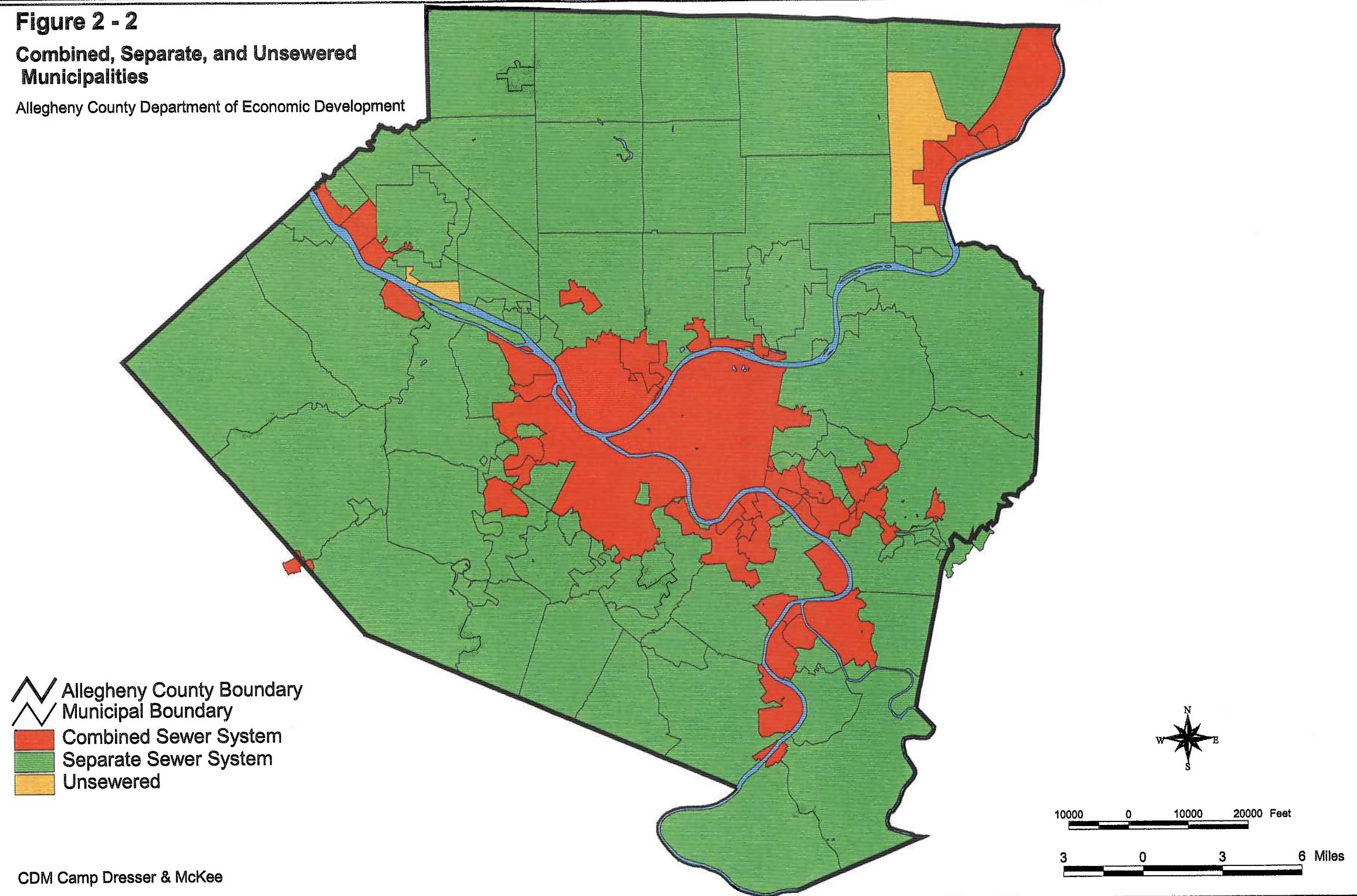
Phase I of USEPA's stormwater regulations was promulgated in 1990, and covered municipal storm sewer systems with service populations of 100,000 or more. The trigger population was based on municipalities, not on urban areas, so areas such as Allegheny County which are heavily urbanized, but consist of municipalities with populations less than 100,000 were not covered. Municipalities with combined sewer systems were not covered. EPA has a target date of November 1999 for the issuance of its phase II regulations. The phase II regulations will cover municipalities in urban areas with municipal populations of less than 100,000. This will include the sanitary sewer municipalities of Allegheny County.

⁴ Act 167 of 1978 (as amended by Act 63).

Figure 2 - 2

Combined, Separate, and Unsewered Municipalities

Allegheny County Department of Economic Development



3.0 Current Institutional Arrangements

3.1 Introduction

The legal and institutional frameworks that allow for the successful operation of a wastewater system are of equal importance to the physical facilities. Legal responsibility for wastewater management within Allegheny County reflects our federal system of government. The municipalities are ultimately responsible for wastewater management within their corporate boundaries. These responsibilities may be discharged directly or through a municipal authority. Defining the nature of the municipal responsibilities is the responsibility of the Commonwealth through the Clean Streams Law and other legislation and of the Federal government through the Clean Water Act and other laws. Responsibilities for the enforcement of state and federal water quality laws and their implementing regulations are shared by the Commonwealth and the Federal government. In Allegheny County, the Commonwealth has delegated regulatory and enforcement powers to the County Health Department. This diffusion of authority and responsibility provides opportunities for flexibility in the face of local conditions as well as for confusion.

The day to day operation of wastewater collection and treatment systems is guided by municipal ordinances. Typically, these include an intermunicipal service agreement, a sewer use ordinance and a sewer rate ordinance. The intermunicipal sewer agreement establishes the legal and working relationships between municipalities and/or municipal authorities that share wastewater facilities. The sewer use ordinance (SUO) serves to physically protect the sewers and treatment plant from harmful discharges and to protect against violations of the treating authority's NPDES discharge permit. The sewer rate ordinance implements the municipalities' user charge system methodology in which the operating and debt service costs are proportionately allocated among users.

3.2 Legal Framework

3.2.1 Federal Water Pollution Control Act ¹

All activities performed by municipalities and municipal authorities that affect water quality are, at least indirectly, subject to the Federal Water Pollution Control Act. The operation of municipal collection sewer systems, storm sewer systems and wastewater treatment plants are specifically subject to the provisions of the Act. The Act requires that all point-source discharges to the Nation's surface waters must have a NPDES discharge permit.² NPDES permits incorporate effluent limitations, implementation schedules and monitoring and reporting requirements.

The Act is implemented and enforced by the U.S. Environmental Protection Agency (USEPA) through its administrative rules. USEPA is divided into ten administrative regions. Pennsylvania is in Region III, which is headquartered in Philadelphia. The Act provides for the delegation of regulatory jurisdiction to the state environmental agencies. Thus, the Pennsylvania Department of Environmental Protection (PaDEP) administers the NPDES permitting program and related water quality management and enforcement activities. In Allegheny County, wastewater regulatory authority is also held by the Allegheny County Health Department.

¹ Commonly referred to as the Clean Water Act (33 U.S.C. 1251 et seq.)

² National Pollution Discharge Elimination System

Despite the delegation of primary responsibilities to PaDEP, USEPA retains ultimate authority and can take Federal enforcement action against any NPDES permittee at its discretion. This power has been manifested recently through its actions toward the Allegheny County Sanitary Authority (ALCOSAN) and fifty-one contributing municipalities concerning sanitary sewer overflows.

3.2.2 The Pennsylvania Clean Streams Law³

Recognizing that the discharge of sewage and industrial waste into the waters of the Commonwealth was a public nuisance, the Pennsylvania legislature enacted the Clean Streams Law in 1937. The Law was intended to prevent the pollution of waters and to remedy existing pollution. Under the Clean Streams Law, the municipalities are assigned responsibility for wastewater management. This responsibility may be discharged through agreements with municipal authorities or other agencies.

The Sanitary Water Board of the Pennsylvania Department of Health was originally authorized to be the administrative agency for the Clean Streams Law. Today, the Pennsylvania Department of Environmental Protection has the responsibility for formulating, adopting, and repealing rules and regulations necessary to implement the Clean Streams Law. Further, the agency has responsibility for monitoring levels of sewage discharges into the waters of the Commonwealth, issuing permits to municipalities and individual landowners for discharging sewage, requiring the construction of municipal sewage treatment facilities, and ordering municipalities to file reports with the Commonwealth. The reports document sewage discharges and outline the remediation plans of the municipality, and are subject to PaDEP approval.

3.2.3 Local Health Administration Law

The Allegheny County Health Department (ACHD) is jointly responsible for the enforcement of the Clean Streams Law within Allegheny County under the provisions of the Local Health Administration Law.⁴ The Division of Public Drinking Water and Waste Management monitors the operation of wastewater treatment plants through on-site inspections and review of plant operating reports. It investigates treatment plant bypassing, illicit connections of sanitary sewers into storm sewers or creeks and similar threats to public health or water quality. The ACHD can order the correction of discharges from broken or hydraulically overloaded sewer lines either under the provisions of the Clean Streams Law or the Local Health Administration Law. The ACHD also issues permits for the installation, repair and replacement of on-lot sewage disposal systems.

3.2.4 Pennsylvania Municipal Code - Sewers

Chapter 12 of the Pennsylvania Municipal Code (Act 39), addressed the rights and responsibilities of local governments for providing sewage treatment capabilities. Municipalities were given the right to enter onto all public and private lands in order to excavate and lay sewers and drains, making just compensation to the owner. Further, they were empowered to set and collect rates, rentals, or charges for the use of sewers, sewer systems, or sewage treatment works by the owners of these lands. Municipalities also were given the ability to relinquish their responsibility for providing sewage treatment to municipal authorities.

Rentals and charges can be calculated in a variety of ways. Three specific methods are described in the code, although they are not meant to preclude any other manner for setting rates. The methods for setting revenues are:

³ 35 PS 691 et seq.

⁴ 16 PS 12001 et seq.

- Revenues can be set to equal operating expenses.
- Revenues can be set to equal operating expenditures plus debt service.
- Revenues can be set to equal operating expenses, debt service, and a ten percent margin of safety. If the third method is used, any unused surplus beyond the ten percent is stipulated to go into a sinking fund, and can be used for no other purpose.

Rates, rentals, and charges set by the institution were based on water consumption data, which the code mandated that water utilities would supply to the agency providing sewage treatment service. Non-payment of rates, rentals, and charges for sewage treatment can result in termination of water services.

The Pennsylvania Municipal Code states that "it shall be lawful for any county, city, borough, incorporated town, or township to execute such agreements and contracts ... with an authority" to provide "sewer, sewerage, or sewage treatment service to it or to its inhabitants." Any rights granted to an authority through the municipal code are in addition to the powers and privileges granted to authorities by the Municipality Authorities Act. The municipal code was construed to expand, rather than limit, the powers set forth in the Municipality Authorities Act.

3.2.5 Municipality Authorities Act

Wastewater treatment is provided by 23 municipal authorities within Allegheny County. Pennsylvania passed its Municipality Authorities Act in 1945 with the primary purpose of expanding municipal borrowing powers. The Act provides for the establishment of independent public corporations with broad powers to finance, construct and operate public facilities. Authorities may own and operate facilities. The roles of authorities may be limited to financing facilities through leaseback arrangements with the municipality.

Municipal sewage authorities were given the power to fix charges and rates, although the Municipality Authorities Act specifies that both operating expenses and debt service must be covered. Special assessments for recovering some construction costs also are outlined in the Act.

In 1990, the legislature amended the Municipal Authorities Act permitting authorities to charge a capacity fee to property owners who want to connect to the authority's system. The capacity fee, established by an authority resolution, is an additional charge above user charges and beyond those assessed against the property for sewer main construction. The actual capacity required by the property owner is not set aside until the owner has paid the capacity fees or secured financial security. The fees may include separate fee components to cover costs associated with creating and providing capacity in the Authority's system associated with collection, transmission and treatment, as well as costs associated with making the actual connection to the system.

The law provides for three types of capacity fees: connection fee, customer facilities fee, and tapping fee. The connection and customer facilities fees pertain to those costs associated with connecting individual properties to the main sewer line. A connection fee is charged to cover the costs of constructing the connection from line owned by the authority to the property line of the property being connected. Authorities may also base the fee on the average cost for previously installed similar connections.

The Customer Facilities Fee is charged when the authority installs the facilities necessary to serve a property from the property line to the proposed dwelling or building to be served. The authority may also require the property owner to construct these facilities in lieu of payment.

The tapping fee may be comprised of the following components: capacity, collection system, or special purpose facilities. Tapping fees may not include the cost of expanding, replacing, updating, or upgrading facilities serving existing customers to meet stricter efficiency, environmental, regulatory or safety standard, or to provide

better service to, or meet the needs of, existing customers. The tapping fee is more complicated and can be based on several cost components. Each is described in more detail below.

The fee for capacity-related facilities pertains to costs associated with treatment, pumping, transmission, trunk, interceptor and outfall mains, storage, sludge treatment or disposal, interconnection, or other general system facilities. These facilities may provide existing or future service. For existing facilities, the cost is based on one of the following methods: the replacement cost of the historical cost of the facilities trended to current costs using published cost indexes, or upon the historical cost plus interest and other financing fees paid on bonds used to finance the facilities. In the case of existing facilities, outstanding debt must be subtracted from the costs unless the debt is totally attributable to costs associated with facilities that exclusively serve new customers.

For proposed facilities or facilities to be acquired, the cost shall not exceed the estimated cost and the facilities must be included in an adopted budget or a five-year capital improvement plan. Further, the authority must take action to further the construction of the facilities. The authority's intent can be demonstrated by a wide range of activities associated with project implementation. Authority actions may include activities such as preparing an engineering feasibility study to securing project financing. The authority may also allocate its capacity-related facilities to different sections or districts in the system, and may charge additional capacity fees to specific groups of existing customers in conjunction with additional capacity requirements of those customers, such as commercial or industrial customers.

The Collection Part Fee may be levied to cover the costs of existing or proposed collection facilities required to provide wastewater service, such as those associated with pumping stations. The cost of existing facilities is based upon one their replacement cost of the historical cost of the facilities trended to current costs using published cost indexes, or upon the historical cost plus interest and other financing fees paid on bonds used to finance the facilities. In the case of existing facilities, outstanding debt must be subtracted from the costs unless the debt is totally attributable to costs associated with facilities that exclusively serve new customers.

For proposed facilities or facilities to be acquired, the cost shall not exceed the estimated cost, and the costs shall be reduced by the amounts of any grants or capital contributions used to finance the facilities. The collection part of the tapping fee per unit of capacity required by the new customer shall not exceed the cost of the facilities divided by the design capacity of the facilities. The authority may also allocate its capacity-related facilities to different sections or districts in the system, and may charge additional capacity fees to specific groups of existing customers in conjunction with additional capacity requirements of those customers, such as commercial or industrial customers.

Special Purpose Part Fees are associated with special purpose facilities applicable to a particular group of customers or serving a particular purpose, or a serving a specific area, based upon the cost of the facilities, including industrial wastewater treatment facilities. The special purpose part of the tapping fee per unit of capacity required by the new customer shall not exceed the cost of the facilities divided by the design capacity of the facilities. Reimbursement Component Fees can be levied as part of the tapping fee to recapture the allocable portion of facilities to reimburse the property owner at whose expense such facilities were constructed.

3.3 Planning Requirements

3.3.1 The Pennsylvania Sewage Facilities Act (Act 537)

Municipalities are required to plan their compliance with the Clean Streams Law by periodically preparing and updating an official sewage facilities master plan.⁵ The plan is intended to outline the physical, institutional and financial arrangements for wastewater management over a twenty-year planning horizon.

The information specified to be part of official plans includes:

- A delineation of existing sewage systems, including a description of problems in the area served by the municipality and areas where services are planned to be provided for the next ten years
- A plan for extending community interceptor sewers that is consistent with a comprehensive plan for the area
- Demonstration that adequate sewage treatment facilities will be provided
- A schedule and methods for both constructing and financing proposed community sewage systems

The plans are required to take into consideration population growth and economic expansion in the communities affected. The plan must be approved by both PaDEP and by the appropriate planning agencies in the municipality. Due to the relationships of watersheds to municipal corporate limits, plans may be developed jointly by municipalities or at the county level. The Allegheny County Planning Department developed a plan in 1970.

3.3.2 Chapter 94 Wasteload Management Planning

Under Chapter 94 of Title 25 of Pennsylvania's administrative code, publicly owned wastewater treatment plants are required to submit an annual report to PaDEP containing an analysis of current and near term (five year) hydraulic and organic plant loading conditions. Hydraulic overload conditions are defined as occurring when the average daily flow entering a plant exceeds the average daily design flow that is identified in the NPDES permit for three consecutive months. The definition also includes any event in which the hydraulic capacity within the collection system or treatment plant is exceeded. PaDEP has delegated the review and commenting tasks of Chapter 94 for publicly owned treatment plants in Allegheny County to the Allegheny County Health Department.

If the report or PaDEP determines that a system is hydraulically or organically overloaded, the permittee is required to prohibit new connections (with certain exceptions). The permittee is also required to begin work on the planning, design, financing, construction and operation of facilities required to correct the overloading. This information must be set forth in a Corrective Action Plan. These plans are required to be consistent with the provisions of the municipality's Act 537 facilities plan.

⁵ 35 P.S. § 750.1 et seq.

3.3.3 Related Planning Requirements

Municipal Comprehensive Plan Requirements

Municipalities are empowered (but not required) to develop a comprehensive plan under the Pennsylvania Municipalities Planning Code.⁶ The comprehensive plan may include sewage and waste treatment facilities, and is to be coordinated with the Act 537 Plan through the development of the 537 Plan. The plans are also to be developed with consideration of the County Master Plan (if applicable). As of June 1998, 103 of the 130 municipalities within Allegheny County had adopted master plans.⁷

County Comprehensive Master Plan

Unlike municipalities, counties are required to adopt comprehensive plans. This report will provide information required for the community facilities and utilities portion of the Allegheny County Comprehensive Plan.

County Stormwater Management Planning

Counties have the primary responsibility for storm water management planning under the Storm Water Management Act.⁸ Counties are required to develop county-wide stormwater management plans with the municipalities on a watershed basis. Of the twenty-five⁹ watersheds in Allegheny County, stormwater management plans have been completed for nine. Plans have not been initiated for five watersheds designated as high priority by PaDEP. The status of stormwater management planning is summarized on Table 3-1. PaDEP, in consultation with the Department of Community and Economic Development, is required to review all county stormwater plans and approve those that are consistent with municipal floodplain management plans, state programs that regulate dams and floodplain encroachments. Facilities financed in whole or in part by state funds must be design in a manner consistent with approved watershed stormwater plans.

3.4 Intermunicipal Agreements

Municipalities providing wastewater services (including treatment and transport through their sewers to a treating authority) and municipal authorities set forth the intermunicipal relationships through intermunicipal service agreements. The intermunicipal agreement sets forth the legal, financial and institutional relationships between the subscribing community and the community treating the wastewater. Ideally, the agreements should spell out in clear, simple terms who is to do what and how it is to be done.

⁶ Acts 247 of 1968 (as reenacted and amended)

⁷ Source: Allegheny County Subdivision and Land Development Ordinance, ACDED

⁸ Act 167 of 1978 (as amended by Act 63).

⁹ PaDEP designations.

**Table 3-1
Completed Stormwater Management Plan**

Watershed(s)	Municipalities		
Girty's Run	<ul style="list-style-type: none"> McCandless Shaler Reserve 	<ul style="list-style-type: none"> Ross West View 	<ul style="list-style-type: none"> Millvale City of Pittsburgh
Girty's Run/Pine Creek/Deer Creek Pilot	<ul style="list-style-type: none"> Pine Franklin McCandless Bradford Woods Marshall 	<ul style="list-style-type: none"> Richland Hampton Shaler Etna Indiana 	<ul style="list-style-type: none"> O'Hara Ross Township Harmar West Deer
Squaw Run	<ul style="list-style-type: none"> Fox Chapel Harmar 	<ul style="list-style-type: none"> Indiana O'Hara 	<ul style="list-style-type: none"> City of Pittsburgh
Turtle Creek	<ul style="list-style-type: none"> Braddock Hills Chalfant Churchill East McKeesport East Pittsburgh Forest Hills 	<ul style="list-style-type: none"> Monroeville (Municipality of) North Braddock North Versailles Pitcairn Turtle Creek Plum 	<ul style="list-style-type: none"> Wall Wilkins Wilkesburg Wilmerding
Monongahela River	<ul style="list-style-type: none"> Baldwin Borough Braddock Hills Brentwood Clairton Dravosburg Duquesne East McKeesport Edgewood Elizabeth Borough Elizabeth Township Forward Glassport 	<ul style="list-style-type: none"> Homestead Jefferson Hills Liberty Lincoln McKeesport Mt. Oliver Munhall North Braddock North Versailles Penn Hills Pittsburgh Port Vue 	<ul style="list-style-type: none"> Rankin Swissvale West Elizabeth West Homestead West Mifflin Whitaker Run Whitehall White Oak Wilkesburg
Montour Run	<ul style="list-style-type: none"> Coraopolis Findlay 	<ul style="list-style-type: none"> Moon North Fayette 	<ul style="list-style-type: none"> Robinson
Flaugherty Run	<ul style="list-style-type: none"> Crescent Hopewell 	<ul style="list-style-type: none"> Moon Findlay 	
Little Sewickley Creek (75% complete)	<ul style="list-style-type: none"> Sewickley Leet Bell Acres 	<ul style="list-style-type: none"> Sewickley Hills Edgeworth Leetsdale 	<ul style="list-style-type: none"> Sewickley Heights Franklin Park

**Table 3-2
Provisions of Treatment Agencies'
Intermunicipal Service Agreements**

Treatment Agency	Expiration Dates	Flow Limits	Flow Monitors	Rate Formula	Routine Sampling	Dispute Resolution Procedure	Basis of Cost Allocation
Aleppo Township Authority	no	yes	no	no	no	no	water use
ALCOSAN	bond ¹⁰	no	partial	no	no	no	water use and metered flow
Allegheny Valley Joint S.A.	bond	no	yes	no	no	arbitration	water use
Bethel Park M.A.	no	no	no	no	no	no	% cust.
Clairton M.A.	no	no	yes	no	no	arbitration	metered
Coraopolis M.S.A.	event	partial	partial	yes	no	arbitration	metered
Crescent S. Heights M.A.	yes	no	no	no	no	no	water use
Elizabeth Borough M.A.	no	no	no	no	no	no	no
Elizabeth Township S.A.	yes	EDU ¹¹ s	no	yes	no	no	EDU
Township of Findlay	no	no	yes	no	no	no	metered
Hampton Township M.A.	no	3x avg	yes	no	no	arbitration	water use
Leetsdale Borough M.A.	no	no	no	no	no	no	water use
McCandless Township S.A.	duration	yes	no	no	no	arbitration	water use
City of McKeesport M.A.	bond	no	no	no	no	arbitration	water use
Township of Moon M.A.	yes	no	yes	no	no	arbitration	metered
Municipality of Penn Hills	no	300	no	yes	yes	arbitration	water use
Pleasant Hills Authority	no	no	no	no	no	no	water use
Plum Borough M.A.	no	no	no	no	no	no	water use
Robinson Township M.A.	bond	no	yes	no	no	arbitration	metered
Borough of Sewickley	yes	no	no	no	no	arbitration	water use
Upper Allegheny J.S.A.	duration	yes	yes	no	no	yes	water use
West Elizabeth S.A.	bond	yes	no	no	no	no	EDU

3.4.1 Overview of Allegheny County Situation

There are approximately 160 intermunicipal agreements currently in effect between municipalities and between municipalities and their municipal authorities within Allegheny County. Twenty-two of the treatment agencies have intermunicipal service agreements with one or more subscribing municipality. The general provisions of the intermunicipal agreements are summarized on Table 3-2. Specific provisions are detailed more fully in Section 10 of this report.

In general, the provisions of the intermunicipal service agreements are inadequate for current requirements, particularly in terms of providing a basis for limiting excessive wet weather flows (inflow and infiltration) from

¹⁰ Agreements expire upon retirement of outstanding debt.

¹¹ Equivalent dwelling units - a unit of water consumption or sewer generation equal to the average residential users.

to municipalities or directly to users based on metered water consumption. This approach was logical and equitable as long as intermunicipal generation of excessive wet weather flows is not an issue. The agreements typically also lack specified rate / cost allocation formulas. Expiration dates, when present, are typically based on bond amortization dates or similar period such as the service life of a treatment plant. Periodic revisions to reflect changing conditions are not routine; rather all parties are required to agree to reopen the agreements.

3.4.2 ALCOSAN

ALCOSAN provides wastewater service to all or portions of 82 of the 130 municipalities within Allegheny County, and therefore merits additional attention concerning its intermunicipal agreement provisions. The legal and institutional relationships between ALCOSAN and the service area municipalities are defined by their municipal service contracts. ALCOSAN, the City of Pittsburgh, and 58 other municipalities have entered agreements ("Standard Municipal Agreements") under which ALCOSAN is designated the exclusive agent of the respective municipalities to furnish sewage treatment and disposal service. The Standard Municipal Agreement was executed in 1955 at the time of initiation of the construction of the initial interceptor system and treatment plant. The Upper Allegheny Agreement allowed the extension of service to municipalities on the Allegheny River. It was completed in the early 1950s prior to the completion of construction of the original ALCOSAN system, and is similar to the Standard Agreement. The contracts provide for uniform sewage charges throughout the service area based upon metered or estimated water consumption. There were no provisions for metering actual wastewater flows to the ALCOSAN interceptor; quantifying or limiting extraneous infiltration and inflow (I/I); and no provisions for the metering of bypass discharges.

The use of metered water consumption as the basis of cost allocation was logical and reasonable for conditions at the time. Given the large number of connection points between the municipalities and the interceptor system, individual flow metering was not viable. In addition, the hydraulic operating conditions of the municipal trunk sewers upstream of the regulators may complicate flow monitoring. The use of metered consumption was deemed equitable given the uniform design standards used to set the regulators. If ongoing storm water impacts are assumed to be relatively uniform system-wide, the cost impacts of wet weather flows from combined sewer areas would be similar system-wide. Since wet weather flows in excess of the 225 mgd treatment plant peak capacity were bypassed, the cost impacts of wet weather flows could be assumed to be uniform. This implicit equitableness breaks down if the accepted rates of wet weather flow vary within the system. Such is the case for separate-sewered communities within the ALCOSAN service area where quantities of extraneous I/I can vary greatly from one municipality to another.

There is no explicit definition of sewage in the agreement, which is significant in sanitary sewer areas. In the agreement with the City of Pittsburgh¹² sewage appears to be implicitly defined to include stormwater and sanitary and industrial wastewater through reference to the interception of the City's existing sewers. The City's agreement includes provisions for the Upper Allegheny Interceptor system; and defines this system as including "stormwater control works". Significantly, the municipalities covered by the Upper Allegheny Agreement have sanitary sewers.

The "New" Municipal Service Contract has been entered with outlying suburban municipalities that have joined the service area since 1986. Service agreements entered into since 1986 also impose limitations on the type and volume of flows from municipalities, exclude storm water and acid mine drainage, and impose surcharges for excessive inflows and infiltration. ALCOSAN has established a policy to rebate surcharges to the municipalities for purposes of inflow and infiltration removal. As of December 1997, the municipalities within the Robinson Run watershed in the southwestern part of Allegheny County were covered under the new service agreement. These municipalities include Oakdale Borough, North and South Fayette Townships, McDonald Borough and Collier Township. In addition, ALCOSAN has entered into a service agreement with

McCandless Township for a new development, the Bennington Woods plan; but has not yet activated the surcharge provisions.

3.4.3 Key Provisions of Contemporary Intermunicipal Service Agreements

There are a number of key provisions in contemporary intermunicipal service agreements. A number of the treatment agencies' agreements have some of these provisions, none appears to have all. An overview of these recommended provisions follows. Individual intermunicipal agreements should be developed with the assistance of municipal engineers, accountants and attorneys representing the physical, financial and institutional aspects of the joint wastewater system. Suggestions for addressing these aspects in an agreement are listed below:

Physical Aspects:

- Flow volumes and peak flow rates that are acceptable to the receiving municipality or municipal authority. Also, any capacity in the treating municipality/authority's treatment plant reserved for the subscribing municipality.
- A description of the physical points of system interconnection (maps, sewer diameters, landmarks or coordinates, etc.)
- Description of the ownership and procurement of interconnection equipment such as flow meters, etc. Any easements necessary to implement the agreement should be completed and referenced.
- The rights of all parties to review plans and specifications for meters, pumps, interconnections, etc.
- Responsibility for maintaining flow meters, lift stations, etc. at the interconnection points.
- Acceptable types of sewage based on the receiving municipality's sewer use ordinance.
- Any special provision such as check valves, lift station alarms, regulatory responsibility for emergency overflows, etc.

Financial Aspects:

Intermunicipal agreements should include a cost allocation formula, as well as a specific rate, for the operation, maintenance and replacement costs of treating the subscribing municipality's sewage. Variables would typically include the cost of treating a unit volume of wastewater (typically 1,000 gallons) at the treatment plant, the subscriber's prorated share of any transportation costs, administrative costs, etc. The formula should parallel the methodology developed for the treating agency's user charge system. In addition, the agreement should include a formula for allocating the subscriber's share of any debt service for the treatment plant or jointly utilized collection sewers. The frequency of rate revisions using the above formulas and the logistics of metering and billing should also be included in the intermunicipal agreement.

¹² Ordinance Number 160, enacted April 15, 1955.

Institutional Aspects:

The following institutional arrangements are recommended for incorporation into intermunicipal sewer service agreements:

- Coordination of sewer use ordinances - The subscriber's ordinance should parallel that of the treating municipality or authority.
- Enforcement responsibilities for the sewer use ordinances and related enactments such as industrial pretreatment program requirements, should be spelled out.
- Remedies and liabilities in the event of a default by either party.
- A dispute resolution mechanism, short of litigation, should be included, e.g. arbitration.
- Dispute minimization procedures, e.g., semi-annual joint meetings, distribution of regulatory compliance reports (e.g., Chapter 94 reports), and access to records.
- A method for amending the agreement and the duration of the agreement.

3.5 Sewer Use Ordinances

The purpose of the sewer use ordinance is to regulate the use of sewers and to protect the integrity of the treatment works. The sewer use ordinance explains the legal relationship between the uses of the wastewater utility and the municipality.

3.5.1 Overview of Allegheny County Situation

All 127 sewer municipalities in Allegheny County have some form of sewer use ordinance. The key provisions of the ordinances are summarized on Table 3-3. The ordinances appear to be reasonably adequate at protecting the local sewer systems and treatment plants from harmful discharges. With three exceptions, the ordinances in sanitary sewer areas prohibit the discharge of clear water from sump pumps, down spouts, foundation drains and similar sources. The enforcement provisions for these prohibitions is limited to a municipal inspection at times of sale or property value reassessment. Typically, the municipality will conduct smoke or dye testing of house foundations, basement drains and downspouts. A certificate of compliance, issued by the municipality, is typically required at property closing. Buildings failing the municipal inspection typically must be brought into compliance prior to closing or within a set date of the closing. While effective at identifying inflow and infiltration sources, limiting inspections to property sales results in compliance schedules being measured in generations.

Some municipalities conduct routine sewer inspections through television equipment. Such inspections can identify infiltration and inflow sources from building lateral sewers. However, TV inspections may not distinguish between leaking building lateral sewers and illicit connections.

**Table 3-3
Provisions of Sewer Use Ordinances**

Treatment Agency	Municipalities have SUOs	Inflow / Infiltration Prohibitions	Illicit Connection Inspection	Industrial Pretreatment Program	Grease Trap Requirement	Surcharge for excessive I/I
Aleppo Township Authority	yes	yes	yes	no	yes	no
ALCOSAN	yes	varies ¹³	varies	yes	varies	varies
Allegheny Valley Joint S.A.	varies	varies	partial	varies	varies	no
Bell Acres M.A.	yes	yes	yes	no	no	no
Bethel Park M.A.	yes	yes	yes	partial	partial	no
Clairton M.A.	yes	varies	varies	varies	varies	varies
Coraopolis M.S.A.	yes	varies	varies	yes	varies	no
Crescent S. Heights M.A.	yes	yes	varies	varies	varies	no
Deer Creek D.B.A.	yes	yes	yes	yes	yes	yes
Borough of Dravosburg	yes	no	no	no	yes	no
City of Duquesne	yes	no	no	yes	no	no
Elizabeth Borough M.A.	no	no	no	varies	no	no
Elizabeth Township S.A.	yes	no	no	no	no	no
Township of Findlay	yes	yes	no	no	yes	yes
Borough of Glassport	yes	no	no	no	no	no
Hampton Township M.A.	yes	yes	yes	no	varies	no
Leetsdale Borough M.A.	yes	yes	yes	varies	varies	varies
Borough of Lincoln	yes	no	no	no	no	no
McCandless Township S.A.	yes	yes	varies	varies	varies	no
City of McKeesport M.A.	yes	varies	varies	varies	no	no
Township of Moon M.A.	yes	yes	varies	yes	varies	varies
Borough of Oakmont	yes	yes	yes	yes	yes	no
Ohio Township S.A.	yes	yes	yes	no	yes	no
Municipality of Penn Hills	yes	yes	yes	no	yes	varies
Pennsbury Borough	yes	no	no	no	no	no
Pleasant Hills Authority	yes	yes	yes	yes	yes	no
Plum Borough M.A.	yes	yes	yes	no	yes	no
Township of Richland	yes	yes	yes	no	yes	no
Robinson Township M.A.	yes	yes	varies	yes	no	no
Borough of Sewickley	yes	varies	varies	no	varies	varies
Sewickley Hills Borough	yes	yes	no	no	no	no
South Versailles Township	yes	no	no	no	no	no
Upper Allegheny J.S.A.	yes	yes	no	yes	est	varies
West Elizabeth S.A.	yes	varies	varies	yes	yes	no
West Mifflin S.S.M.A.	yes	varies	varies	varies	yes	no

¹³ Provisions vary between subscribing municipalities.

3.5.2 Key Provisions of Effective Sewer Use Ordinances

Typical provisions of an acceptable sewer use ordinance include:

- Prohibitions of sources of inflow and infiltration (clear water prohibitions) from sources such as sump pumps and downspouts.
- Regulations on new connections - providing for minimum design and performance standards and inspections prior to the covering of new connections.
- Prohibition on toxins and other pollutants in concentrations that could endanger public safety, the physical integrity of the sewage system or compliance with NPDES limits.
- Notification by users in the event of accidental spills or discharges to the system
- Monitoring provisions for non-residential users
- Municipal right to reject wastes and require pretreatment
- Municipal right to accept compatible high-strength wastes
- Requirements for oil, grease and sand traps as appropriate.
- Imposition of penalties and an appeals procedure under Pennsylvania Code
- Definitions of all terms necessary for enforcement of the ordinance

Many communities have successfully used model ordinances as the basis of their sewer use ordinances. The most commonly used model may be found in the Water Environment Federation's *Municipal Strategies for the Regulation of Sewer Use* (Manual of Practice No. SM-7). The manual stresses the need to adapt the model ordinance to local conditions.

3.6 Collection Sewer System Maintenance Practices

Current municipal sewer maintenance practices are summarized on Table 3-4. Sewer system maintenance is typically performed by municipal public works personnel, augmented by private contractors as needed. In some cases, the municipal authority maintains the collection system for the municipality. The McCandless Township Sanitary Authority and Moon Township Municipal Authority are two examples.

Fifty of the 127 sewer municipalities practice routine or preventative maintenance on their sewers. The remainder respond to problems as they arise. The municipalities own or have ready access to routine maintenance equipment. With several exceptions, the municipalities avail themselves to specialized equipment such as Vactor trucks from their respective Council of Governments (COG).

**Table 3-4
Sewer Maintenance Practices**

Municipality	Maintained By	Maintenance Done	Equipment Source	I/I Removal Program	I/I Flow Monitoring	Municipality	Maintained By	Maintenance Done	Equipment Source	I/I Removal Program	I/I Flow Monitoring
1 Aleppo Township	Local Forces	As-needed	Township, Contractor			66 McCandless, Town of	MTSA	Routine	Authority		
2 Aspinwall Borough	Dept. of Public Works	Annually	COG			67 McDonald Borough	Dept. of Public Works	Routine	Dept. of Public Works		
3 Avalon Borough	Dept. of Public Works	As-needed	Dept. of Public Works			68 McKees Rocks Borough	Street Dept.	Routine	Street Dept.		
4 Baldwin Borough	Dept. of Public Works	Routine	Dept. of Public Works			69 McKeesport, City of	MACM	As-needed	Authority		
5 Baldwin Township	Dept. of Public Works	Annually	Dept. of Public Works, COG			70 Millvale Borough	No Data	No Data	No Data		
6 Bell Acres Borough	Contractor	As-needed	No Data			71 Monroeville, Municipality of	Sewer Crew	Routine	Municipality, COG		
7 Bellevue Borough	Dept. of Public Works	As-needed	Dept. of Public Works			72 Moon Township	MTMA	Routine	MTMA, COG		
8 Ben Avon Borough	Dept. of Public Works	As-needed	Dept. of Public Works			73 Mt. Lebanon, Municipality of	Sewer Crew	Routine	Dept. of Public Works		
9 Ben Avon Heights Borough	Dept. of Public Works	As-needed	Dept. of Public Works			74 Mt. Oliver Borough	Road Dept.	Routine	Road Dept.		
10 Bethel Park Borough	BPMA	Routine	Authority, Dept. of Public Works			75 Munhall Borough	Street Dept., SVCOG	As-needed	Street Dept.		
11 Blawnox Borough	Dept. of Public Works	Routine	COG			76 Neville Township	Dept. of Public Works	As-needed	Dept. of Public Works		
12 Brackenridge Borough	Brackenridge Borough	Routine	Dept. of Public Works, UAJSA			77 North Braddock Borough	North Braddock Borough	As-needed	North Braddock Borough		
13 Braddock Borough	Borough Personnel	As-needed	Borough			78 North Fayette Township	Dept. of Public Works	As-needed	Dept. of Public Works		
14 Braddock Hills Borough	Dept. of Public Works	As-needed	Dept. of Public Works, COG			79 North Versailles Township	NVSA	As-needed	Authority		
15 Bradford Woods Borough	Bradford Woods Borough	No Data	No Data			80 Oakdale Borough	Oakdale Mun. Authority	Routine	Authority		
16 Brentwood Borough	Dept. of Public Works	Routine	Dept. of Public Works			81 Oakmont Borough	Contractor	As-needed	Borough, Water Authority		
17 Bridgeville Borough	Dept. of Public Works	Routine	Dept. of Public Works			82 O'Hara Township	Dept. of Public Works	Routine	Dept. of Public Works, COG		
18 Carnegie Borough	Dept. of Public Works	Routine	Dept. of Public Works, COG			83 Ohio Township	Contractor	As-needed	Contractor		
19 Castle Shannon Borough	Dept. of Public Works	Periodic	Dept. of Public Works, COG			84 Osborne Borough	Contractor	No Data	No Data		
20 Chalfant Borough	Street Dept.	Routine	Street Dept.			85 Penn Hills, Municipality of	MPH, Contractor	Routine	Municipality, COG		
21 Cheswick Borough	Cheswick Borough	No Data	No Data			86 Pennsbury Village Borough	Contractor	As-needed	None		
22 Churchill Borough	Dept. of Public Works	As-needed	Dept. of Public Works			87 Pine Township	Pine Township	No Data	No Data		
23 Clairton, City of	Public Works Dept.	As-needed	Public Works Dept.			88 Pitcairn Borough	Dept. of Public Works	As-needed	Dept. of Public Works		
24 Collier Township	CTMA, Contractor	As-needed	CTMA, Contractor			89 Pittsburgh, City of	PWSA	Routine	PWSA		
25 Coraopolis Borough	Coraopolis Borough	As-needed	Authority, COG			90 Pleasant Hills Borough	PHMA	Routine	Authority, COG		
26 Crafton Borough	Dept. of Public Works	As-needed	Dept. of Public Works			91 Plum Borough	PBMA, Contractor	Routine	Authority		
27 Crescent Township	CSHMA	Routine	Authority, COG			92 Portvue Borough	Portvue Borough	Periodic	COG		
28 Dormont Borough	Dept. of Public Works	Routine	Dept. of Public Works, COG			93 Rankin Borough	Dept. of Public Works	Routine	Dept. of Public Works, COG		
29 Dravosburg Borough	Dravosburg Borough	As-needed	Borough, COG			94 Reserve Township	Twp. Highway Dept.	Routine	Twp. Highway Dept., COG		
30 Duquesne, City of	City of Duquesne	As-needed	City, COG			95 Richland Township	Public Works Dept.	Routine	Public Works, Contractor, COG		
31 East Deer Township	East Deer Township	Routine	No Data			96 Robinson Township	MATR, Contractor	Routine	MATR		
32 East McKeesport Borough	Dept. of Public Works	As-needed	Dept. of Public Works			97 Ross Township	Dept. of Public Works	Routine	Dept. of Public Works		
33 East Pittsburgh Borough	TCVCOG	As-needed	COG			98 Rosslyn Farms Borough	Dept. of Public Works, COG	Routine	Dept. of Public Works, COG		
34 Edgewood Borough	Dept. of Public Works	As-needed	Dept. of Public Works			99 Scott Township	Dept. of Public Works	As-needed	Dept. of Public Works		
35 Edgeworth Borough	Edgeworth Borough	As-needed	Borough, Contractor			100 Sewickley Borough	Street Dept.	Routine	Authority, COG		
36 Elizabeth Borough	EBMA	As-needed	COG			101 Sewickley Heights Borough	Local Forces	As-needed	Township, Contractor		
37 Elizabeth Township	ETSA, Contractor	As-needed	Authority, COG			102 Sewickley Hills Borough	Sewickley Hills Borough	As-needed	Contractor		
38 Emsworth Borough	Contractor	Daily	Contractor			103 Shaler Township	Dept. of Public Works	Routine	Dept. of Public Works		
39 Etna Borough	Dept. of Public Works	Routine	Dept. of Public Works, COG			104 Sharpsburg Borough	Dept. of Public Works, COG	Routine	Dept. of Public Works, COG		
40 Fawn Township	Fawn Township	Routine	New Sewers			105 South Fayette Township	MATSF	As-needed	MATSF		
41 Findlay Township	Findlay Township	As-needed	COG			106 South Park Township	Sewer Maintenance Staff	Routine	Sewer Maint., PWD, COG		
42 Forest Hills Borough	Dept. of Public Works, Contractor	As-needed	Dept. of Public Works			107 South Versailles Township	Township, Contractor	As-needed	COG, White Oak Borough		
43 Forward Township	Forward Township	No Data	No Data			108 Springdale Borough	Springdale Borough	No Data	No Data		
44 Fox Chapel Borough	Dept. of Public Works	Routine	Dept. of Public Works			109 Springdale Township	Springdale Township	As-needed	COG		
45 Franklin Park Borough	Dept. of Public Works	Routine	Dept. of Public Works, McCandless Twp			110 Stowe Township	Dept. of Public Works, COG	Routine	Dept. of Public Works, COG		
46 Frazer Township			On-lot			111 Swissvale Borough	Dept. of Public Works	Routine	Dept. of Public Works, COG		
47 Glassport Borough	Glassport Borough	As-needed	Street Dept., COG			112 Tarentum Borough	Tarentum Borough	Routine	UAJSA		
48 Glenfield Township			On-lot			113 Thornburg Borough	Dept. of Public Works	As-needed	Dept. of Public Works		
49 Green Tree Borough	Green Tree Borough	Routine	Borough, Contractor			114 Trafford Borough	Borough Road Crew	Routine	Dept. of Public Works, COGs		
50 Hampton Township	HTSA	As-needed	HTMA, COG			115 Turtle Creek Borough	Street Dept., COG	Routine	Borough Street Dept., COG		
51 Harmar Township	Dept. of Public Works	As-needed	COG			116 Upper St. Clair Township	Dept. of Public Works	Routine	Dept. of Public Works		
52 Harrison Township	Harrison Township	Routine	Public Works			117 Verona Borough	Dept. of Public Works	As-needed	Dept. of Public Works, COG		
53 Haysville Borough			On-lot			118 Versailles Borough	Versailles Borough	No Data	No Data		
54 Heidelberg Borough	Dept. of Public Works	Routine	Dept. of Public Works			119 Wall Borough	Sewage Dept. (Part-time)	As-needed	Borough, COG		
55 Homestead Borough	Homestead Borough	As-needed	COG			120 West Deer Township	DCDBA	Routine	Authority, Contractor, COG		
56 Indiana Township	Dept. of Public Works	Routine	Dept. of Public Works			121 West Elizabeth Borough	Plant Operators, Contractor	As-needed	Borough, COG		
57 Ingram Township	Dept. of Public Works	As-needed	Dept. of Public Works			122 West Homestead Borough	No Data	No Data	No Data		
58 Jefferson Borough	Local Forces	Routine	COG			123 West Mifflin Borough	WMSSMA	Routine	Authority		
59 Kennedy Township	Dept. of Public Works	As-needed	Dept. of Public Works			124 West View Borough	Dept. of Public Works	Routine	WVMA, COG		
60 Kilbuck Township	Contractor	As-needed	Contractor			125 Whitaker Borough	Dept. of Public Works	As-needed	Dept. of Public Works		
61 Leet Township	LTMA, Contractor	As-needed	LTMA, Contractor			126 White Oak Borough	White Oak Borough Authority	Routine	White Oak Borough Authority		
62 Leetsdale Borough	Leetsdale Borough	Routine	COG			127 Whitehall Borough	Dept. of Public Works	Routine	Dept. of Public Works		
63 Liberty Borough	Liberty Borough	As-needed	COG			128 Wilkins Township	Maintenance Dept.	Routine	Maintenance Dept., COG		
64 Lincoln Borough	Lincoln Borough	As-needed	COG			129 Wilkinsburg Borough	Dept. of Public Works	Routine	Dept. of Public Works, COG		
65 Marshall Township	Marshall Township	No Data	No Data			130 Wilmerding Borough	Wilmerding Borough	As-needed	COG		

4.0 Wastewater Management Costs

4.1 Treatment Agency Annual Costs

The 35 wastewater treatment agencies in Allegheny County have a combined annual budget of approximately \$110 million.¹ This amount includes collection system costs for systems in which the treatment authority is also responsible for collection system operation and maintenance (O&M). However, the total amount does not include collection system O&M costs for municipalities that directly maintain their collection systems. The data for each treatment agency is shown on Table 4-1 below. Local collection system costs are estimated to total an additional \$50 million. This estimate is based upon municipal expenditures in 1995 as reported to the Pennsylvania Department of Community and Economic Development.² This figure may include wholesale payments to the various treatment agencies for some municipalities, and hence may be overstated.

Of the \$110 million in average costs for the treatment agencies, approximately 64 percent is attributable to operating expenses (including administrative costs). The remaining 36 percent is attributable to debt service costs. ALCOSAN's \$53 million budget (1998) dominates the county-wide total. ALCOSAN is currently undergoing Phase 1 of a treatment plant Capital Improvement Program that will result in odor control and expanded plant capacity. The incremental debt service payments for these improvements in 1999 will raise the total budget by approximately \$10 million.

4.1.1 Treatment Agency Annual Costs per Household by Treatment Agency

Average annual costs per household have been estimated for the 35 treatment agencies. The county-wide average cost per household is approximately \$280 annually. Service populations range from less than 100 to more than 880,000. The weighted average cost per household for the treatment agencies is \$190 annually. This number is heavily influenced by ALCOSAN. These numbers are based upon quarterly service charges (where applicable) plus the unit rate per thousand gallons. An average household water consumption of 20,000 gallons per quarter was assumed. This figure is based on historical billing data for the ALCOSAN service area. The average annual household costs may not include local collection system costs. Average household costs per agency are provided in Table 4-2.

4.1.2 Annual Wastewater Management Costs per Household by Municipality

Total annual wastewater management costs per household include the treatment agency costs plus the costs of operating and maintaining the municipal collection system. The estimated total average costs per household by municipality are shown on Table 4-3 based on municipal retail rates. This information was compiled by ALCOSAN in 1998. The average cost per household by municipality is approximately \$250 annually. The population weighted average cost per household is approximately \$235 annually.

The unweighted average is less than the unweighted treatment agency average due to the numerous municipalities within ALCOSAN's service area that do not add a local charge for sewer maintenance. Current ALCOSAN rates result in an estimated average cost per household of \$156. It should be noted that

¹ This figure reflects aggregate numbers from various budget years. The most current budget information available was used, therefore the budget years vary between agencies. The total amounts illustrate the magnitude of wastewater management costs within the County.

² 1995 Local Government Financial Statistics

municipalities that do not add to the ALCOSAN (or other treatment agency) user charges recover the costs of the local sewer system through general fund property taxes. Thus, the actual cost of wastewater management in these cases is higher than indicated by the rate information presented in this report.

It may also be noted that municipalities may add a local surcharge onto ALCOSAN or other authorities' user charges at their discretion. The level of municipal add-ons may or may not directly relate to the costs of operating and maintaining the local collection systems. Typically, a \$0.50 fee may be added to ALCOSAN's current \$1.82 per thousand gallon volume charge. Such add-ons have traditionally been a source of municipal funding for municipalities that do not affect property tax levels.

4.2 National Rate Comparisons

Wastewater costs within Allegheny County are in line with those of other major metropolitan areas. Recent (1998) data³ from 27 metropolitan areas indicated that average annual wastewater costs per household ranged from \$ 53 (Memphis) to \$496 (Seattle) with an average of \$265.⁴ This compares to the population weighted average cost per household in Allegheny County of \$235. The average costs for the 27 metropolitan areas are shown on Table 4-4.

Table 4-4
Comparison of Average Wastewater Costs per Household
Major Metropolitan Areas

Atlanta	\$307	El Paso	\$361	New York	\$239
Austin	\$339	Houston	\$268	Philadelphia	\$343
Baltimore	\$226	Indianapolis	\$127	Phoenix	\$131
Boston	\$412	Jacksonville	\$390	San Antonio	\$178
Chicago	\$141	Los Angeles	\$245	San Diego	\$400
Columbus	\$260	Memphis	\$53	San Francisco	\$367
Dallas	\$251	Milwaukee	\$115	San Jose	\$275
Denver	\$176	Nashville	\$435	Seattle	\$496
Detroit	\$204	New Orleans	\$164	Washington	\$251
					Average \$265

4.3 Funding Sources

Access to affordable capital to properly maintain, refurbish or expand municipal wastewater systems is critically important. Larger municipalities and municipal authorities can access capital markets such as the municipal bond market. Smaller municipalities and municipalities with low and moderate income levels have difficulty in accessing capital markets at affordable rates and issuance costs. Even with access, low and moderate income municipalities may have trouble repaying debt without raising sewer user charges to unacceptable levels.

While the broad-based USEPA Construction Grants Program no longer exists, there are a number of targeted loan and grant programs that, if cleverly used and bundled with other resources, could provide significant sources of funding for municipal and municipal authority wastewater projects. Some of the most directly applicable funding sources are summarized on Table 4-5.

³ Source: Camp Dresser & McKee Inc.

⁴ Not weighted by population.

**Table 4-1
Annual Wastewater Management Costs By Treatment Agency**

Treatment Agency	Revenue	O & M	Administration	Debt Service	Other	Total	Surplus(Deficit)	DSCR	Year	Source	Act / Bud
1 Aleppo Township Authority	\$85,300	\$76,300	\$6,700	\$0	\$0	\$83,000	\$2,300		1997	Allepo Twp. Annual Report (Bankson Eng.)	Actual
2 Allegheny County Sanitary Authority	\$54,340,800	\$28,079,600	\$5,578,900	\$19,331,600	\$0	\$52,990,100	\$1,350,700	1.07	1998	ALCOSAN 1999 Budget Presentation	Budgeted
3 Allegheny Valley Joint Sewage Authority	\$2,082,200	\$810,500	\$41,100	\$82,000	\$300,700	\$1,234,300	\$847,900	11.35	1998	AVJSA Audit Report (Malin, Landis, & Co.)	Actual
4 Bell Acres Municipal Authority	\$45,400	\$32,500	\$4,600	\$0	\$6,900	\$44,000	\$1,400		1997	Statistics For Municipal Authorities in PA	Actual
5 Bethel Park Municipal Authority	\$5,569,300	\$3,020,700	\$55,800	\$1,790,000	\$702,700	\$5,569,300	\$0	1.00	1998	Mun. of Bethel Park Budget Summary	Budgeted
6 Clairton Municipal Authority	\$1,428,300	\$1,017,200	\$42,400	\$310,600	\$0	\$1,370,200	\$58,100	1.19	1998	Clairton Annual Report (Bankson Eng.)	Budgeted
7 Coraopolis Municipal Sanitary Authority	\$1,062,300	\$749,300	\$225,800	\$61,800	\$0	\$1,036,900	\$25,400	1.41	1998	Coraopolis Proposed Budget - Exhibit I	Budgeted
8 Crescent South Heights Municipal Authority	\$493,300	\$185,900	\$166,900	\$40,100	\$88,400	\$481,200	\$12,100	1.30	1998	Crescent South Heights Proposed Budget	Budgeted
9 Deer Creek Drainage Basin Authority	\$1,799,000	\$564,100	\$78,100	\$755,000	\$375,000	\$1,772,200	\$26,800	1.04	1999	DCDBA Annual Report (Gibson-Thomas Eng.)	Budgeted
10 Dravosburg Borough	\$278,300	\$176,500	\$0	\$0	\$0	\$176,500	\$101,800		1995	Local Government Financial Statistics (PaDCED)	Actual
11 City of Duquesne	\$360,300	\$336,000	\$0	\$0	\$0	\$336,000	\$24,300		1995	Local Government Financial Statistics (PaDCED)	Actual
12 Elizabeth Borough Municipal Authority	\$669,500	\$368,900	\$8,600	\$194,100	\$43,100	\$614,700	\$54,800	1.28	1997	Statistics For Municipal Authorities in PA	Actual
13 Elizabeth Township Sanitary Authority	\$1,508,500	\$1,188,700	\$1,500	\$343,000	\$0	\$1,533,200	-\$24,700	0.93	1997	Engineers Report for '97 Operations (Senate Eng.)	Budgeted
14 Township of Findlay	\$562,700	\$398,500	\$0	\$0	\$0	\$398,500	\$164,200		1995	Local Government Financial Statistics (PaDCED)	Actual
15 Borough of Glassport	\$162,400	no data	no data	no data	no data	no data	no data		1995	Local Government Financial Statistics (PaDCED)	Actual
16 Hampton Township Municipal Authority	\$2,873,400	\$924,900	\$198,500	\$840,200	\$438,000	\$2,401,500	\$471,900	1.56	1997	Hampton 1998 Proposed Sewer Fund Summary	Budgeted
17 Municipal Authority of the Borough of Leetsdale	\$403,000	\$314,000	\$21,000	\$42,900	\$0	\$377,900	\$25,100	1.59	1998	Borough of Leetsdale Annual Report	Budgeted
18 Borough of Lincoln	\$3,400	\$4,300	\$0	\$0	\$0	\$4,300	-\$900		1995	Local Government Financial Statistics (PaDCED)	Actual
19 McCandless Township Sanitary Authority	\$5,814,300	\$2,735,500	\$1,865,000	\$274,500	\$90,400	\$4,965,400	\$848,900	4.09	1997	MTSA Financial Report (Carbis Walker)	Actual
20 The Municipal Authority of the City of McKeesport	\$2,778,900	\$1,469,500	\$668,100	\$343,000	\$298,300	\$2,778,900	\$0	1.00	1998	McKeesport Authority Annual Report	Budgeted
21 Moon Township Municipal Authority	\$4,950,100	\$1,722,700	\$775,900	\$649,500	\$0	\$3,148,200	\$1,801,900	3.77	1997	Statistics For Municipal Authorities in PA	Actual
22 Borough of Oakmont	\$1,263,000	\$838,600	\$0	\$308,100	\$0	\$1,146,700	\$116,300	1.38	1998	Borough of Oakmont WWTP Budget Sheet	Budgeted
23 Ohio Township Sanitary Authority	\$740,900	\$100,500	\$31,600	\$205,600	\$34,500	\$372,300	\$368,600	2.74	1997	Statistics For Municipal Authorities in PA	Actual
24 Municipality of Penn Hills	\$8,440,100	\$3,631,000	\$0	\$3,695,800	\$0	\$7,326,800	\$1,113,300	1.30	1998	Penn Hills 1999 Fiscal Plan	Budgeted
25 Pennsbury Borough	\$39,500	\$39,500	\$0	\$0	\$0	\$39,500	\$0		1995	Local Government Financial Statistics (PaDCED)	Actual
26 Pleasant Hills Authority	\$2,870,200	\$948,100	\$154,800	\$913,700	\$52,000	\$2,068,500	\$801,700	1.88	1997	Statistics For Municipal Authorities in PA	Actual
27 Plum Borough Municipal Authority	\$3,568,000	\$1,717,500	\$256,000	\$1,417,000	\$0	\$3,390,500	\$177,500	1.13	1999	Plum Borough Operating Budgets	Budgeted
28 Township of Richland	\$842,400	\$196,600	\$0	\$0	\$645,800	\$842,400	\$0		1995	Local Government Financial Statistics (PaDCED)	Actual
29 The Mun. Authority of the Twp. of Robinson	\$2,462,500	\$1,077,800	\$397,600	\$904,100	\$0	\$2,379,500	\$83,000	1.09	1998	Twp. Of Robinson Annual Report (NIRA Eng.)	Budgeted
30 Borough of Sewickley	\$590,000	\$583,300	\$0	\$6,700	\$0	\$590,000	\$0	1.00	1998	Borough of Sewickley Sewer Operating Fund	Budgeted
31 Sewickley Hills Borough	\$36,900	\$30,300	\$0	\$0	\$17,800	\$48,000	-\$11,100		1998	Sewickley Hills Authority '98 Budget	Budgeted
32 South Versailles Township	\$18,900	\$14,400	\$0	\$0	\$0	\$14,400	\$4,500		1998	South Versailles Budget '98	Budgeted
33 Upper Allegheny Joint Sanitary Authority	\$2,854,800	\$1,145,200	\$153,400	\$1,252,800	\$221,300	\$2,772,700	\$82,100	1.07	1998	UAJSA Annual Report (Gibson-Thomas Eng.)	Budgeted
34 West Elizabeth Sanitary Authority	\$266,200	\$168,200	\$69,600	\$0	\$27,800	\$265,600	\$600		1998	Estimated 1998 Revenues / Expenses	Budgeted
35 West Mifflin Sanitary Sewer Municipal Authority	\$1,132,600	\$526,100	\$117,600	\$305,900	\$24,600	\$974,300	\$158,300	1.52	1997	Statistics For Municipal Authorities in PA	Actual
Total	\$112,396,700	\$55,192,700	\$10,919,500	\$34,068,000	\$3,367,300	\$103,547,500	\$8,849,200	1.26			

**Table 4-2
Treatment Agency Average Household Costs**

	Treatment Service Provider	Service Charge Per Quarter	Rate Per 1,000 Gallons	Average Annual Bill
1	Aleppo Township Authority	\$42.34	\$3.38	\$277.52
2	Allegheny County Sanitary Authority	\$2.70	\$1.82	\$156.40
3	Allegheny Valley Joint Sewage Authority *		\$1.12	\$89.60
4	Bell Acres Municipal Authority		\$4.56	\$364.80
5	Bethel Park Municipal Authority	\$25.00	\$2.00	\$260.00
6	Clairton Municipal Authority		\$2.85	\$228.00
7	Coraopolis Borough Municipal Authority		\$3.16	\$252.80
8	Crescent South Heights Municipal Authority	\$36.82	\$3.00	\$387.28
9	Deer Creek Drainage Basin Authority	\$45.00	\$3.65	\$355.20
10	Dravosburg Borough		\$5.00	\$400.00
11	City of Duquesne		\$1.75	\$140.00
12	Elizabeth Borough Municipal Authority	\$39.00	\$4.20	\$340.80
13	Elizabeth Township Sanitary Authority	\$54.00	\$1.50	\$276.00
14	Township of Findlay	\$43.75	\$3.84	\$297.88
15	Borough of Glassport	\$30.00		\$120.00
16	Hampton Township Sanitary Authority	\$24.71	\$1.65	\$131.84
17	Municipal Authority of the Borough of Leetsdale	\$32.58	\$2.05	\$220.52
18	Borough of Lincoln - Virginia Drive	\$39.00	\$2.10	\$282.00
19	McCandless Township Sanitary Authority	\$12.63	\$3.00	\$290.52
20	The Municipal Authority of the City of McKeesport	\$13.23	\$1.47	\$117.60
21	Moon Township Municipal Authority		\$2.82	\$225.60
22	Borough of Oakmont	\$12.00	\$3.25	\$308.00
23	Ohio Township Sanitary Authority	\$60.00	\$4.25	\$410.00
24	Municipality of Penn Hills	\$25.00	\$5.15	\$512.00
25	Pennsbury Borough	\$11.00		\$44.00
26	Pleasant Hills Authority	\$10.00	\$4.96	\$416.96
27	Plum Borough Municipal Sewer Authority	\$60.00	\$2.67	\$393.69
28	Township of Richland	\$53.90	\$2.91	\$448.40
29	The Mun. Authority of the Twp. Of Robinson	\$18.06	\$4.55	\$436.24
30	Borough of Sewickley	\$15.00	\$2.25	\$195.00
31	Sewickley Hills Borough	\$125.00		\$500.00
32	South Versailles Township	\$52.60		\$210.40
33	Upper Allegheny Joint Sanitary Authority	\$27.00	\$2.75	\$262.00
34	West Elizabeth Sanitary Authority	\$32.00		\$128.00
35	West Mifflin Sanitary Sewer Municipal Authority	\$36.24	\$2.87	\$326.34
			Numerical Average	\$280.15
			Population Weighted Average	\$190.38

Based on average household water usage of 80,000 gallons annually.

* For treatment only

**Table 4-3
Annual Household Wastewater Management Costs By Municipality**

	Municipality	Average Annual Cost	Percentage Above or Below Average	1990 Median Household Income	Annual Cost as % Median Household Income		Municipality	Average Annual Cost	Percentage Above or Below Average	1990 Median Household Income	Annual Cost as % Median Household Income	
1	Aleppo Township	\$278	11%	\$41,736	0.66%	66	McCandless, Town of	\$340	36%	\$46,900	0.73%	
2	Aspinwall Borough	\$156	-37%	\$29,500	0.53%	67	McDonald Borough	\$402	61%	\$29,200	1.38%	
3	Avalon Borough	\$156	-37%	\$22,700	0.69%	68	McKees Rocks, Borough of	\$365	46%	\$16,300	2.24%	
4	Baldwin Borough	\$288	15%	\$31,800	0.91%	69	McKeesport, City of	\$118	-53%	\$16,427	0.72%	
5	Baldwin Township	\$264	6%	\$34,000	0.78%	70	Millvale Borough	\$192	-23%	\$20,300	0.95%	
6	Bell Acres Borough	\$365	46%	\$35,729	1.02%	71	Monroeville, Municipality of	\$222	-11%	\$36,400	0.61%	
7	Bellevue Borough*	\$156	-37%	\$23,700	0.66%	72	Moon Township	\$332	33%	\$42,016	0.79%	
8	Ben Avon Borough*	\$156	-37%	\$37,000	0.42%	73	Mt. Lebanon Municipality	\$182	-27%	\$45,800	0.40%	
9	Ben Avon Hts. Borough*	\$156	-37%	\$72,200	0.22%	74	Mt. Oliver Borough	\$171	-32%	\$18,600	0.92%	
10	Bethel Park Borough	\$260	4%	\$41,100	0.63%	75	Munhall Borough	\$196	-21%	\$23,900	0.82%	
11	Blawnox Borough*	\$156	-37%	\$21,200	0.74%	76	Neville Township	\$376	51%	\$23,400	1.61%	
12	Brackenridge Borough	\$270	8%	\$22,223	1.22%	77	North Braddock Borough	\$182	-27%	\$18,600	0.98%	
13	Braddock Borough	\$216	-13%	\$17,300	1.25%	78	North Fayette Township	\$379	52%	\$34,500	1.10%	
14	Braddock Hills Borough*	\$156	-37%	\$17,500	0.89%	79	North Versailles Township	\$288	15%	\$25,100	1.15%	
15	Bradford Woods Borough	\$340	36%	\$68,254	0.50%	80	Oakdale Borough	\$363	45%	\$32,400	1.12%	
16	Brentwood Borough	\$179	-28%	\$27,700	0.65%	81	Oakmont Borough	\$308	23%	\$31,539	0.98%	
17	Bridgeville Borough	\$205	-18%	\$25,300	0.81%	82	O'Hara Township	\$342	37%	\$49,100	0.70%	
18	Carnegie Borough	\$226	-10%	\$21,700	1.04%	83	Ohio Township	\$410	64%	\$42,100	0.97%	
19	Castle Shannon Borough	\$482	93%	\$28,700	1.68%	84	Osborne Borough	\$210	-16%	\$53,543	0.39%	
20	Chalfant Borough	\$193	-23%	\$24,200	0.80%	85	Penn Hills, Municipality of	\$306	23%	\$32,300	0.95%	
21	Cheswick Borough	\$128	-49%	\$31,676	0.40%	86	Pennsbury Village Borough	\$44	-82%	\$39,405	0.11%	
22	Churchill Borough*	\$156	-37%	\$58,600	0.27%	87	Pine Township - Brush Creeek	\$214	-14%	\$46,810	0.46%	
23	Clairton, City of	\$228	-9%	\$17,396	1.31%	87	Pine Township - Pine Creek	\$340	36%	\$46,810	0.73%	
24	Collier Township	\$372	49%	\$29,700	1.25%	88	Pitcairn Borough*	\$156	-37%	\$21,100	0.74%	
25	Coraopolis Borough	\$253	1%	\$21,865	1.16%	89	Pittsburgh, City of*	\$156	-37%	\$20,700	0.76%	
26	Crafton Borough	\$196	-21%	\$28,200	0.70%	90	Pleasant Hills Borough MA	\$417	67%	\$41,577	1.00%	
27	Crescent Township	\$255	2%	\$35,391	0.72%	91	Plum Borough	\$394	58%	\$36,800	1.07%	
28	Dormont Borough	\$236	-5%	\$27,700	0.85%	92	Portvue Borough	\$184	-26%	\$24,976	0.74%	
29	Dravosburg Borough	\$400	60%	\$22,886	1.75%	93	Rankin Borough*	\$156	-37%	\$10,900	1.43%	
30	Duquesne, City of	\$140	-44%	\$15,801	0.89%	94	Reserve Township	\$174	-30%	\$31,472	0.55%	
31	East Deer Township	\$270	8%	\$21,840	1.24%	95	Richland Township	\$355	42%	\$38,968	0.91%	
32	East McKeesport Borough	\$242	-3%	\$20,900	1.16%	96	Robinson Township	\$436	75%	\$38,500	1.13%	
33	East Pittsburgh Borough	\$193	-23%	\$16,200	1.19%	97	Ross Township - ALCOSAN	\$226	-10%	\$36,400	0.62%	
34	Edgewood Borough	\$182	-27%	\$33,400	0.54%	97	Ross Township - McCandless	\$340	36%	\$36,400	0.94%	
35	Edgeworth Borough	\$249	0%	\$69,314	0.36%	98	Roslyn Farms Borough*	\$223	-11%	\$73,600	0.30%	
36	Elizabeth Borough	\$338	35%	\$21,888	1.54%	99	Scott Township	\$268	7%	\$34,600	0.78%	
37	Elizabeth Township	\$276	10%	\$30,542	0.90%	100	Sewickley Borough	\$195	-22%	\$30,402	0.64%	
38	Emsworth Borough*	\$156	-37%	\$27,900	0.56%	101	Sewickley Heights Borough		on-lot	\$85,219	0.00%	
39	Etna Borough	\$171	-32%	\$24,900	0.69%	102	Sewickley Hills Borough	\$500	100%	\$55,961	0.89%	
40	Fawn Township	\$820	228%	\$31,312	2.62%	103	Shaler Township	\$260	4%	\$37,000	0.70%	
41	Findlay Township	\$298	19%	\$35,028	0.85%	104	Sharpsburg Borough*	\$156	-37%	\$18,900	0.83%	
42	Forest Hills Borough	\$196	-21%	\$38,600	0.51%	105	South Fayette Township*	\$156	-37%	\$35,700	0.44%	
43	Forward Township - Elizabeth Borough	\$381	52%	\$29,115	1.31%	106	South Park Township	\$320	28%	\$37,382	0.86%	
43	Forward Township - Timber Run	\$594	138%	\$29,115	2.04%	107	South Versailles Township	\$210	-16%	\$26,719	0.79%	
44	Fox Chapel Borough	\$208	-17%	\$123,100	0.17%	108	Springdale Borough	\$180	-28%	\$22,875	0.79%	
45	Franklin Park Borough - Bear Run	\$410	64%	\$66,800	0.61%	109	Springdale Township	\$152	-39%	\$27,578	0.55%	
45	Franklin Park Borough - Lowries Run	\$200	-20%	\$66,800	0.30%	110	Stowe Township	\$196	-21%	\$19,700	1.00%	
45	Franklin Park Borough - Pine Creek	\$340	36%	\$66,800	0.51%	111	Swissvale Borough*	\$156	-37%	\$23,800	0.66%	
46	Frazer Township		on-lot	\$26,603	0.00%	112	Tarentum Borough	\$264	5%	\$19,932	1.32%	
47	Glassport Borough	\$120	-52%	\$20,146	0.60%	113	Thornburg Borough	\$156	-37%	\$85,300	0.18%	
48	Glenfield Borough		on-lot	\$18,250	0.00%	114	Trafford Borough	\$156	-37%	\$31,300	0.50%	
49	Greentree Borough	\$184	-26%	\$40,600	0.45%	115	Turtle Creek Borough	\$156	-37%	\$18,100	0.86%	
50	Hampton Township - Hampton	\$369	48%	\$45,538	0.81%	116	Upper St. Clair Township	\$222	-11%	\$67,700	0.33%	
50	Hampton Township - McCandless	\$123	-51%	\$45,538	0.27%	117	Verona Borough*	\$156	-37%	\$22,000	0.71%	
51	Harmar Township	\$120	-52%	\$26,523	0.45%	118	Versailles Borough*	\$156	-37%	\$21,170	0.74%	
52	Harrison Township	\$300	20%	\$24,766	1.21%	119	Wall Borough	\$342	37%	\$17,900	1.91%	
53	Haysville Borough		on-lot	\$22,679	0.00%	120	West Deer Township	\$355	42%	\$31,672	1.12%	
54	Heidelberg Borough*	\$156	-37%	\$22,100	0.71%	121	West Elizabeth Borough	\$128	-49%	\$24,375	0.53%	
55	Homestead Borough	\$283	13%	\$11,400	2.48%	122	West Homestead Borough*	\$156	-37%	\$22,300	0.70%	
56	Indiana Township	\$156	-37%	\$34,800	0.45%	123	West Mifflin Borough	\$326	31%	\$26,900	1.21%	
57	Ingram Borough	\$182	-27%	\$26,600	0.69%	124	West View Borough	\$186	-26%	\$28,600	0.65%	
58	Jefferson Hills Borough	\$358	43%	\$34,548	1.04%	125	Whitaker Borough*	\$156	-37%	\$23,600	0.66%	
59	Kennedy Township	\$256	3%	\$35,700	0.72%	126	White Oak Borough	\$239	-4%	\$30,110	0.79%	
60	Kilbuck Township	\$251	0%	\$41,700	0.60%	127	Whitehall Borough - ALCOSAN	\$234	-6%	\$34,200	0.68%	
61	Leet Township	\$246	-1%	\$37,961	0.65%	127	Whitehall Borough - Pleasant Hills	\$277	11%	\$34,200	0.81%	
62	Leetsdale Borough	\$221	-12%	\$21,570	1.02%	128	Wilkins Township	\$216	-13%	\$33,300	0.65%	
63	Liberty Borough	\$214	-14%	\$25,578	0.84%	129	Wilkinsburg Borough	\$226	-9%	\$22,700	1.00%	
64	Lincoln Borough	\$282	13%	\$26,950	1.05%	130	Wilmerding Borough	\$182	-27%	\$16,200	1.13%	
65	Marshall Township - Brush Creek	\$214	-14%	\$54,400	0.39%							
65	Marshall Township - Pine Creek	\$340	36%	\$54,400	0.63%							
								Average	\$250	Average	\$34,600	0.72%
								Population Weighted Average	\$235	Weighted Average	\$31,000	0.76%
								Minimum	\$44	Minimum	\$10,900	2.62%
								Maximum	\$820	Maximum	\$123,100	0.11%

* Local collection system costs addressed through property taxes.

**Table 4 - 5
Funding Sources**

Program Title	Agency	Assistance	Comments
Construction Loan Program	<u>PENNVEST</u> Larry Gasparato Pennsylvania Infrastructure Investment Authority 22 South Third Street Harrisburg, Pa 17101 (717) 783-4490	100% loans for projects up to \$11 million @ 1% to 6% interest for 20 years	
Individual On-Lot Sewage Disposal Systems Program	PENNVEST	Low interest loans to homeowners (1%) for up to 15 years.	3RWWD Program is investigating legislation to open eligibility for sewer rehabilitation
Wastewater Operator Outreach Program	<u>PaDEP & PaDCED</u> Thomas J. Brown PaDEP Bureau of Water Quality Mng. PO Box 625 Ebensburg, Pa 15931-0625 (814) 472-1900	Technical assistance for POTW operation & maintenance	
Act 537 Sewage Grants	<u>PaDEP.</u> Southwest Regional Office Tim V. Dreier 400 Waterfront Drive Pittsburgh, Pa 15222-4745 (412) 442-4000	Grants for 50% of the costs associated with preparing a 537 plan.	
Act 339 Sewage Treatment Plant Operation Grants	<u>PaDEP</u> Anthony Maisano, Chief Bureau of Municipal Planning & Finance - Adm. Services Sect. PO Box 8466 Harrisburg, Pa 17105-8466 (717) 787-6744	Annual operating grants equal to 2% of the depreciated value of local investment in treatment facilities	Anticipated to be phased out over next three state fiscal years.
Act 167 Stormwater Management Plan	<u>PaDEP</u> Durla Lathia, Chief Bureau of Land and Water Conservation - Division of Stormwater Management and Sediment Control PO Box 8555 Harrisburg, Pa 17105-8555 (717) 783-7577	75% grant for preparation of municipal stormwater management plans.	Must be within a watershed with approved plan. Potential use for municipalities removing I/I sources?
PEDFA Loans	Pa. Economic Development Financing Authority Kim Kaufman, Director PEDFA Pa. Department of Commerce Bureau of Bonds Room 466, Forum Building Harrisburg, Pa 17120 (717) 783-6112	Loans between \$0.4 and \$10 million.	Bond bank (analogous to PENNVEST) intended to facilitate economic development

Program Title	Agency	Assistance	Comments
Community Development Block Grants / Small Communities	<u>PaDCED</u> Riley Stoy, Chief Department of Community Affairs Bureau of Housing and Development - Small Communities Program Division Room 515, Forum Building Harrisburg, Pa 17120 (717) 783-3910	Grants to provide local infrastructure needs. 70% of project area population must be low/moderate income	
Councils of Governments / Intermunicipal Projects Program	<u>PaDCED</u> Fred Reddig, Division Chief Bureau of Local Gov. Services Municipal Programs Division Room 582, Forum Building Harrisburg, Pa 17120-0155 (717) 783-4657	50% grants for inter-municipal cooperative projects or COGs	Potential funding source for joint flow monitoring, engineering studies, etc.
Local Government Capital Projects Loan Program	<u>PaDCED (Center for Local Government Services)</u> Brenda Fried Bureau of Local Gov. Services Municipal Programs Division Room 582, Forum Building Harrisburg, Pa 17120-0155 (717) 783-4657	Loans for up to \$25k for municipal equipment.	Potential source of funding for sewer system equipment such as flow monitors.
State Planning Assistance Grants	<u>PaDCED</u> Joseph Blatt, Regional Planner 413 State Office Building 300 Liberty Avenue Pittsburgh, Pa 15222 (412) 565-5002	50% grants for community planning.	Potential piggy-back with 537 grant or 3RWWD grant
Water & Waste Disposal Grants & Loans	<u>Rural Development Agency (formerly FmHA)</u> PO Box 329 Meadow Lands, PA 15347-0329 (724) 222-3060	Grants and loans for municipalities with populations less than 10,000 population	
Public Works and Development Facilities Program	<u>US Dept. Of Commerce</u> Anthony Pecone, Statewide Rep. US Economic Development Adm. 1933A New Berwick Highway Bloomsburg, Pa 17815 (717) 389-7560	80% grants for infrastructure projects required for defined economic expansion project.	

**Table 4 - 5
Funding Sources**

Program Title	Agency	Assistance	Comments
Federal Surplus Property Donation Program	Pa Department of General Services Scott Pepperman, Adm. Officer Federal Surplus Property Division Bureau of Supplies and Surplus Operation Pa Dept. Of General Services PO Box 1365 Harrisburg, Pa. 17105-1365 (717) 787-9724	Distribution of surplus federal property & equipment	McCandless TSA has been very successful / resourceful in obtaining pumps, generators, etc.
Environmental Restoration and Resource Protection Program (Water Resources Act Section 313)	US Army Corps of Engineers Pittsburgh District Office 1000 Liberty Avenue Pittsburgh, Pa 15222-4186 (412)	75% grants for water and wastewater facilities.	Local Congressional delegation has worked to fully expand eligibility to Allegheny County
Sewer and Water Program - Community Development Block Grants	Allegheny County Department of Economic Development Bud Schubel, Assistant Manager Community Development Division 425 Sixth Avenue Suite 800 Pittsburgh, Pa 15219 (412) 350-1038	50% grants for water and wastewater infrastructure improvements in low/medium income areas	Highly sought after by municipalities, limited funding available.
Sewer System Rehabilitation Demonstration Grants	Three Rivers Wet Weather Demonstration Program John Shornbert, Program Manager 3901 Penn Avenue Building No. 5 Pittsburgh, Pa 15224-1318 (412) 578-8040	~55% grant funding for innovative technical, institutional or financial projects addressing wet weather flow management issues	Eligibility currently limited to ALCOSAN service area.

5.0 Wet Weather Flow Management

5.1 Overview

The cost effective and environmentally responsible management of sewage flows during wet weather has become the dominant wastewater management issue in Allegheny County due to the juxtaposition of the County's geography, demographics and evolving national regulatory priorities. With certain limited exceptions described elsewhere in this report, the sewerage and treatment plant infrastructure within Allegheny County is adequate to handle sewage generated during dry weather. During wet weather, however, the County's sewerage is overwhelmed by excessive inflow and infiltration of storm and ground water. Excessive inflow and infiltration (I/I) enters the sewers through broken and misaligned collector sewers, leaking manholes, deteriorated building sewers (house laterals), downspouts and foundation drains, street catch basins, natural streams that have been culverted into sewers, and a variety of other intentional and unintentional sources.

Flow monitoring data conducted within the ALCOSAN service area is illustrative of the magnitude of wet weather flows. Flow monitoring has shown typical wet weather flow rates in sanitary sewered areas of around 1,000 GPCD, with some areas ranging to over 2,000 GPCD. Experience throughout the County and nationally indicates that these flow rates are by no means limited to the municipalities within ALCOSAN's service area. In contrast, the PaDEP design standard for new sanitary sewer systems calls for a peak capacity of 250 gallons per capita per day (GPCD).

These high flow rates are a function of the aging condition of the sewer lines in many municipalities, the lack of adequate storm sewers, the steep topography, high water tables and soil types in Allegheny County. The designers of the original interceptor sewer systems and treatment plants within the County acknowledged these conditions by providing hydraulic relief structures to allow excessive flows to overflow to area streams rather than disrupt the treatment plants downstream or restrict flows entering the pipes, thereby potentially causing local basement flooding. This approach was reasonable within the context of wastewater management in Allegheny County in the first half of this century. Allowing periodic bypassing of dilute sewage during wet weather was a massive improvement over the continuous discharge of raw sewage into the County's rivers and streams that had occurred prior to the construction of ALCOSAN and the other treatment plants.

Under current Federal and Commonwealth law, sanitary sewer overflows (SSOs) are considered illegal and to be eliminated expeditiously. USEPA and, to a lesser extent, PaDEP and the Allegheny County Health Department have threatened enforcement actions potentially leading to fines and enforceable compliance schedules. While EPA's initial focus has been on municipalities within the ALCOSAN service area, it is anticipated that the scope of their activities will eventually be expanded to all areas of the County.

The elimination of Sanitary Sewer Overflows (SSOs) and control of combined sewer overflows (CSOs) is a significant disease prevention measure that appropriately directs efforts toward protection of Allegheny County's primary drinking water source. Untreated discharges of sewage to surface waters in the County increases risk to waterborne diseases resulting from exposure to pathogenic agents of viral, protozoan, or bacteriologic origin. Recent outbreaks of cryptosporidiosis in several metropolitan areas of the United States occurred despite the fact those water treatment regimens meet currently accepted industry standards. The 1984 and 1986 outbreaks of *giardiasis* in Allegheny County were directly linked to upstream sewage discharges. Even with advanced treatment technologies, use of disinfectants, and optimum water plant performance, health authorities know that the first line of defense depends upon source water protection programs. On 45 days during the 1997 and 50 days in 1998 recreational boating season, the Allegheny County Health Department issued health advisories warning residents to avoid direct contact with river waters because

of wet weather sewage overflows and sewage system bypassing. The durations of these advisories ranged from one to thirteen days, with an average of five days.

5.2 Treatment Plant Wet Weather Performance Issues

Excessive wet weather flows have a greater impact on the collection systems than on the treatment plants. Plant operators generally are able to limit the flows into the treatment plants to operating ranges that do not disrupt the treatment processes. Limiting flows to the plants within manageable ranges often comes at the expense of upstream bypassing. Lacking sufficient plant capacity to handle peak flows and/or in-line storage such as equalization basins, makes bypassing inevitable.

Treatment plant NPDES permits typically do not include daily hydraulic upper limits on the flows to the plant. As long as peak daily flows do not interfere with the treatment process e.g., by washing out solids from clarifier tanks, they are not regulatory significant. The NPDES permits tend to focus on monthly average daily flows. When average daily flows exceed the permitted design average flow for three consecutive months, the Chapter 94 regulation would consider the plant to be chronically hydraulically overloaded.

Single month average flows that exceed the monthly limit may be indicative of acute hydraulic loading problems due to wet weather. An average flow exceeding the permitted monthly average necessarily reflects days in which the average flows were significantly over the plant design capacity. In 1997, eighteen of the 49 publicly owned treatment plants had one or more months in which the average daily flows exceeded the design average daily flow as documented in the NPDES permit. There are 23 major¹ treatment plants within Allegheny County. These range in size from ALCOSAN at 200 mgd to 1 mgd for the Flaugherty Run Sewage Treatment Plant in Moon Township. Of the 23 major plants, nine had monthly average daily flows exceeding the monthly design average daily flows in 1997.

5.3 Combined Sewer Areas

Combined sewer systems were designed to transport wastewater from domestic, commercial and institutional sources, industrial wastewater plus stormwater from street catch basins and other sources. Each building sewer (service lateral) connects to the collection sewer in the street or easement. Street catch basins and other storm sewer appurtenances are also connected to the collection sewers. The local collection sewers are connected to interceptor sewers which lead to the treatment plant. The flow of sewage from the collection sewers into the interceptor sewers is controlled through regulator structures. During dry weather, all flows from collection sewers discharge through the regulator structures into the interceptor system for conveyance to the treatment plant. During wet weather, the flows in the collection system may exceed the capacities of the interceptor sewers and/or the treatment plant. The regulators are set to force flow volumes exceeding these capacities into diversion pipes for discharge into an adjacent stream or river, resulting in a combined sewer overflow (CSO).

Combined sewer systems were a logical development of the urbanization process in the nineteenth and early twentieth centuries in Allegheny County. Local storm drainage and sewage was typically discharged directly to local creeks, drainage swales and the rivers. To protect public health, these unsanitary drains were eventually culverted and covered over. In many areas within Allegheny County, streams continue to flow into combined sewers. As wastewater treatment plants were constructed in the decades following World War II, they were sized to handle maximum dry weather flows. The remainder of flows during wet weather was intended to be discharged to receiving streams as combined sewer overflows.

¹ Defined by PaDEP and USEPA as having a capacity of 1 mgd or greater.

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5.3 Combined Sewer Areas

Combined sewer systems were designed to transport wastewater from domestic, commercial and institutional sources, industrial wastewater plus stormwater from street catch basins and other sources. Each building sewer (service lateral) connects to the collection sewer in the street or easement. Street catch basins and other storm sewer appurtenances are also connected to the collection sewers. The local collection sewers are connected to interceptor sewers which lead to the treatment plant. The flow of sewage from the collection sewers into the interceptor sewers is controlled through regulator structures. During dry weather, all flows from collection sewers discharge through the regulator structures into the interceptor system for conveyance to the treatment plant. During wet weather, the flows in the collection system may exceed the capacities of the interceptor sewers and/or the treatment plant. The regulators are set to force flow volumes exceeding these capacities into diversion pipes for discharge into an adjacent stream or river, resulting in a combined sewer overflow (CSO).

Combined sewer systems were a logical development of the urbanization process in the nineteenth and early twentieth centuries in Allegheny County. Local storm drainage and sewage was typically discharged directly to local creeks, drainage swales and the rivers. To protect public health, these unsanitary drains were eventually culverted and covered over. In many areas within Allegheny County, streams continue to flow into combined sewers. As wastewater treatment plants were constructed in the decades following World War II, they were sized to handle maximum dry weather flows. The remainder of flows during wet weather was intended to be discharged to receiving streams as combined sewer overflows.

¹ Defined by PaDEP and USEPA as having a capacity of 1 mgd or greater.

The U.S. Environmental Protection Agency (USEPA) has issued a National CSO Control Policy² to bring all CSO discharge points into compliance with the requirements of the Clean Water Act. The policy provides a comprehensive national strategy to ensure that coordinated planning efforts achieve cost effective control of combined sewer overflows. The policy recognizes the site-specific nature of CSOs and provides the necessary flexibility to tailor controls to local situations. In brief, the Policy requires municipalities with combined sewer systems to implement low cost, non-structural best management practices (Nine Minimum Controls) and to develop long term control plans that will prevent the overflows from causing water quality violations.

The National Pollution Discharge Elimination System (NPDES) permitting system requires permits for all discharges of wastewater to surface waters, including combined sewer overflows. Municipalities and municipal authorities that have treatment plants have their combined sewer overflows permitted through their existing NPDES permits. Combined sewer municipalities that do not have treatment plants are required to obtain NPDES permits for their combined sewer overflow outfalls. Those municipalities without treatment plants who have populations of less than 75,000 are eligible for a "general" NPDES permit for CSO discharges. Municipalities with populations over 75,000 (Pittsburgh) are required to obtain an individual permit. The requirements for permittees are similar, however the application process for general permits is simplified. Municipalities or municipal authorities with wastewater treatment plants have their combined sewer overflows permitted through inclusion in the NPDES permit covering the treatment plant. All CSO permits have the same five basic requirements for combined sewer systems:

- System inventory and characterization
- System hydraulic and hydrologic characterization
- Implementation of nine minimum controls
- Development of a long term control plan
- Record and submit CSO discharge information and related data.

There are forty-two municipalities within Allegheny County which are substantially served with combined sewer systems. These municipalities are listed on Table 5-1, along with their permit status as of March 1999. As of this date, 29 of the municipalities had received a permit or draft permit from PaDEP. The City of Pittsburgh is the only municipality required to obtain an individual permit.

PaDEP and USEPA consider that the municipalities and the treatment authorities have joint responsibility for compliance with the CSO policy. Thus, for example, the Allegheny County Sanitary Authority (ALCOSAN) and its 82 contributing municipalities are required to address the combined sewer overflow discharges from the municipal outfall pipes that are downstream of regulator structures on ALCOSAN's interceptor system. ALCOSAN is required through its NPDES permit to implement the nine minimum controls and to develop a long term control plan (LTCP) addressing long term structural and institutional steps necessary to comply with the CSO Policy.

**Table 5-1
Municipalities With Combined Sewer System**

Municipality	Treatment Service Provider	Type Of Sewer System	NPDES Permit Requirement	Permit Issued?
1 Aspinwall Borough	ALCOSAN	Combined	General	Yes
2 Braddock Borough	ALCOSAN	Combined	General	Yes
3 Braddock Hills Borough	ALCOSAN	Combined	General	No
4 Carnegie Borough	ALCOSAN	Combined / Separate	General	Yes
5 Crafton Borough	ALCOSAN	Combined	General	Yes
6 East Pittsburgh Borough	ALCOSAN	Combined	General	Yes
7 Etna Borough	ALCOSAN	Combined	General	Yes
8 Homestead Borough	ALCOSAN	Combined	General	No
9 McDonald Borough	ALCOSAN	Combined	General	Yes
10 McKees Rocks, Borough of	ALCOSAN	Combined	General	Yes
11 Millvale Borough	ALCOSAN	Combined	General	No
12 Munhall Borough	ALCOSAN	Combined	General	Yes
13 North Braddock Borough	ALCOSAN	Combined	General	Yes
14 Pitcairn Borough	ALCOSAN	Combined	General	Yes
15 Pittsburgh, City of	ALCOSAN	Combined / Separate	Individual	Draft
16 Rankin Borough	ALCOSAN	Combined	General	Yes
17 Reserve Township	ALCOSAN	Combined / Separate	General	No
18 Sharpsburg Borough	ALCOSAN	Combined	General	Yes
19 Stowe Township	ALCOSAN	Combined	General	Yes
20 Swissvale Borough	ALCOSAN	Combined / Separate	General	Yes
21 Turtle Creek Borough	ALCOSAN	Combined	General	Yes
22 West Homestead Borough	ALCOSAN	Combined / Separate	General	Yes
23 West View Borough (WVMUA)	ALCOSAN	Combined / Separate	General	Yes
24 Wilkins Township	ALCOSAN	Separate / Combined	General	Yes
25 Wilmerding Borough	ALCOSAN	Combined	General	Yes
26 Glassport Borough	Borough of Glassport	Combined	TP Permit ³	Yes
27 Edgeworth Borough	Borough of Sewickley	Combined	General	No
28 Sewickley Borough	Borough of Sewickley	Combined	TP Permit	Yes
29 Clairton, City of	City of Clairton Municipal Authority	Combined / Separate	TP Permit	Yes
30 Duquesne, City of	City of Duquesne	Combined	TP Permit	Yes
31 Coraopolis Borough	Coraopolis Borough MA	Combined / Separate	TP Permit	Yes
32 Dravosburg Borough	Dravosburg Borough	Combined / Separate	TP Permit	Yes
33 Elizabeth Borough	Elizabeth Borough MA	Combined	TP Permit	No
34 Edgeworth Borough	Borough of Leetsdale MA	Combined	General	No
35 Leetsdale Borough	Borough of Leetsdale MA	Combined	TP Permit	Yes
36 McKeesport, City of	City of McKeesport MUA	Combined / Separate	TP Permit	Yes
37 Portvue Borough	City of McKeesport MUA	Combined	General	No
38 Brackenridge Borough	Upper Allegheny JSA	Combined	General	No
39 East Deer Township	Upper Allegheny JSA	Combined	General	No
40 Harrison Township	Upper Allegheny JSA	Combined	General	No
41 Tarentum Borough	Upper Allegheny JSA	Combined	General	No
42 West Elizabeth Borough	West Elizabeth Sanitary Authority	Combined / Separate	General	No

² USEPA Combined Sewer Overflow (CSO) Control Policy April, 1994 EPA publication number 830-B-94-001.

³ TP Permits: Combined sewer overflows are addressed in the permit covering the wastewater treatment plant.

The Nine Minimum Controls are actions or measures that can reduce CSO discharges and their effects on receiving water quality that do not require significant engineering studies or major construction, and can be implemented in a relatively short time frame (less than two years). They are:

1. Proper operation and maintenance of the system
2. Maximum use of the collection system for storage
3. Review and modification of the pre-treatment program
4. Elimination of chronic dry weather overflows
5. Maximization of wastewater flow to the treatment plant
6. Controls of solids and floatables
7. Pollution prevention programs
8. Public notification of overflow occurrences and impacts
9. Monitoring to effectively characterize sewer overflow impacts

The CSO Policy calls for long term a *demonstrative* approach, i.e., the permittee demonstrates compliance with water quality standards, or a *presumptive* approach wherein water quality standards are presumed to be met if 85 percent of average annual flows are captured and prevented from discharging without treatment.

All of the current general permit holders located with Allegheny County are part of the ALCOSAN service area. A total of 76 CSO outfalls located along ALCOSAN interceptor sewers are included in the general permits as well as an additional 50 CSO outfalls located along the municipal collection system sewers. Eighteen CSO outfalls located along the Saw Mill Run interceptor and three interceptor relief outfalls along the Chartiers Creek and Monongahela River interceptors are included within ALCOSAN's individual NPDES permit.

A draft individual permit was issued to the City of Pittsburgh in December of 1998. The draft permit, based on the system inventory developed by the City, identified 217 CSO outfalls within the City system, including outfall structures that are located along the ALCOSAN interceptor system. The implementation steps outlined above, including a long term control plan, are to be completed within 36 months of the effective date of the permit. The effective date is as yet undetermined.

Including ALCOSAN, there are 11 treatment agencies with permits that include CSO requirements. These are listed, along with the status of their CSO programs on Table 5-2.

5.4 Sanitary Sewered Areas

5.4.1 Corrective Action Plans

During wet weather and high groundwater table conditions, many of the municipal collection systems are hydraulically overloaded. The condition of hydraulic overload is due primarily to excessive inflow and infiltration entering the municipal system. Recurring incidences of surcharging manholes and basement flooding are the primary problem with systems in this condition. To address the conditions of hydraulic overloads within a sewage system, PaDEP has developed the Corrective Action Program which requires the development of corrective action plans (CAPs) under PA Code 25.94.

Under the Corrective Action Program, municipalities are required to perform physical inspections, conduct flow monitoring and make repairs. Failure to conform with the CAP schedule can result in PaDEP issuing tap bans on the problem systems, and /or requiring the development of a consent order and agreement (COA) to eliminate the hydraulic overloading. After the municipality has implemented its CAP, additional taps and sewer extensions are regulated by PaDEP on the basis of the success of the corrective actions.

Table 5-2⁴
CSO Program Status
Municipalities and Authorities with Treatment Plants

Permittee	System Inventory		Hydraulic/ Hydrologic Character- ization		Nine Minimum Controls		Long Term Control Plan	
	Due	Receipt	Due	Receipt	Due	Receipt	Due	Receipt
ALCOSAN	9/95	8/95	3/96	3/96	9/96	9/96	Pending	
Clairton Municipal Authority	11/96	5/97	5/96	5/97	11/97	5/97	Not Specified by PaDEP	
Corapolis Municipal Authority	1/96	7/96	7/96	4/97	7/97	4/97	7/98	
Duquesne (City) STP	12/97	6/97	6/97		6/98	1/98	6/99	
Dravosburg (City) STP	Permit currently under review, Nine Minimum Control conditions to be issued.							
Glassport Borough STP	2/97		8/97		8/98		8/99	
Leetsdale Borough STP	1/97	3/99	7/97	3/99	7/98	3/99	7/99	
McKeesport (City) STP	11/96	11/96	5/97	5/97	5/98	5/98	5/99	
Sewickley Borough STP	11/94	11/94	5/95	5/95	11/95	11/95	4/00	
Upper Allegheny Joint S.A.	3/96	6/96	9/96		9/97		9/98	
West Elizabeth STP ⁵	3/96		9/96		9/97		9/98	

Most CAPs are developed by using a phased approach in response to an order from PaDEP to investigate the causes of problems with the system. This usually involves reviewing complaints, identifying contributory subsystems, and monitoring flows in the primary interceptor to determine actual flows.

Municipal responses to the imposition of CAPS vary widely. Communities most likely to implement a CAP aggressively are those that will benefit most from its implementation (e.g., the ability to add new connectors). Communities that are completely built-out do not face the same loss of economic development and may be less likely to pursue a CAP. Similarly, municipalities that are in the upper parts of the sewershed may contribute to the hydraulic overloading conditions downstream in neighboring communities. In such situations, the relative responsibilities for hydraulic problems require flow monitoring programs to allocate responsibilities.

For municipalities or authorities that have been working on CAPs for fifteen or twenty years or more and that have not been successful in eliminating the hydraulic overloading conditions, PaDEP is requiring the municipalities or authorities to develop a CAP that will either eliminate the hydraulic overload condition or build storage, conveyance or treatment facilities for the excessive flow. These CAPs are then incorporated into a COA.

⁴ Source: PaDEP April 1999.

⁵ CSO required permit conditions suspended due to system inundation by COE Lock and Dam Project (PaDEP).

**Table 5-4
Municipalities Within ALCOSAN Service Areas Tributary to SSOs
Subject to USEPA Section 308 SSO Inquiries⁶**

1	Baldwin Twp.	18	Kennedy Twp.	35	Roslyn Farms Twp.
2	Bellevue Boro.	19	Kilbuck Twp.	36	Scott Twp.
3	Ben Avon Boro	20	McCandless Twp. S.A.	37	Shaler Twp.
4	Ben Avon Heights Boro.	21	McKees Rocks Boro.	38	South Fayette Twp.
5	Bethel Park Boro.	22	Millvale Boro.	39	Thornburg Boro.
6	Blawnox Boro.	23	Monroeville Muni.	40	Trafford Boro.
7	Bridgeville Boro.	24	Mt. Lebanon Muni.	41	Upper St. Clair Twp.
8	Carnegie Borough	25	Neville Twp.	42	Verona Boro.
9	Castle Shannon Boro.	26	North Versailles Twp. S.A.	43	Wall Boro.
10	Churchill Boro.	27	O'Hara Twp.	44	West View Boro.
11	Collier Twp.	28	Ohio Twp. S.A.	45	Whitehall Boro.
12	E. McKeesport Boro.	29	Penn Hills Muni	46	Wilkins Twp.
13	Emsworth Boro.	30	Penn Twp (Westmoreland Co.)	47	Wilkesburg Boro.
14	Fox Chapel Boro.	31	Pittsburgh WSA.		
15	Franklin Park Boro.	32	Plum Boro. M.A.		
16	Heidelberg Boro.	33	Reserve Twp.		
17	Indiana Twp.	34	Ross Twp.		

5.4.3 Evolving Federal Requirements

USEPA is currently developing a sanitary sewer overflow policy that balances the hydraulic realities in many of the nation's sanitary sewered areas with the prohibitions on discharges under the Clean Water Act. EPA established a SSO Federal Advisory Subcommittee (FAC) consisting of municipalities, wastewater management and municipal trade groups such as the Water Environment Federation, and state environmental agencies. The intent of the FAC is to develop workable regulations for sanitary sewer overflows. The Clinton administration has imposed a deadline for EPA to issue final SSO regulations by April, 2001. As of July, 1999 the FAC process has proven contentious, with EPA and state agencies in disagreement with the municipalities over key provisions of the draft policy. The key provisions of the evolving draft regulation include:

- Municipalities will be required to obtain NPDES permits for sanitary sewer systems, including those discharging their sewage to downstream municipalities or treatment plants.
- SSOs will be prohibited except during extreme weather conditions. The definition of extreme weather conditions has not been determined and is contentious.
- Municipal sewer systems will be expected to handle the peak flow that can enter the collection system.
- Municipalities will be required to develop a Capacity, Management, Operation and Maintenance Programs (cMOM)
- There will be extensive reporting and public notification requirements concerning system operation and bypass occurrences.

Nationally, the estimated cost of compliance with the SSO regulations is \$78 billion.⁷ The cMOM requirements would mandate proactive sewer system operation and maintenance, defined and mandated by USEPA and PaDEP through enforceable permit requirements. cMOM requirements would include:

- Inventories of maintenance facilities, equipment and replacement parts
- Sewer use ordinances that control inflow and infiltration
- Intermunicipal service agreements that meet minimum standards
- System mapping
- A determination of base and peak hydraulic flow capacities in the system (typically requiring flow monitoring and the development of hydraulic/hydrologic models of the sewer systems).

The evolving regulations encourage inter-municipal watershed-based efforts.

5.5 Wet Weather Flow Management Institutional Issues

There are a number of institutional issues concerning the relationship between the treatment agencies and the service area municipalities. These are summarized below.

5.5.1 Intermunicipal Service Agreements

The provisions of most intermunicipal service agreements do not provide a basis for defining and regulating wet weather flow from the subscribing municipalities to the treatment agencies. "Sewage" needs to be defined in terms of a base flow, consisting of residential, commercial, industrial and institutional wastewater plus an acceptable base level of inflow and infiltration. The acceptable base flow should be calculated to include provisions for future growth. Flow volumes above this base level constitute "excessive" inflow and infiltration, which must be controlled.

In addition to addressing the volume of sewage that is acceptable by the treatment agency (or downstream municipality), the intermunicipal service agreements should address the rates and durations of elevated wet weather flows. Daily volumetric limits on flows expressed in millions of gallons per day may not reflect limitations on peak capacities within the receiving system. Storm flows, at peak flow rates, may overwhelm pump stations, regulators, sewer segments, etc. and cause an overflow even if the daily maximum volumes are not exceeded.

⁶ Source: USEPA, December 1998.

⁷ Source: Information presented at the July 28 and July 29 meeting of the Sanitary Sewer Overflow Federal Advisory Committee, held by USEPA in Washington, DC.

The existing intermunicipal agreements typically do not provide for permanent flow metering at points of connection between municipalities. This was not a problem when determining the origin of wet weather flows did not matter. For purposes of cost allocation and the documentation of regulatory compliance, accurately allocating wet weather flows between service areas will become increasingly important. The installation, operation and maintenance of flow meters will require institutional and technical cooperation between municipalities. In some cases, the installation of flow meters would pose significant technical challenges due to the hydraulic behavior of sewers during wet weather such as backflow conditions which result in negative or zero flows being recorded.

The basis of cost allocation is often not detailed in the intermunicipal agreements. Data from flow monitoring plus periodic sampling provides a basis for allocating the costs of treatment and transport of wastewater between flow, organic loading (typically biochemical oxygen demand) and solids.

The intermunicipal agreements typically do not contain a clear "re-opener" clause. There can be little financial and political incentive on the part of the subscribing municipalities to renegotiate the intermunicipal agreements to address wet weather flow management issues. The agreements tend to run for the duration of bond amortization, the service life of treatment plants, or similar long duration. These long term provisions are necessary to meet bond covenants.

5.5.2 Sewer Use Ordinances

The prohibitions on inflow and infiltration source connections in the existing sewer use ordinances need to be tightened in many municipalities. Inspections of buildings for illicit connections of foundation drains, sump pumps, downspouts and the like often occur only when the property is being sold or reassessed. This can result in a near generational inspection cycle. The enforcement provisions tend to be weak toward clear water prohibitions. One approach utilized in other jurisdictions is the addition of a wet weather cost surcharge to sewer user fees that is terminated upon documentation of compliance with the sewer use ordinance.

5.5.3 Stormwater Management Issues

Sanitary sewer systems often serve as defacto storm sewer systems for individual properties. Wholesale removals of excessive wet weather flows from private property could impact the existing municipal stormwater drainage system. Care must be taken not to exacerbate local stormwater management problems or to generate homeowner hostilities from drainage problems. Evaluating the adequacy of the stormwater system to convey inflow and infiltration that has been removed from sanitary sewers is an important component of an overall wet weather flow management strategy.

5.5.4 Municipal Access to Capital Funds

There are constraints on current municipal access to funds for wastewater system capital improvements. Conventional options such as the issuance of general obligation bonds (municipalities), revenue bonds (municipal authorities) are expensive for municipalities and can reduce bonding capacities for other necessary investments. The availability of capital through PENNVEST and Community Development Block Grants is limited. Alternative means of funding local improvements beyond existing sources would facilitate the correction of current system limitations. The Three Rivers Wet Weather Demonstration Program will be one important source of funding. The Program is intended to demonstrate cost effective wet weather flow management strategies however, and is not likely to have sufficient funds to address all of the County needs. The extent to which this program can assist municipalities will depend on future federal appropriations. The Three Rivers program is currently investigating the feasibility of establishing a county-wide bond banking program analogous to PENNVEST.

The costs of addressing wet weather issues on private property are another significant county-wide issue. Nationally, it is estimated that approximately 50% of inflow and infiltration may originate on private property. Successful inflow and infiltration removal programs must address this source. The costs to homeowners can be substantial. A "low impact" funding mechanism is needed to make private source repairs politically and financially acceptable. One approach that is actively being pursued by the Three Rivers Program and local legislative leaders is the expansion of the PENNVEST program to make corrections on private property eligible for low-cost, long term financing. PENNVEST currently has an analogous program for addressing on-lot wastewater system problems. Other approaches could include long term municipal bonds issued by the municipalities or authorities and backed by tax-increment financing. Municipalities could make repairs to faulty house sewer laterals and other problems on private property and recover the costs through a special tax levy on the property owner. The property owner would thereby be able to pay off the costs of the improvements over an extended period and potentially, deduct some of the incremental tax payments from his or her income taxes. The legal and logistical implications of these approaches would require additional analysis.

6.0 Unsewered Problem Areas

6.1 Unsewered Problem Areas

For the purposes of this study, an on-lot problem area is defined as a concentration of homes operating malfunctioning septic systems. These clusters of malfunctioning on-lot systems were identified by the treatment agencies and/or by the Allegheny County Health Department and the Allegheny County Department of Economic Development. The County Health Department serves as the Sewage Control Officer for Allegheny County. Therefore, ACHD's Division of Public Drinking Water and Waste Management have an acute understanding of on-lot problem areas.

Considerable progress has been made in addressing clusters of on-lot failures over the past 20 years. Based upon the information provided by ACHD, ACDED and the treatment agencies, there are approximately 60 significant on-lot problem areas remaining in Allegheny County. These are located in 31 municipalities ranging in size from Haysville to Pittsburgh. The individual problem areas are summarized on Table 6-1. The locations of these areas are shown on Figure 6-1. The size of the clusters range from 3-4 homes to 50-70 homes. Typically, the on-lot systems are failing due to combinations of poor maintenance, unsuitable soil types and small lot sizes. The areas have remained unsewered despite frequently being adjacent to or surrounded by sewers. These conditions may be primarily attributable to the high costs of sewer extensions. In a number of cases the on-lot areas are physically isolated by structures or waterways such as the Highway 65-Interstate 79 interchange in Glenfield Borough.

While the areas identified on Table 6-1 reflect ACHD's and others' best information as to current significant problems, it does not represent every individual home or small pocket area that may also operate malfunctioning septic systems. On-lot problem areas are fairly scattered throughout Allegheny County, however the southern region of the County appears to have the most severe problems. Several areas of Forward Township were identified as representing a public health hazard due to malfunctioning septic systems. The lower end of Coulter in South Versailles was also noted as a public health hazard. The Arrowhead Lakes area of Elizabeth Township has 60 percent malfunctioning septic systems. The Howes Run and Donnelville area of Fawn Township was considered a priority needs area for sewage service by ACHD.

6.2 Municipal and County Responses

The state of progress in correcting on-lot problem areas varies widely within the County. In some instances ACHD is pursuing a regional approach as a solution. This is the case for on-lot problem areas in Ohio Township. A regional wastewater facility in Ohio Township could provide for the capacity needs in Ohio Township and other neighboring municipalities like Kilbuck Run and Franklin Park. Similarly, on-lot problem areas in Lincoln Borough could receive sewage treatment at the McKeesport WPCP. In Pine Township, costs were determined to be too high to feasibly install new sewer lines to problematic areas. ACHD noted that the East Monongahela area of Forward Township on-lot problems are significant enough to warrant the installation of a treatment plant.

Often times on-lot problem areas are located below the grade of a nearby sewer line and would require a pump station or lift facility to transport sewage to the collection system. This proves to be costly when only a small number of homes are impacted. The Borough of Glassport was able to secure PENNVEST funding and CDBG funding to complete such a project. The Borough will be able to install a pump station, force main, and sewer lines to serve approximately 105 homes currently utilizing septic systems.

There are a variety of potentially viable technical and institutional alternatives for dealing with on-lot problems. These include, but are not limited to the installation of conventional sewers. While conventional sewers would provide a simple and flexible solution, they can often be cost prohibitive and can stimulate suburban sprawl. Alternative sewer technologies are available. Typically, these involve small diameter (4 inch) plastic force mains that can follow the contour below the frost line. In some installations, the septic tank is replaced with a fiberglass reinforced plastic tank with a submersible grinder pump to discharge to the small diameter collection sewer. A variation on this approach is septic tank effluent pumping wherein solids and grease are collected in a new plastic tank and the remaining wastewater is pumped into the small diameter sewers for transport to a treatment facility. There are also a number of enhanced on-lot systems that could be potentially appropriate for some of the problem areas. These typically involve enhancing and managing the absorption field through timed dosing, the use of alternating finger systems, etc.

Other than conventional sewers, all of the technical approaches require a relatively high degree of on-lot management and maintenance. Such approaches require an ongoing and proactive institutional structure. One example would be the establishment of on-lot management districts by the municipality or municipal wastewater authority. Under this approach, the on-lot systems are repaired and replaced, and subsequent management and maintenance are done by the management district. This could include annual inspection and pumping of the septic tanks or, for alternative sewer systems, maintenance of the pumps and related equipment. Access would be gained through a right of way granted by the homeowner in return for use of the on-lot structures and their maintenance.

Typically, the on-lot equipment would be owned by the municipality or the authority. The local authority could use its financing power and organizational structure to procure, install and maintain the equipment. The PENNVEST enabling legislation allows for the financing of on-lot improvements. Thus, the municipality or municipal authority could sponsor improvements through PENNVEST. These mechanisms would also be available to Allegheny County. The County could potentially establish an on-lot management authority under the Pennsylvania Municipalities Authority Act and perform these services throughout the County.

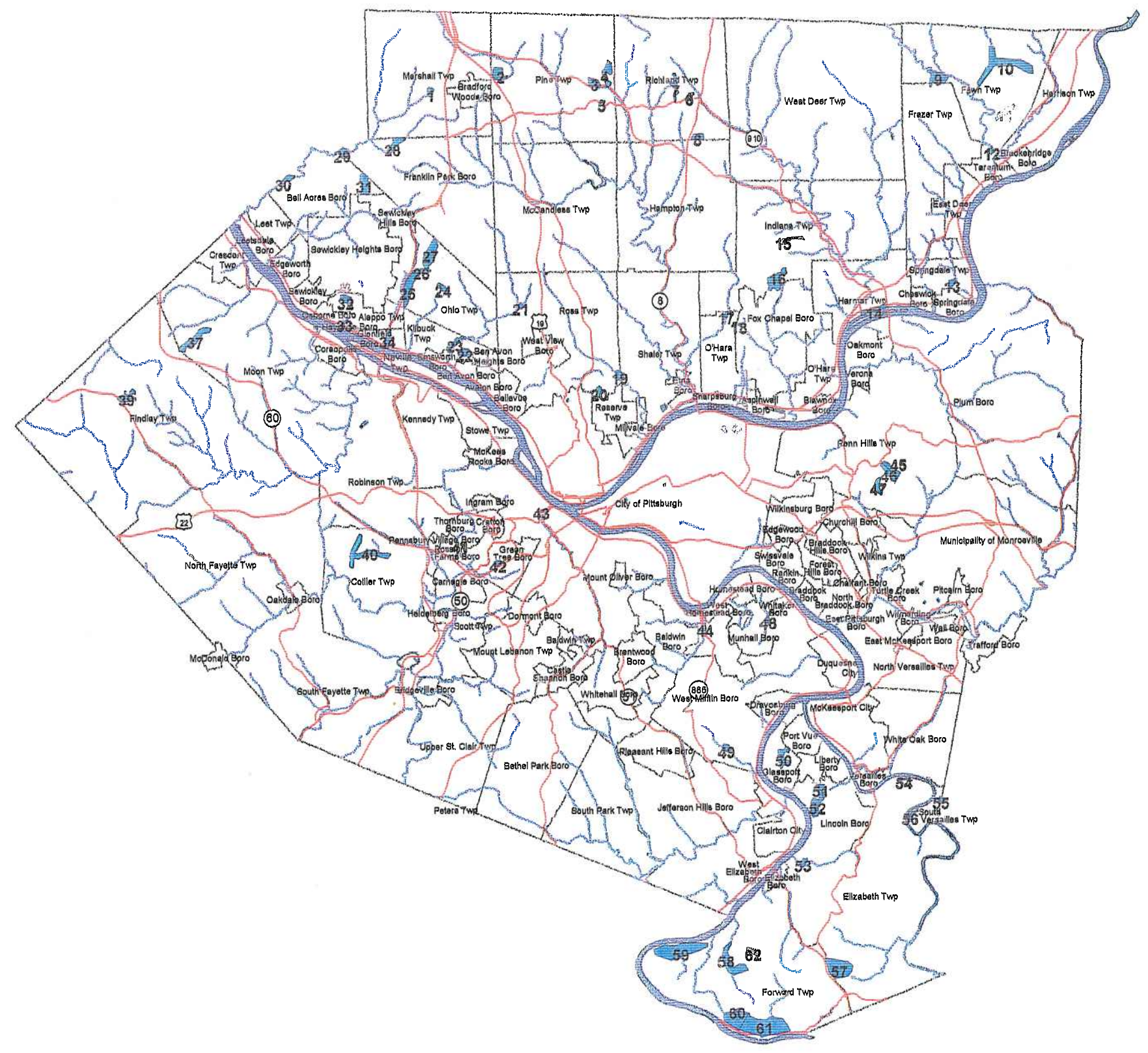
**Table 6-1
On-lot Problem Areas**

Map ID	Municipality or Authority	Identified Problem Area	Details	Map ID	Municipality or Authority	Identified Problem Area	Details
32	Aleppo Twp	1. McCoy Place and Glenn Mitchell/Weber Rd. area	Identified by the Authority as a problem area.	1	Marshall Twp	Mingo Rd./Valley Rd. area not sewerred. Several documented on-lot malfunctions.	Willowbrook Estates Subdivision is being proposed adjacent to this area. If this subdivision is built, they will install a sewage pumping station. Existing homes in the area could be served by the pump station
30	Bell Acres Boro	1. Turkeyfoot Rd. (bottom by Sewickley Cr.)	Economy Borough Act 537 Plan calls for these	37	Moon Twp	1. Moon Clinton /Becks Run/Mercury Rd. area	1. 12 homes not served; area problematic; planning done – waiting for funds
29		2. Hopkins Church Rd. area & Camp Meeting Rd.	Areas to be sewerred				
31		3. Hawthorn Rd. area – large plan – Hawthorne Acres					
40	Collier Twp	Portion of Baldwin Road, Cowan and S. Cowan Roads	\$2 million interceptor needed to serve this area according to consulting engineer's estimate.	17	O'Hara Twp	1. Saxonburg Blvd.	1. ~ 8 homes – all malfunction
41	Crafton Boro	Ewing Road Area	Malfunctioning on-lot septic systems	18		2. Dorseyville/Crawford Lane area	2. ~25 homes, some are malfunctioning
57	Elizabeth Twp	1. Arrowhead Lakes	1. 60% systems documented for malfunctions; sewer extension is planned	26	Ohio Township	Mt. Nebo Rd. - 7 homes	Many unsewerred areas in the ALCOSAN service area – engineers estimate that 1000 people are using on-lot systems. Deer Valley STP – ACHD attempting to regionalize this plant through purchase by OTSA.
54		2. Greenock area/Smithfield St.	2. Area along river in need of sewers.	24		Roosevelt Road	
10	Fawn Twp	1. Howe's Run & Donnelville	1. Priority area for sewers according to ACHD	27		Nicholson Rd.	
9		2. Dellenbaugh	2. Approximately 50-70 homes	25		Duff Rd.	
11		3. Metz Run		47	Municipality of Penn Hills	1. Duff Rd. (off Rodi)	1. 15 homes need sewers – could tie into private line serving townhomes, but owner won't permit this.
38	Findlay Twp	1. Moon – Enlow Rd. off Moon Clinton Rd.	1. 5 homes stranded by Parkway –split between Findlay and Moon	46		2. Jefferson Heights Rd., Hulton & Saltsburg Rd. , Indiana Rd.	2. Complaints received by ACHD; Part is sewerred.
39		2. Clinton area		45		3. Universal	3. Few malfunctions. 7-8 homes. Penn Hills said they were going to serve this street in '98.
59	Forward Twp	1. Bunola – health hazard	1. Malfunctions creating public health hazard	5	Pine Twp	1. Dennis Dr. area	1. Several malfunctioning on-lot systems. ACHD required the Township to evaluate the cost of installing sewers. Determined that costs were too high to install sewers.
61		2. Sunnyside/Gallatin – health hazard	2. No yards and no septic tanks – 50-60 DU's	2		2. Meadcrest	2. Meadcrest is not sewerred although surrounding streets have been sewerred
62		3. Erma & Kenneth	3. 8-10 complaints received by ACHD	3		3. N. Pine Circle area – some malfunctions in area with 10 – 15 homes	3. Township evaluated providing sewers in this area – costs are too high.
60		4. East Monongahela area – served by a wildcat sewer that discharges to Monongahela River	4. Need STP to serve this area. No room for on-lot repairs.	4		4. Old State Road	
58		5. Sunset View Dr., Pleasant View Dr., Longview Dr., Wall Rd., and Pangburn Hollow Rd.	5. All of these areas are in need of sewers due to on-lot malfunctions. Exact numbers not available.	44	Pittsburgh, City	1. Ganges Way	
28	Franklin Park Boro	Pegher & Wexford Bane Rd.	~ 9 homes; some malfunctions, not severe	43		2. West End (by Elliott)	
50	Glassport Boro	Naomi Dr./Washington Rd. sewer extension	Have funding in place to provide sewage service to 105 homes with malfunctioning septic systems.	7	Richland Twp	1. Meridian Rd area – complaints. Permit denials. 2 small flows plants were built due to problems selling homes. Richland plans on sewerred it in 2-3 years.	Many on-lot areas remaining. Richland will construct sewers when financially feasible to serve remaining on-lot areas.
34	Glenfield Boro	Glenfield is unsewerred. ACHD – PDW reports that health problems are not well-documented.	~25 homes with primary treatment. Permeability results in discharge most likely goes to Ohio R.	6		2. Chardick Dr. & Benedict Rd.	
42	Greentree Boro	Noblestown Rd. between Holiday Dr. & Mansfield	~10 homes	8		3. Ridgemont, Valleyview, and Vista View Drives – many complaints of malfunctioning septic systems received at ACHD	
14	Harmar Twp	Warner Camp & Denny Camp	50-75 homes & some businesses were originally part of a campground, and are now year-round residences. Homes have a septic tank, but no drain field. Sandy soils – probably discharge to river	21	Ross Twp	1. Nocklyn Dr. area	1. Several homes with malfunctioning on-lot systems.
33	Haysville Boro	50% dwellings are unsewerred	River Ave. - east part not sewerred	20		2. Mt. Troy Road	2. 5 homes with on-lot systems within 500 l.f. of a sewer line. Systems cannot be repaired.
16	Indiana Twp	1. Rawlin's Run Road, Highview Ave., Ridgeland Dr. & Strohm Way and portions of Fox Chapel Rd., Oakknoll Rd., and Pine Creek Rd. are not sewerred.	1. Could be picked up by ALCOSAN via Fox Chapel's Squaw Run interceptor, however, capacity is restricted by Fox Chapel.	55	S. Versailles Boro	Horseshoe Dr.	17 homes need sewers. Flows will be accepted by North Huntingdon Township Municipal Authority in Westmoreland County
15		2. Indianola Road	2. On-lot problem area identified by DCDBA; sparse homes; no complaints on record with ACHD	56		Lower Coulter	Design of sewer lines for Lower Coulter has been completed. Currently utilizing malfunctioning septic systems
23	Kilbuck Twp	1. Small pockets of undocumented problems. Newgate Road – isolated problems.	1. No sewer line extensions planned at this time to these areas.	19	Shaler Twp	Corner of Church and Greenhill	~ 6 homes
22		2. Plumber Ave. area not sewerred.	2. Area needs to be connected to Lowries Run interceptor.	13	Springdale Twp	Melzena St., Adelene St.	Approx. 50-60 homes with long time problems. Sewer available at Butler/Logan Rd. May require a P.S. Have had some complaints
51	Lincoln Boro	1. Taylor Street, McLean Road, Liberty Way	1. McKeesport WPCP agreed to accept sewage from this area of Lincoln Borough.	12	Tarentum Boro	Butternut Lane (along creek).	4 homes with malfunctioning septic systems discharge to Bull Creek. Documented complaints for one home.
52		2. Bell Bridge Road	Majority of Borough utilizes on-lot. Several alternatives identified to collect and treat sewage, however, no plans have been finalized to eliminate the on-lot problem areas.	49	West Mifflin Boro	1. Homestead Ave. & Avon Road	
53		3. Patterson Hill		48		2. New England Road & Smith's Lane	

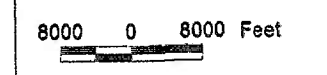
Figure 6 - 1 On - Lot Problem Areas

Allegheny County
Department of Economic
Development

Allegheny County, PA



- On - Lot Problem Area
 - Major Road
 - Municipal Boundary
 - Stream
- Numbered areas are described in Table 6-1



Source: Allegheny County Health Department

7.0 Projections

7.1 Population Projections by Treatment Agencies

Future wastewater facility needs have been projected based on the estimated current combined service populations for the 35 treatment agencies and the population growth rates that have been projected by the Southwestern Pennsylvania Regional Planning Commission in their Cycle V population projections of June 1994. The anticipated updated population projections (Cycle VI) remain unavailable within the time frame of completion of this report. The projected service populations are shown on Table 7-1.

Based upon estimated current service populations provided by the treatment agencies in their Chapter 94 reports, the estimated county-wide service population for all systems was approximately 1.34 million. The total service population of the 35 Allegheny County treatment agencies includes portions of ten municipalities in the surrounding counties. For this report, current service population estimates were obtained from the treatment authorities. Future service populations were estimated using the Cycle 5 growth rates. Growth rates for treatment agencies serving more than one municipality were based on population weighted averages of the service municipalities.

There is a tension between the Cycle V projected growth rates and interim estimates that the County's population has declined since 1990. This issue may be more meaningfully revisited after the forthcoming 2000 US Census. The estimated county-wide service population is projected to increase from the current 1.34 million to approximately 1.54 million, or an increase of 204,000 by the design year of 2015. If this growth were to occur, it would represent a 15% increase. While substantial over the planning period, the increase represents slightly less than a 1% annual growth rate.

Numerically, ALCOSAN is projected to have the greatest growth, increasing by approximately 86,000. This would represent a 10% increase in ALCOSAN's service population. The highest growth rates in major treatment plant (≥ 1 mgd) are projected for four suburban treatment agencies. The Robinson Township area is projected to have the highest percentage population growth, at 61% Township wide. The Montour Run Water Pollution Control Facility in Moon Township is projected to grow 49% from 55,000 to 83,000. The Allegheny Valley Joint Sewerage Authority in Harmer Township is projected to increase by approximately 46% from 28,000 to 41,000. The Pine Creek STP service area, serving McCandless Township is projected to grow by 42% from 28,000 to 40,000.

7.2 Projected Wastewater Hydraulic and Organic Loadings

Hydraulic and organic loadings for the design year 2015 have been projected based on the projected changes in population and current hydraulic and organic loadings. The estimates are shown by treatment agency on Table 7-2. Total current county-wide treatment capacity is 282 mgd. This will increase to 332 mgd with the completion of the initial 50 mgd expansion at ALCOSAN, which is currently under construction. The annual average daily flow in 1997 county-wide was 243 mgd. Based upon the projected growth rates for each treatment agency, the total average daily flow in the design year is projected to be approximately 284 mgd. The average daily flows from 12 treatment plants are projected to exceed their current average daily design capacities by more than 2%. Table 7-3 summarizes the projected hydraulic overloading for these treatment plants and the treatment agencies' anticipated responses.

The current organic loading capacity county-wide is approximately 380,000 pounds per day. Current (1997) average daily loadings are approximately 245,000 pounds per day. The projected average daily organic loading in 2015 is estimated to be 265,000 pounds per day. Based on the projected organic loadings, there

appears to be sufficient organic treatment capacities to meet future needs. This condition would change if loading characteristics were to change, e.g., if new industrial users were to arrive.

7.3 Population Growth Sensitivity Analysis

As noted above, the modest projected increases in the design year (2015) service population from current levels do not match the overall slight decline in County population that appears to have occurred since the 1990 census. If the projected population increases occur, 11 treatment plants may require hydraulic expansion (this excludes ALCOSAN, which is currently being expanded). To account for uncertainties as to the actual growth in municipal populations pending the 2000 census, a sensitivity analysis was conducted. The projected hydraulic loadings were calculated at population growth rates of 50%, 75%, 125% and 150% of the projected growth rates for the respective treatment plants. At 50% of the projected population growth rates, the projected hydraulic loading at three treatment plants would exceed their current limits by more than 2%. This number increases to 8 plants if 75% of the projected growth rates were to occur. 14 and 16 plants would potentially face expansion at 125% and 150% of the projected growth rates, respectively. The results of this analysis are detailed on Table 7-4.

7.4 Wet Weather Flow Implications

Due to the modest population growth projections, there will generally be sufficient hydraulic capacity to treat dry weather and average day wastewater generation in the design year on a county-wide basis. Areas of potential capacity shortfalls are limited to those suburban areas noted above. The hydraulic stress put on the existing treatment facilities by the projected growth are relatively minor compared with the real and potential capacity demands placed on the treatment plants during wet weather. As efforts to control CSO and eliminate SSO spread throughout the County, it is likely that some of the treatment plants will require hydraulic expansion to equalize and/or treat peak wet weather flows. Those plants subject to these stresses can be identified only through flow monitoring and analysis within individual systems.

**Table 7-1
Population Projections By Treatment Agency**

Treatment Service Provider	Treatment Plant	Estimated 1997 Service Population	Projected 2015 Service Population	Change	Percent Change	Comments
Aleppo Township Authority	I-79 North Properties STP	205	247	42	20%	
	Sewickley Heights Manor STP	375	449	74	20%	
Allegheny County Sanitary Authority	ALCOSAN STP	879,000	964,843	85,843	10%	
Allegheny Valley Joint Sewage Authority	Allegheny Valley Jt. Sewage Auth. STP	28,140	41,044	12,904	46%	
Bell Acres Municipal Authority	Grouse Ridge STP	62	65	3	4%	
	Sewickley Heights #1 STP	130	135	5	4%	
	Sewickley Heights #2 STP	81	84	3	4%	
	Sewickley Heights #3 STP	54	56	2	4%	
Bethel Park Municipal Authority	Piney Forks STP	27,856	33,433	5,577	20%	
Clairton Municipal Authority	Clairton STP	28,626	35,886	7,260	25%	
Coraopolis Borough Municipal Authority	Coraopolis STP	17,000	23,695	6,695	39%	
Crescent South Heights Municipal Authority	Crescent South Heights STP	4,304	5,536	1,232	29%	
Deer Creek Drainage Basin Authority	Hampshire Estates STP	53	92	39	74%	
Dravosburg Borough	Dravosburg STP	1,356	1,604	248	18%	
City of Duquesne	Duquesne STP	8,459	8,490	31	0%	
Elizabeth Borough Municipal Authority	Elizabeth Borough STP	5,129	5,580	451	9%	
Elizabeth Township Sanitary Authority	Buena Vista STP	6,600	7,245	645	10%	
Township of Findlay	Clinton Mobile Home Park STP	112	169	57	51%	
Borough of Glassport	Glassport Borough STP	5,200	5,208	8	0%	
Hampton Township Municipal Authority	Allison Park STP	19,323	26,172	6,849	35%	
Municipal Authority of the Borough of Leetsdale	Leetsdale Borough STP	3,372	3,490	118	3%	
Borough of Lincoln	Virginia Drive STP	69	73	4	6%	Decommissioning and regionalization with McKeesport is being considered.
McCandless Township Sanitary Authority	A & B STP	2,108	2,704	596	28%	
	Longvue #1 STP	6,297	8,078	1,781	28%	
	Longvue #2 STP	830	1,053	223	27%	
	Pine Creek STP	27,970	39,717	11,747	42%	
The Municipal Authority of the City of McKeesport	McKeesport WPCP	51,354	56,136	4,782	9%	
Moon Township Municipal Authority	Flaugherty Run STP	3,340	4,754	1,414	42%	
	Montour Run WPCP	55,348	82,678	27,330	49%	
Borough of Oakmont	Oakmont Borough STP	7,000	7,412	412	6%	
Ohio Township Sanitary Authority	Windy Knoll STP	412	513	101	24%	
Municipality of Penn Hills	Lincoln Road STP	541	575	34	6%	
	Plum Creek STP	24,150	27,859	3,709	15%	
Pennsbury Borough	Pennsbury Village STP	775	783	8	1%	
Pleasant Hills Authority	Pleasant Hills STP	23,435	28,519	5,084	22%	
Plum Borough Municipal Sewer Authority	Holiday Park STP	11,017	14,311	3,294	30%	
	Laurel Gardens STP	178	235	57	32%	
Township of Richland	Fairwinds STP	196	246	50	25%	To be decommissioned, with treatment provided at the Allegheny Valley JSA plant.
The Mun. Authority of the Twp. Of Robinson	Campbells Run STP	7,350	11,828	4,478	61%	
	Covi-Douglas STP	1,210	1,947	737	61%	
	Moon Run STP	2,130	3,428	1,298	61%	
Borough of Sewickley	Sewickley Borough STP	4,860	4,938	78	2%	
Sewickley Hills Borough	Sewickley Hills Borough STP	214	297	83	39%	
South Versailles Township	Coulter STP	525	578	53	10%	
Upper Allegheny Joint Sanitary Authority	Upper Allegheny Jt. San. Auth. STP	32,000	34,984	2,984	9%	
West Elizabeth Sanitary Authority	West Elizabeth STP	4,957	7,374	2,417	49%	
West Mifflin Sanitary Sewer Municipal Authority	Kenmore Manor	2,329	2,562	233	10%	To be decommissioned. Tankage will be used for flow equalization, sewage will be pumped to Thompson Run STP.
	New England STP	6,815	7,546	731	11%	
	Thompson Run STP	25,473	28,016	2,543	10%	Expansion and flow equalization under construction.
	TOTAL	1,338,320	1,542,667	204,347	15%	

**Table 7-2
Wastewater / Loading Generation Projections By Treatment Agency**

Treatment Service Provider	Treatment Plant	Current Permitted Hydraulic Capacity (mgd)	Projected 2015 Hydraulic Loading (mgd)	Percent of Current Plant Capacity Utilized	Current Permitted Organic Capacity (lbs/day)	Projected 2015 Organic Loading (lbs/day)	Percent of Current Plant Capacity Utilized
1 Aleppo Township Authority	I-79 North Properties STP	0.05	0.022	44.0	85	36.1	42.5
	Sewickley Heights Manor STP	0.084	0.054	64.3	205	129.3	63.1
2 Allegheny County Sanitary Authority	ALCOSAN STP	200	210.548	105.3	245,000	191,657.2	78.2
3 Allegheny Valley Joint Sewage Authority	Allegheny Valley Jt. Sewage Auth. STP	5.1	5.370	105.3	8,100	9,375.7	115.7
4 Bell Acres Municipal Authority	Grouse Ridge STP ^{1,2}	0.00665	0.004	60.2	14	8.3	60.0
	Sewickley Heights #1 STP ^{1,2}	0.016	0.008	50.0	33	16.7	49.9
	Sewickley Heights #2 STP ^{1,2}	0.028	0.008	28.6	58	16.7	28.6
	Sewickley Heights #3 STP ^{1,2}	0.008	0.004	50.0	17	8.3	49.9
5 Bethel Park Municipal Authority	Piney Forks STP	4.1	3.915	95.5	6,155	5,126.1	83.3
6 Clairton Municipal Authority	Clairton STP	6.0	4.914	81.9	10,000	4,066.1	40.7
7 Coraopolis Borough Municipal Authority	Coraopolis Water Pollution Control Facility	4.34	4.530	104.4	5,808	4,559.2	78.5
8 Crescent South Heights Municipal Authority	Crescent South Heights STP	0.396	0.462	116.7	565	595.5	105.4
9 Deer Creek Drainage Basin Authority	Hampshire Estates STP ¹	0.04	0.017	42.5	83	25.0	30.0
10 Dravosburg Borough	Dravosburg STP	0.48	0.483	100.6	2,780	107.5	3.9
11 City of Duquesne	Duquesne STP	2.0	0.718	35.9	2,780	642.7	23.1
12 Elizabeth Borough Municipal Authority	Elizabeth Borough STP	1.2	0.999	83.3	1,100	367.7	33.4
13 Elizabeth Township Sanitary Authority	Buena Vista STP	1.4	1.000	71.4	2,000	553.3	27.7
14 Township of Findlay	Clinton Mobile Home Park STP	0.01	0.005	50.0	16.7	5.6	33.5
15 Borough of Glassport	Glassport Borough STP ¹	1.2	0.901	75.1	2,502	547.8	21.9
16 Hampton Township Municipal Authority	Allison Park STP	3.4	2.966	87.2	4,938	3,974.0	80.5
17 Municipal Authority of the Borough of Leetsdale	Leetsdale Borough STP	0.775	0.712	91.9	875	651.5	74.5
18 Borough of Lincoln	Virginia Drive STP ^{1,2}	0.0088	0.004	45.5	18	8.3	45.6
19 McCandless Township Sanitary Authority	A & B STP	0.4	0.164	41.0	680	205.2	30.2
	Longvue #1 STP	1.2	1.266	105.5	2,040	1,254.1	61.5
	Longvue #2 STP	0.1	0.069	69.0	170	39.0	22.9
	Pine Creek STP	6.0	4.263	71.1	10,200	6,229.5	61.1
20 The Municipal Authority of the City of McKeesport	McKeesport WPCP	11.5	10.166	88.4	19,500	6,776.2	34.7
21 Moon Township Municipal Authority	Flaugherty Run STP	1.0	0.494	49.4	2085	725.9	34.8
	Montour Run WPCP	6.2	5.751	92.8	10,200	8,471.3	83.1
	Oakmont Borough STP	1.2	1.223	101.9	2,040	1,362.7	66.8
22 Borough of Oakmont	Oakmont Borough STP	1.2	1.223	101.9	2,040	1,362.7	66.8
23 Ohio Township Sanitary Authority	Windy Knoll STP	0.1	0.055	55.0	170	71.1	41.8
24 Municipality of Penn Hills	Lincoln Road STP	0.24	0.092	38.3	408	150.0	36.8
	Plum Creek STP	3.7	2.769	74.8	10,200	2,146.6	21.0
	Pennsbury Village STP ^{1,2}	0.17	0.064	37.6	354	133.4	37.7
25 Pennsbury Borough	Pennsbury Village STP ^{1,2}	0.17	0.064	37.6	354	133.4	37.7
26 Pleasant Hills Authority	Pleasant Hills STP	5.0	3.079	61.6	7,004	2,859.8	40.8
27 Plum Borough Municipal Authority	Holiday Park STP	1.52	1.611	106.0	3,060	1,856.3	60.7
	Laurel Gardens STP	0.014	0.009	64.3	23.3	22.4	96.1
	Fairwinds STP	0.052	0.019	36.5	89	33.9	38.1
28 Township of Richland	Fairwinds STP	0.052	0.019	36.5	89	33.9	38.1
29 The Mun. Authority of the Twp. Of Robinson	Campbells Run STP	1.0	1.183	118.3	1,700	1,956.9	115.1
	Covi-Douglas STP	0.1583	0.195	123.2	308	326.8	106.1
	Moon Run STP	0.25	0.343	137.2	425	627.3	147.6
30 Borough of Sewickley	Sewickley Borough STP	0.9	0.630	70.0	1,800	633.0	35.2
31 Sewickley Hills Borough	Sewickley Hills Borough STP ^{1,2}	0.018	0.021	119.0	38	43.8	115.2
32 South Versailles Township	South Versailles Township STP	0.03	0.010	33.3	6.3	0.7	11.1
33 Upper Allegheny Joint Sanitary Authority	Upper Allegheny Jt. San. Auth. STP	6.0	5.466	91.1	8,340	3,060.0	36.7
34 West Elizabeth Sanitary Authority	West Elizabeth STP	0.5	0.607	121.4	850	193.4	22.8
35 West Mifflin Sanitary Sewer Municipal Authority	Kenmore Manor	0.48	0.080	16.7	1,700	145.2	8.5
	New England STP	1.2	0.827	68.9	2,040	1,214.7	59.5
	Thompson Run STP	2.5	2.196	87.8	4,250	2,064.4	48.6

¹ Permitted Organic Capacity is based on a typical influent wastewater CBOD concentration of 250 mg/l.

² Projected 2015 Organic Loading is based on 2015 Projected Hydraulic Loading multiplied by a typical influent wastewater concentration of 250 mg/l and converted to lbs/day.

**Table 7-3
Projected Hydraulically Overloaded Treatment Plants**

Treatment Plant	Current Permitted Hydraulic Capacity (mgd)	Projected 2015 Hydraulic Loading (mgd)	Percent of Current Plant Capacity Utilized at Projected Population	Comments
1 ALCOSAN STP	200	214	107	Currently undergoing capacity expansion to 250 mgd.
2 AVJSA STP	5.1	5.4	105	A plant expansion is anticipated in the next 7-10 years.
3 Coraopolis WPCF	4.3	4.5	104	
4 Crescent South Heights STP	0.396	0.46	117	Currently identifying and correcting I/I problems (under consent order).
5 Holiday Park STP (Plum MUA)	1.52 summer 2.24 winter	1.6	106	A 2.1 million gallon detention facility was installed in 1997.
6 Longvue #1 STP (McCandless)	1.2	1.3	105	May divert large institutional customers' flow to a different service area to allow future growth.
7 Campbells Run STP (Robinson)	1.0	1.18	118	
8 Covi-Douglas STP (Robinson)	0.16	0.19	123	
9 Moon Run STP (Robinson)	0.25	0.34	137	Siltation in Moon Run from an upstream mine floods the plant during wet weather events.
10 Sewickley Hills Borough STP	0.018	0.021	119	Anticipate abandoning this STP.
11 West Elizabeth STP	0.5	0.6	121	Sewers will be separated as part of the Army Corp of Engineers Lock and Dam #2 Elimination project and negotiating a capacity expansion to 0.75 mgd.
12 West Mifflin SSMA - Thompson Run STP	2.5	2.68	105	

**Table 7-4
Wastewater Hydraulic Loading Projections Sensitivity Analysis**

Treatment Service Provider	Treatment Plant	Projected Growth	Growth @ % of Projections 100%				Growth @ % of Projections 50%				Growth @ % of Projections 75%				Growth @ % of Projections 125%				Growth @ % of Projections 150%				
			Effective Growth	Hydraulic Loading (mgd)	% Current Capacity Utilized	Current Permitted Capacity Exceeded	Effective Growth	Hydraulic Loading	% Current Capacity Utilized	Current Permitted Capacity Exceeded	Effective Growth	Hydraulic Loading	% Current Capacity Utilized	Current Permitted Capacity Exceeded	Effective Growth	Hydraulic Loading	% Current Capacity Utilized	Current Permitted Capacity Exceeded	Effective Growth	Hydraulic Loading	% Current Capacity Utilized	Current Permitted Capacity Exceeded	
1 Aleppo Township Authority	I-79 North Properties STP	20%	20%	0.020	39%		10%	0.018	36%		15%	0.019	38%		25%	0.020	41%		31%	0.021	43%		
	Sewickley Heights Manor STP	20%	20%	0.054	64%		10%	0.049	59%		15%	0.051	61%		25%	0.056	66%		30%	0.058	69%		
2 Allegheny County Sanitary Authority	ALCOSAN STP	13%	13%	213.692	107%		6%	201.691	101%		9%	207.692	104%		16%	219.692	110%		19%	225.693	113%		
	Allegheny Valley Jt. Sewage Auth. STP	46%	46%	5.370	105%		23%	4.526	89%		34%	4.948	97%		57%	5.792	114%		69%	6.215	122%		
4 Bell Acres Municipal Authority	Grouse Ridge STP ^{1,2}	4%	4%	0.004	64%		2%	0.004	63%		3%	0.004	63%		5%	0.004	65%		6%	0.004	65%		
	Sewickley Heights #1 STP ^{1,2}	4%	4%	0.008	53%		2%	0.008	52%		3%	0.008	53%		5%	0.009	54%		6%	0.009	54%		
	Sewickley Heights #2 STP ^{1,2}	4%	4%	0.008	28%		2%	0.008	28%		3%	0.008	28%		5%	0.008	28%		6%	0.008	29%		
	Sewickley Heights #3 STP ^{1,2}	4%	4%	0.004	55%		2%	0.004	54%		3%	0.004	55%		5%	0.004	56%		6%	0.005	56%		
5 Bethel Park Municipal Authority	Piney Forks STP	20%	20%	3.920	96%		10%	3.593	88%		15%	3.756	92%		25%	4.083	100%		30%	4.247	104%		
6 Clairton Municipal Authority	Clairton STP	25%	25%	4.913	82%		13%	4.416	74%		19%	4.665	78%		32%	5.162	86%		38%	5.410	90%		
7 Coraopolis Borough Municipal Authority	Coraopolis Water Pollution Control Facility	39%	39%	4.530	104%		20%	3.890	90%		30%	4.210	97%		49%	4.850	112%		59%	5.170	119%		
8 Crescent South Heights Municipal Authority	Crescent South Heights STP	29%	29%	0.462	117%		14%	0.411	104%		21%	0.436	110%		36%	0.488	123%		43%	0.513	130%		
9 Deer Creek Drainage Basin Authority	Hampshire Estates STP ¹	74%	74%	0.017	42%		37%	0.013	33%		55%	0.015	37%		92%	0.018	46%		110%	0.020	51%		
10 Dravosburg Borough	Dravosburg STP	18%	18%	0.482	100%		9%	0.445	93%		14%	0.464	97%		23%	0.501	104%		27%	0.520	108%		
11 City of Duquesne	Duquesne STP	0%	0%	0.718	36%		0%	0.716	36%		0%	0.717	36%		0%	0.718	36%		1%	0.719	36%		
12 Elizabeth Borough Municipal Authority	Elizabeth Borough STP	9%	9%	0.999	83%		4%	0.958	80%		7%	0.979	82%		11%	1.019	85%		13%	1.039	87%		
13 Elizabeth Township Sanitary Authority	Buena Vista STP	10%	10%	1.019	73%		5%	0.973	70%		7%	0.996	71%		12%	1.042	74%		15%	1.064	76%		
14 Township of Findlay	Clinton Mobile Home Park STP	51%	51%	0.007	68%		25%	0.006	57%		38%	0.006	62%		64%	0.007	74%		76%	0.008	80%		
15 Borough of Glassport	Glassport Borough STP ¹	0%	0%	0.897	75%		0%	0.896	75%		0%	0.897	75%		0%	0.897	75%		0%	0.898	75%		
16 Hampton Township Municipal Authority	Allison Park STP	35%	35%	2.963	87%		18%	2.575	76%		27%	2.769	81%		44%	3.157	93%		53%	3.351	99%		
17 Municipal Authority of the Borough of Leetsdale	Leetsdale Borough STP	3%	3%	0.712	92%		2%	0.700	90%		3%	0.706	91%		4%	0.718	93%		5%	0.724	93%		
18 Borough of Lincoln	Virginia Drive STP ^{1,2}	6%	6%	0.004	43%		3%	0.004	42%		5%	0.004	42%		8%	0.004	43%		9%	0.004	44%		
	A & B STP	28%	28%	0.164	41%		14%	0.146	37%		21%	0.155	39%		35%	0.173	43%		42%	0.182	46%		
	Longvue #1 STP	28%	28%	1.266	106%		14%	1.127	94%		21%	1.196	100%		35%	1.336	111%		42%	1.406	117%		
	Longvue #2 STP	27%	27%	0.069	69%		13%	0.062	62%		20%	0.065	65%		34%	0.073	73%		40%	0.076	76%		
20 The Municipal Authority of the City of McKeesport	Pine Creek STP	42%	42%	4.273	71%		21%	3.641	61%		32%	3.957	66%		53%	4.589	76%		63%	4.905	82%		
	McKeesport WPCP	9%	9%	10.139	88%		5%	9.707	84%		7%	9.923	86%		12%	10.355	90%		14%	10.570	92%		
	Flaugherty Run STP	42%	42%	0.493	49%		21%	0.420	42%		32%	0.457	46%		53%	0.530	53%		64%	0.567	57%		
	Montour Run WPCP	49%	49%	5.749	93%		25%	4.798	77%		37%	5.274	85%		62%	6.224	100%		74%	6.699	108%		
22 Borough of Oakmont	Oakmont Borough STP	6%	6%	1.223	102%		3%	1.189	99%		4%	1.206	100%		7%	1.240	103%		9%	1.257	105%		
	Windy Knoll STP	24%	24%	0.055	55%		12%	0.049	49%		18%	0.052	52%		31%	0.058	58%		37%	0.060	60%		
23 Ohio Township Sanitary Authority	Lincoln Road STP	6%	6%	0.092	38%		3%	0.089	37%		5%	0.091	38%		8%	0.093	39%		9%	0.095	39%		
24 Municipality of Penn Hills	Plum Creek STP	15%	15%	2.170	59%		8%	2.026	55%		12%	2.098	57%		19%	2.242	61%		23%	2.315	63%		
	Pennsbury Village STP ^{1,2}	1%	1%	0.064	38%		0%	0.064	37%		1%	0.064	38%		1%	0.064	38%		1%	0.064	38%		
26 Pleasant Hills Authority	Pleasant Hills STP	22%	22%	3.089	62%		11%	2.814	56%		16%	2.952	59%		27%	3.227	65%		33%	3.365	67%		
27 Plum Borough Municipal Authority	Holiday Park STP	30%	30%	1.611	106%		15%	1.426	94%		22%	1.518	100%		37%	1.704	112%		45%	1.796	118%		
	Laurel Gardens STP	32%	32%	0.009	63%		16%	0.008	55%		24%	0.008	59%		40%	0.009	67%		48%	0.010	71%		
28 Township of Richland	Fairwinds STP	25%	25%	0.036	70%		13%	0.033	63%		19%	0.035	66%		32%	0.038	74%		38%	0.040	77%		
29 The Mun. Authority of the Twp. Of Robinson	Campbells Run STP	61%	61%	1.183	118%		30%	0.959	96%		46%	1.071	107%		76%	1.295	129%		91%	1.407	141%		
	Covi-Douglas STP	61%	61%	0.194	123%		30%	0.158	100%		46%	0.176	111%		76%	0.213	134%		91%	0.231	146%		
	Moon Run STP	61%	61%	0.342	137%		30%	0.277	111%		46%	0.310	124%		76%	0.375	150%		91%	0.407	163%		
30 Borough of Sewickley	Sewickley Borough STP	2%	2%	0.626	70%		1%	0.621	69%		1%	0.623	69%		2%	0.628	70%		2%	0.631	70%		
31 Sewickley Hills Borough	Sewickley Hills Borough STP ^{1,2}	39%	39%	0.021	119%		19%	0.018	102%		29%	0.020	111%		48%	0.023	127%		58%	0.024	136%		
32 South Versailles Township	South Versailles Township STP	10%	10%	0.010	32%		5%	0.009	31%		8%	0.009	32%		13%	0.010	33%		15%	0.010	34%		
33 Upper Allegheny Joint Sanitary Authority	Upper Allegheny Jt. San. Auth. STP	9%	9%	5.448	91%		5%	5.216	87%		7%	5.332	89%		12%	5.564	93%		14%	5.680	95%		
34 West Elizabeth Sanitary Authority	West Elizabeth STP	49%	49%	0.607	121%		24%	0.507	101%		37%	0.557	111%		61%	0.657	131%		73%	0.706	141%		
35 West Mifflin Sanitary Sewer Municipal Authority	Kenmore Manor	10%	10%	0.081	17%		5%	0.077	16%		7%	0.079	16%		12%	0.083	17%		15%	0.084	18%		
	New England STP	11%	11%	0.827	69%		5%	0.787	66%		8%	0.807	67%		13%	0.847	71%		16%	0.867	72%		
	Thompson Run STP	10%	10%	2.628	105%		5%	2.509	100%		7%	2.569	103%		12%	2.688	108%		15%	2.748	110%		
			15%	15%	284	101%		8%	264.795	94%		11%	274.186	97%		19%	292.968	104%		23%	302.359	107%	

8.0 Findings of Adequacies and Needs

With isolated exceptions, the wastewater infrastructure within Allegheny County appears to be adequate to meet the current average day needs of the current service population. The infrastructure is less adequate during wet weather, which taxes the hydraulic capacity of the collection sewers and the treatment capacities of the treatment plants to the point that overflows can occur. The wet weather capacity issues have the potential to limit growth and economic development.

The wet weather flow management challenges in Allegheny County have revealed that the legal, institutional and financial frameworks in which the wastewater systems operate need to be updated to reflect the current regulatory emphasis on combined sewer overflow control and the elimination of sanitary sewer overflows. The limitations to the current institutional and financial infrastructure are more profound than the limitations of the current physical infrastructure.

8.1 Conveyance Systems

8.1.1 Dry Weather Performance

With certain exceptions described elsewhere in this report, the existing conveyance systems are generally adequate to meet current and projected dry weather hydraulic capacity needs in the current service areas.

8.1.2 Wet Weather Performance

The cost effective and environmentally responsible management of sewage flows during wet weather has become the dominant wastewater management issue in Allegheny County due to the juxtaposition of the County's geography, demographics and evolving national regulatory priorities. During wet weather the County's sewerage is overwhelmed by excessive inflow and infiltration of storm and ground water. Excessive inflow and infiltration (I/I) enter the sewers through broken and misaligned collector sewers, leaking manholes, deteriorated building sewers (house laterals), downspouts and foundation drains, street catch basins, natural streams culverted into sewers, and a variety of other intentional and unintentional sources.

Flow monitoring has shown typical wet weather flow rates in sanitary sewered areas of around 1,000 GPCD, with some areas ranging to more than 2,000 GPCD. In contrast, the PaDEP design standard for new sanitary sewer systems calls for a peak capacity of 400 gallons per capita per day (GPCD).

As evidenced by the number of Corrective Action Plans and the potential for USEPA enforcement actions concerning sanitary sewer overflows, there are widespread inadequacies in the County's sanitary sewer systems to handle the hydraulic loading experienced during wet weather. The specific locations and size of the problems are not well understood or documented as of yet, despite the limited flow monitoring activities that have been ongoing in the County. There is an understandable reticence for municipalities to come forward and identify wet weather hydraulic problems since this information could potentially be used by USEPA or PaDEP against them in enforcement actions.

Under current Federal and Commonwealth law, sanitary sewer overflows (SSOs) are considered illegal and to be eliminated expeditiously. USEPA and, to a lesser extent, PaDEP and the Allegheny County Health Department have threatened enforcement actions potentially leading to fines and enforceable compliance schedules. While EPA's initial focus has been on municipalities within the ALCOSAN service area, it is anticipated that the scope of their activities will eventually be expanded to all areas of the County.

Sanitary sewer systems often serve as defacto storm sewer systems for individual properties. Wholesale removals of excessive wet weather flows from private property could affect the existing municipal stormwater drainage system. Care must be taken not to exacerbate local stormwater management problems or to generate homeowner hostilities from drainage problems. Evaluating the adequacy of the stormwater system to convey inflow and infiltration removed from sanitary sewers is an important component of an overall wet weather flow management strategy.

8.1.3 Sewer Maintenance

The municipalities and municipal authorities generally have the institutional and physical capabilities necessary to maintain the basic operation of their collection systems. Equipment such as vacuum trucks or closed circuit television equipment is generally available through a council of government or commercially. Sewer maintenance tends to be reactive more than proactive, however. As municipalities and municipal authorities increase their efforts at inflow and infiltration removal, the County is witnessing more comprehensive approaches to proactive sewer maintenance and rehabilitation. This is evidenced by the 19 applications for the first round of grant funding through the Three Rivers Wet Weather Demonstration Program for sewer rehabilitation demonstration projects.

Conveyance System Needs

- There is a need for a long term commitment to cost effective municipal collection system rehabilitation to eliminate sanitary sewer overflows and control combined sewer overflows. This rehabilitation is required to provide for compliance with the Pennsylvania Clean Streams Law and the Clean Water Act and to provide the infrastructure for future growth and economic development.
- There is a need for the establishment of a coordinated and integrated data base of flow monitoring data and results. The intent of this data base would be to develop a comprehensive and updatable understanding of the location and scope of wet weather capacity issues.
- There is also a need for a set of flow monitoring, data analysis and quality assurance protocols that would allow for the efficient use of municipal resources and the establishment of an integrated data base.
- There is a need for an integrated, county-wide approach to wet weather flow management. This would include watershed-based inter-municipal cooperative efforts that avoid inter-municipal blame shifting and that focus on water quality impacts and improvements. Ideally, this could lead to a unified, proactive and water-quality based County strategy for dealing with PaDEP and USEPA.
- There is a need for municipal awareness of, and proactivity toward the anticipated Phase II storm water regulations and the evolving USEPA sanitary sewer system regulations. A coordinated County-wide response may be appropriate to reduce the regulatory burden on the municipalities. Proactivity by the County or coordinated groups of municipalities (e.g., within watersheds) could potentially set the stage for an "affirmative defense" against USEPA or PaDEP compliance actions, thereby preserving local control over programs and deadlines.

8.1.4 National Comparisons

Allegheny County is by no means alone in facing significant wet weather flow management issues. Runoff from urban and rural sources now accounts for the majority of water quality impairment reported to USEPA by the states.

Combined Sewer Systems

The wastewater management issues facing Allegheny County are not unique. Nationwide, combined sewer systems serve about 950 communities with a total population exceeding 40 million. Each municipality faces the same requirements to implement interim best management practices (the Nine Minimum Controls) and to develop and implement a Long Term Control Plan as was outlined in Section 5 of this report. As of November 1998, eleven percent of the municipalities have progressed to the completion of the Long Term Control Plan (excluding implementation). Another 21% had a plan under development. The remaining 68% had not started the long term planning process or were waiting on state or federal action to update their NPDES permit to incorporate the CSO requirements. Nationally, the estimated costs for implementing the federal CSO policy over the next twenty years range from \$41 billion to more than \$100 billion.¹

Sanitary Sewer Overflows

USEPA is placing significant emphasis on the control and/or elimination of sanitary sewer overflows throughout the country. Sanitary sewer overflows can occur in almost every sewer system. Occasional overflows may occur due to a variety of circumstances, many of which are beyond municipal control such as pipe blockages or unforeseen structural failures. Chronic overflows indicate more serious problems with sewer systems, including excess inflow and infiltration during storm events, insufficient system capacity, unidentified pipe breaks and system deterioration. In March 1999, the USEPA estimated the cost of correcting sanitary sewer overflows nationally at approximately \$80 billion.² Municipal and wastewater professional organizations such as the Association of Metropolitan Sewerage Agencies and the Water Environment Federation have been working with USEPA toward a workable SSO policy that considers water quality impacts and compliance costs.

8.3 Treatment Plants

There are 49 POTWs in Allegheny County, ranging in capacity from 250 million gallons per day (mgd) at ALCOSAN down to the 6,600 gallons per day capacity plant of Grouse Ridge located in Bell Acres Borough. Twenty-three of the 49 treatment plants have capacities of one mgd or more, thereby being considered "major" plants under PaDEP regulations.

Current total county-wide treatment capacity is 282 mgd, increasing by 50 mgd to 332 mgd upon completion of the Phase 1 expansion of ALCOSAN's treatment plant in 2001. The annual average daily flow in 1997 county-wide was 243 mgd. Based upon the projected growth rates for each treatment agency, the total average daily flow in the design year is projected to be approximately 284 mgd. County-wide, current average day capacities are greater than the projected average day flow in 2015.

The estimated county-wide service population is projected to increase to approximately 1.54 million, or an increase of 204,000 by the design year of 2015. If this growth were to occur, it would represent a 15% increase. While substantial over the planning period, the increase represents less than a 1% annual growth rate. Due to the modest population growth projections, there will generally be sufficient hydraulic capacity to treat dry weather and average day wastewater generation in the design year on a county-wide basis. The hydraulic stress put on the existing treatment facilities by the projected growth are relatively minor compared with the real and potential capacity demands placed on the treatment plants during wet weather.

¹ Source: Water Environment Federation Statement before the Senate Committee on Environment and Public Works Clean Water Act Reauthorization issues (December, 1995).

² Source: Association of Metropolitan Sewerage Agencies.

The current organic loading capacity county-wide is approximately 380,000 pounds per day. Current (1997) average daily loadings are approximately 245,000 pounds per day. The projected average daily organic loading in 2015 is estimated to be 265,000 pounds per day. Based on the projected organic loadings, there appears to be sufficient organic treatment capacities to meet future needs.

An analysis of the 1997 hydraulic data for the 49 treatment plants shows potential hydraulic capacity problems at 21. These are listed on Table 8-1 below. Average daily flows at 17 of the plants exceeded the permitted average monthly hydraulic capacity at least once. The average daily flow at 16 of these plants was greater than 75% of their permitted average daily flows. This statistic of itself does not indicate current hydraulic problems, but provides an early warning indicator that future growth, coupled with wet weather demands on plant capacity could result in future problems. The year 2015 projected average daily flows at twelve plants exceed their current hydraulic capacities. 6 of the treatment plants had maximum consecutive three month average flows in excess of permitted capacity, triggering the PaDEP definition of a hydraulically overloaded plant. Of these, ALCOSAN is currently undergoing expansion to 250 mgd capacity, which will meet current and projected needs. The West Mifflin Sanitary Sewer Municipal Authority is currently constructing a 1.5 mgd treatment capacity expansion and flow equalization facilities at the Thompson Run STP. West Mifflin's Kenmore STP will be decommissioned and its flow will be treated at the Thompson Run STP also. The Fairwinds STP in Richland Township is being eliminated. Its flows will be transported via the Deer Creek Drainage Basin Authority to treatment by the Allegheny Valley Joint Sewer Authority. Efforts have been underway in Lincoln Borough to eliminate the Virginia Drive STP through regionalization into McKeesport.

There appear to be limited opportunities for the further consolidation of wastewater treatment plant service areas. Many of the small "package" treatment plants that were identified in the 1970 Act 537 Plan (Green Engineering report) have been eliminated. While historical opportunities for regionalization and consolidation may have been missed, cost-effective opportunities for consolidation of treatment plants within watersheds are not readily apparent. Many of the treatment plants have been extended beyond their theoretical useful lives through maintenance and rehabilitation. This assessment could change if the existing treatment plants began to experience operational problems or the need for major capital improvements in the future. There are significant opportunities however for efficiencies and water quality improvements if the intermunicipal institutional and financial arrangements were to be refocused at a watershed level.

Treatment Plant Needs

- There is a need to more closely examine the wet weather hydraulic loadings of the 21 treatment plants that face potential hydraulic capacity problems to ascertain the need for plant expansion, flow equalization to attenuate peak hydraulic loading or source reduction. A combination of these strategies is likely most cost effective.
- There is a potential for some of these plants to have their hydraulic permit limits re-rated upwards based on compliance with organic and solids permit parameters at higher than rated flow rates. This should be explored.

**Table 8-1
Treatment Plants With Potential Hydraulic Capacity Limitations**

	Treatment Agency	Treatment Plant	Average Flows > 75% of Permitted Capacity	Max. Consecutive Three Month Average > Permitted Capacity	Projected Flows Exceed Current Permit Capacity	Months that Average Flows Exceeded Permit Capacity
1	ALCOSAN ³	ALCOSAN STP	✓	✓	✓	5
2	Allegheny Valley Joint S. Auth..	AVJSA Plant			✓	
3	Bethel Park Municipal Authority	Piney Fork STP	✓			3
4	Coraopolis Municipal San. Auth..	Coraopolis WPCF			✓	1
5	Crescent South Heights M. Auth..	Crescent S.H. STP	✓	✓	✓	5
6	Dravosburg Borough	Dravosburg STP	✓			1
7	Elizabeth Borough M. Auth..	Elizabeth STP	✓			2
8	Leetsdale Municipal Authority	Leetsdale STP	✓	✓		3
9	Lincoln Borough	Virginia Drive STP				3
10	McCandless Township San. Auth..	Longvue No. 1	✓		✓	2
11	City of McKeesport M. Auth..	McKeesport STP	✓			
12	Borough of Oakmont	Oakmont STP	✓	✓		4
13	Plum Borough Sewer Authority	Holiday Park STP	✓		✓	2
14	Township of Richland	Fairwinds STP		✓		1
15	Township of Robinson M. Auth.	Campbells Run STP			✓	
16		Covi-Douglas STP	✓		✓	2
17		Moon Run STP	✓		✓	2
18	Sewickley Hills Borough	Sewickly Hills STP	✓		✓	1
19	Upper Allegheny Joint San. Auth..	UAJSA STP	✓			2
20	West Elizabeth San. Auth..	West Elizabeth STP	✓		✓	
21	West Mifflin San. Auth..	Thompson Run STP	✓	✓	✓	4

³ These limitations are being eliminated by the current plant expansion.

8.4 On-Lot Treatment and Private Treatment Plants

There are approximately 60 on-lot problem areas remaining in Allegheny County as identified by the Allegheny County Health Department, the Allegheny County Department of Economic Development and by the municipalities. These are located in 31 municipalities ranging in size from Haysville to Pittsburgh. These do not include numerous isolated individual failing on-lot systems.

There are 36 remaining private treatment plants within Allegheny County. There is a potential that some of these could be cost-effectively eliminated through consolidation into the existing treatment plants. The merits and feasibility of this should be further evaluated.

On-Lot and Private Treatment Plant Needs

- The cost-effectiveness of extending conventional or non-conventional collection sewers to the on-lot problem areas should be estimated.
- Technological alternatives to the extension of collection sewers, e.g. local community treatment, should be examined.
- The viability of alternative institutional approaches to on-lot treatment e.g., a municipal on-lot management authority, should be evaluated.
- County and municipal data on illicit connections of building sewers to storm drain systems should be added to the County data base.

8.5 Adequacy of Current Legal / Financial / Institutional Structures

The legal, financial and institutional structures for wastewater management that are currently available to the municipalities have limited capacities to address the developing challenges of wet weather flow management. Current municipal wastewater statutes and programs do not demand or actively encourage inter-municipal cooperation within watersheds. Unless incorporated into enforceable orders by PaDEP, intermunicipal cooperative efforts depend upon the consensus and voluntary cooperation of all municipalities involved.

8.5.1 Intermunicipal Agreements

In general, intermunicipal service agreements were established when the focus on wet weather flow management was on the protection of the treatment facilities and personal property through the strategic use of overflows and hydraulic reliefs. The agreements do not reflect the current regulatory climate which mandates the management of combined sewer overflows and elimination of sanitary sewer overflows.

Current intermunicipal service agreements do not provide an adequate basis for defining and regulating wet weather flows between municipalities and authorities. In addition, most intermunicipal points of connection do not have permanent flow meters, resulting in a lack of a basis to allocate costs related to wet weather flow management. Finally, current intermunicipal service agreements typically do not have a direct mechanism for revisions necessitated by changing physical or regulatory conditions.

8.5.2 Sewer Use Ordinances

The municipalities' sewer use ordinances are, in general, ill-suited for the current emphasis on wet weather flow management. There is also a need for sewer use ordinance enforcement to be coordinated with local storm water management efforts to avoid introducing new storm drainage problems as a result of enforcing the clear water prohibitions in sanitary sewers.

Current capital financing mechanisms such as municipal revenue bonds funding sources are generally adequate for the largest municipalities and municipal authorities within Allegheny County. For example, ALCOSAN has repeatedly gained access to capital at very favorable rates due to its excellent credit rating and its use of bond insurance. Smaller municipalities and municipal authorities have less favorable access to capital markets. The availability of financing through PENNVEST is limited. PENNVEST is limited both by its available funding and by the relatively low funding priority that it has given to sewer rehabilitation in the past. There are no major state or federal construction grant programs analogous to the USEPA and state Section 201 Construction Grants Program of the 1970s and 1980s.

Nationally, research indicates that approximately 50% of the inflow and infiltration entering a municipal sanitary sewer system originates in building laterals located on private property. Current state law does not adequately address municipal rights and obligations to address private source inflow and infiltration. The ability to use municipal funds to repair building lateral sewers is currently ill-defined and requires clarifying legislation.

Resolving on-lot sewer problems as well as the elimination of small problematic treatment plants through regionalization into adjacent wastewater systems is sometimes stymied by the connection fees sought by the municipality with system.

Legal, Institutional, Financial Needs

- Allegheny County needs a mechanism to foster the updating and revision of intermunicipal service agreements for wastewater services. In general, the current intermunicipal service agreements were drafted when the focus on wet weather flow management was on the protection of the treatment facilities and personal property through the strategic use of overflows and hydraulic reliefs. The agreements do not reflect the current regulatory climate which mandates the management of combined sewer overflows and elimination of sanitary sewer overflows.
- Similar to the intermunicipal agreement issues, a more aggressive approach to the enforcement of clear water prohibitions is required. The current widespread practice of inspections upon sale of the property can result in slow and haphazard enforcement.
- The regulation of sanitary sewers through the sewer use ordinances and intermunicipal service agreements should be coordinated with stormwater management plans and ordinances.
- There is an apparent need for new and innovative sources of capital for municipal wastewater systems. Small municipalities and municipal authorities have difficulty in accessing the municipal bond markets at favorable interest rates. Conventional funding sources such as general obligation or revenue bonds have high issuance costs.
- There is a need for a mechanism for financing repairs on private property is required so that homeowners can be realistically expected to address a major source of inflow and infiltration. The Pennsylvania legislature is currently considering legislation that would expand PENNVEST eligibility to allow municipalities to finance private lateral repairs. Beyond PENNVEST funding, municipalities need a clear legal authority to address private sources of inflow and infiltration.

- There is a need for a legal and financial mechanism to facilitate affordable access by unsewered problem areas to neighboring wastewater systems while recognizing the host communities' equity in their system.

9.0 Recommendations

Aging infrastructures coupled with changing regulatory mandates present challenges to disparate municipal collection systems and treatment agencies established under different rules and expectations. This section contains recommendations for institutional, financial and technical changes to current wastewater management systems within Allegheny County.

9.1 Institutional Issues

9.1.1 Regulation of Sewer Use

All sewered areas in Allegheny County are governed by some form of a sewer use ordinance (SUO) through the municipality or municipal authority. Overall, the ordinances are adequate at protecting the collection systems and the treatment plants from harmful discharges. Most of the ordinances covering sanitary sewered areas prohibit clear water discharges from downspouts, sump pumps and similar sources.

Historically, the function of sewer use ordinances has been to protect the public health and public investment in the sewer systems due to hazardous discharges such as explosives or materials that would obstruct or damage the system such as grease or viscous materials. With the evolving regulatory emphasis on wet weather flow management, the effectiveness of ordinances at controlling clear water discharges is increasingly important. The monitoring and enforcement provisions of most sewer use ordinances do not provide the full set of tools required by the municipalities to control clear water discharges. Typical issues in wet weather sewer use regulation include:

- Inspection required for enforcement of the ordinance occurs only when the property is being sold. In established neighborhoods, the property turnover rate can be low, hence the period for enforcement can be generational.
- Continued owner compliance is uncertain. Property owners may reconnect banned sources after the municipality inspects the property and finds it to be in compliance.
- Except for new connections, the ordinances typically do not address the condition of the building service lateral sewer.
- The enforcement of the ordinance is not tied to the regulation of local storm water management practices. Thus, the disconnection of clear water connections from the sanitary sewer system may create or exacerbate local stormwater problems such as street or basement flooding.

The following steps are recommended to enhance the municipalities' ability to regulate their sewer systems:

Model Ordinances

We recommend that a model contemporary sewer use ordinance be made available to the municipalities of Allegheny County. A contemporary ordinance would contain provisions for ongoing non-intrusive inspection (e.g., through inspection ports), address homeowner responsibilities for deteriorating laterals, and have an implementable penalty mechanism for excessive clear water discharges. A sample model sewer use ordinance is provided as appendix B of this report.

Strengthened County Health Code

We recommend that Article 14 of the Allegheny County Health Department Rules and Regulations (Sewage Management) be revised to include minimum provisions for municipal sewer use ordinances.

Coordination with Private Lateral Rehabilitation Programs

The expense to property owners of removing clear water connections and/or the rehabilitation of building laterals can be a major impediment to enforcement. It is recommended that low cost and low financial impact mechanisms for property owner compliance (e.g., low cost loans) be made available with sewer use ordinance enforcement.

9.1.2 Intermunicipal Service Agreements

There are 160 intermunicipal service agreements currently in effect. As with sewer use ordinances, the intermunicipal agreements typically are unsuited to address the current emphasis on wet weather flow management. The allocation of responsibilities and costs for wet weather flow management between the municipalities and/or the municipalities and the treatment authorities are prime areas of concern.

Typical problems with intermunicipal agreements include:

- Agreements do not measure and allocate costs resulting from total flows (billed water consumption plus wet weather inflow and infiltration),
- They do not specify maximum discharge volumes, rates and durations,
- The definition of wastewater and sewage is ambiguous and does not clearly define the accepting (downstream) municipality's responsibility for dealing with elevated wet weather flows,
- Permanent flow monitoring is frequently not required,
- There are inadequate or obsolete cost allocation mechanisms,
- The joint responsibility for regulatory compliance (e.g., responsibility for overflows in the downstream municipality) is not addressed,
- There is no provision for modifications, and
- There is no provision for contract enforcement or dispute resolution short of litigation.

Long Term Solutions

It is recognized that changing intermunicipal agreements to address wet weather issues adequately will be a slow and often contentious process. Barring area-wide regulatory or judicial mandates forcing the revision of the intermunicipal agreements, there will remain limited incentive for some upstream municipalities to acknowledge their long term obligations to limit their wet weather discharges. We recommend that the stakeholders process (outlined in Section 9.6 below) be used to evaluate further opportunities and impediments to revising intermunicipal agreements. This process could include legal, institutional and technical analysis by groups such as the Allegheny County Bar Association, the Engineering Society of Western Pennsylvania, the

Allegheny County League of Municipalities, and other stakeholder groups. The goal of this analysis would be to develop consensus approaches to revising the agreements.

Interim Steps

Given the long term process required to address comprehensively intermunicipal agreement issues, there are several short term steps recommended:

- The establishment of a county-wide voluntary dispute resolution process in which municipalities could bring disputes to a peer review board consisting of volunteering engineers, attorneys, municipal officials, and County regulators to review and mediate disagreements. The intent of this process would be to allow the municipalities avoid costly and counterproductive litigation.
- County-wide or watershed-based coordination of sewer use ordinances and enforcement programs.
- The establishment of county-wide guidelines for intermunicipal service agreements through the Allegheny County Health Department guidance documents. A model intermunicipal agreement is provided as Appendix C to this report.
- Flow monitoring by impartial county-wide groups (e.g., the 3 Rivers Wet Weather Demonstration Program) using county-wide monitoring and data management protocols to establish the hydraulic behavior of the relative collection systems during wet and dry weather.

9.2 Financial Issues

9.2.1 Estimates of Capital Need

Given the current state of knowledge about wet weather conveyance capacity and sewer rehabilitation requirements, meaningful estimates of the long term costs of addressing the county-wide wet weather flow management issues are difficult. Nationwide, the estimated costs of compliance with the Combined Sewer Overflow Policy have been estimated to range between \$50 and \$100 billion. Preliminary national estimates of complying with the emerging Sanitary Sewer Overflow Policy are around \$80 billion. It should be noted that these cost estimates do not include the rehabilitation of private lateral sewer repairs and do not address the need to rehabilitate and replace sewer systems due to age and deterioration.

Within Allegheny County, a reasonable order of magnitude estimate would be approximately \$1 billion for short and mid term (less than 20 years) compliance with the CSO and SSO regulatory requirements. This figure includes approximately \$900 million in regional and local/municipal costs within the ALCOSAN service area based on the least cost alternative identified in the draft Regional Long Term Wet Weather Control Concept Plan (LTCP). It must be emphasized that this estimate is preliminary, and is likely to change as the draft Plan evolves.

There is a need for a long term reinvestment in the County's aging sewerage systems that extends beyond, and ultimately overshadows regulatory compliance in importance. To maintain the long term viability of the system, long term (~50 years) municipal rehabilitation efforts are expected. These efforts would extend beyond conventional I/I removal activities to include sewer rehabilitation or replacement, house lateral rehabilitation or replacement and other comprehensive improvements. A range of cost estimates was developed in ALCOSAN's draft LTCP based upon the levels of residential development densities with the service area. These estimates range from around \$1 billion to \$4 billion. County-wide, this figure might be extrapolated to approximately \$1.2 to \$5 billion. Using a mid-range estimate of \$2 billion and a fifty-year period, annual system wide costs would average \$40 million.

There is a need to develop useful county-wide estimates of wet weather conveyance and sewer rehabilitation needs and the subsequent development of a project priority system. We recommend that the development of such estimates be a key element of the recommended County Workplan. To get there, the following steps will be necessary:

- Comprehensive flow monitoring and data analysis as outlined above,
- Analysis and predictive modeling of the conveyance systems and their interactions,
- Development of conceptual alternatives to meet capacity requirements,
- Reiteration and refinement through sewer system evaluation studies in localized areas,
- Development of affordability parameters, and
- Development of a project priority system.

The sewer system evaluation studies (SSES) will identify sewersheds that contribute high quantities of ground water infiltration and inflow and identify high impact sources of inflow and infiltration that could be removed for a relatively low cost. The associated sewer system remediation measures would be implemented under near term schedules by the responsible municipality or groups of municipalities. Potential high impact remediation efforts include the replacement of broken and leaking pipe sections and leaking manhole structures along trunk sewers located along stream channels.

The sewer rehabilitation program could commence with coordinated exchanges of flow monitoring data and the sharing of local anecdotal information on sewer system problems. Using the GIS capabilities of Allegheny County, a list of high priority sewer system repair projects could be developed. Pre and post monitoring activities would verify and quantify the effectiveness of the repairs. The 3 Rivers Wet Weather Demonstration Program is currently assisting the ALCOSAN service area with these approaches.

9.2.2 Affordability Issues

Given the large capital expenditures for wastewater facing Allegheny County, the schedule for sewer rehabilitation work is likely to be driven by what is determined to be "affordable" for county residents. USEPA guidance related to the CSO Policy specifies that annual household wastewater management costs of less than 1.0 percent constitute a low financial impact. Annual household costs between 1.0 percent and 2.0 percent are considered of medium impact, and annual costs exceeding 2.0 percent are considered a high impact. The 1990 median household income in Allegheny County is estimated to be approximately \$35,000. In 1998, the estimated population weighted average household cost of \$235 and the estimated median household income of \$35,000 show that average wastewater costs represented about 0.67 percent of median household income. This would be considered as low impact under the EPA Guidance. The percent criteria are relevant in negotiating combined sewer overflow control implementation schedules with USEPA, i.e., arguments of financial hardship are unlikely to be effective in negotiations with USEPA if household costs are less than 2 percent of the median household income. Annual costs per household using EPA's guidelines are shown by municipality on Table 9-1.

Two percent of the estimated \$35,000 median household income would be approximately \$700 annually, or \$58 per month, or a 297 percent increase over current average annual costs. Sewer rates considered "affordable" by the regulators may be politically unacceptable in a local context. The economic diversity within Allegheny County increases the difficulty of defining "affordable" wastewater management costs. Based on 1990 US Census data, the median household income in Allegheny County ranged from less than \$11,000 (Rankin Borough) to more than \$123,000 (Fox Chapel Borough). Rankin's current estimated costs of \$332

**Table 9-1
USEPA Annual Residential Wastewater Cost Guidelines Applied to 1990 Municipal Median Household Incomes**

	Municipality	1990 Median Household Income	"Low" Impact (<1%)	"Medium" Impact (1%-2%)	"High" Impact (>2%)		Municipality	1990 Median Household Income	"Low" Impact (<1%)	"Medium" Impact (1%-2%)	"High" Impact (>2%)
1	Aleppo Township	\$41,736	\$417	\$626	\$835	66	McCandless, Town of	\$46,900	\$469	\$704	\$938
2	Aspinwall Borough	\$29,500	\$295	\$443	\$590	67	McDonald Borough	\$29,200	\$292	\$438	\$584
3	Avalon Borough	\$22,700	\$227	\$341	\$454	68	McKees Rocks, Borough of	\$16,300	\$163	\$245	\$326
4	Baldwin Borough	\$31,800	\$318	\$477	\$636	69	McKeesport, City of	\$16,427	\$164	\$246	\$329
5	Baldwin Township	\$34,000	\$340	\$510	\$680	70	Millvale Borough	\$20,300	\$203	\$305	\$406
6	Bell Acres Borough	\$35,729	\$357	\$536	\$715	71	Monroeville, Municipality of	\$36,400	\$364	\$546	\$728
7	Bellevue Borough	\$23,700	\$237	\$356	\$474	72	Moon Township	\$42,016	\$420	\$630	\$840
8	Ben Avon Borough	\$37,000	\$370	\$555	\$740	73	Mt. Lebanon Municipality	\$45,800	\$458	\$687	\$916
9	Ben Avon Hts. Borough	\$72,200	\$722	\$1,083	\$1,444	74	Mt. Oliver Borough	\$18,600	\$186	\$279	\$372
10	Bethel Park Borough	\$41,100	\$411	\$617	\$822	75	Munhall Borough	\$23,900	\$239	\$359	\$478
11	Blawnox Borough	\$21,200	\$212	\$318	\$424	76	Neville Township	\$23,400	\$234	\$351	\$468
12	Brackenridge Borough	\$22,223	\$222	\$333	\$444	77	North Braddock Borough	\$18,600	\$186	\$279	\$372
13	Braddock Borough	\$17,300	\$173	\$260	\$346	78	North Fayette Township	\$34,500	\$345	\$518	\$690
14	Braddock Hills Borough	\$17,500	\$175	\$263	\$350	79	North Versailles Township	\$25,100	\$251	\$377	\$502
15	Bradford Woods Borough	\$68,254	\$683	\$1,024	\$1,365	80	Oakdale Borough	\$32,400	\$324	\$486	\$648
16	Brentwood Borough	\$27,700	\$277	\$416	\$554	81	Oakmont Borough	\$31,539	\$315	\$473	\$631
17	Bridgeville Borough	\$25,300	\$253	\$380	\$506	82	O'Hara Township	\$49,100	\$491	\$737	\$982
18	Carnegie Borough	\$21,700	\$217	\$326	\$434	83	Ohio Township	\$42,100	\$421	\$632	\$842
19	Castle Shannon Borough	\$28,700	\$287	\$431	\$574	84	Osborne Borough	\$53,543	\$535	\$803	\$1,071
20	Chalfant Borough	\$24,200	\$242	\$363	\$484	85	Penn Hills, Municipality of	\$32,300	\$323	\$485	\$646
21	Cheswick Borough	\$31,676	\$317	\$475	\$634	86	Pennsbury Village Borough	\$39,405	\$394	\$591	\$788
22	Churchill Borough	\$58,600	\$586	\$879	\$1,172	87	Pine Township	\$46,810	\$468	\$702	\$936
23	Clairton, City of	\$17,396	\$174	\$261	\$348	88	Pittcairn Borough	\$21,100	\$211	\$317	\$422
24	Collier Township	\$29,700	\$297	\$446	\$594	89	Pittsburgh, City of	\$20,700	\$207	\$311	\$414
25	Coraopolis Borough	\$21,865	\$219	\$328	\$437	90	Pleasant Hills Borough MA	\$41,577	\$416	\$624	\$832
26	Crafton Borough	\$28,200	\$282	\$423	\$564	91	Plum Borough	\$36,800	\$368	\$552	\$736
27	Crescent Township	\$35,391	\$354	\$531	\$708	92	Portvue Borough	\$24,976	\$250	\$375	\$500
28	Dormont Borough	\$27,700	\$277	\$416	\$554	93	Rankin Borough	\$10,900	\$109	\$164	\$218
29	Dravosburg Borough	\$22,886	\$229	\$343	\$458	94	Reserve Township	\$31,472	\$315	\$472	\$629
30	Duquesne, City of	\$15,801	\$158	\$237	\$316	95	Richland Township	\$38,968	\$390	\$585	\$779
31	East Deer Township	\$21,840	\$218	\$328	\$437	96	Robinson Township	\$38,500	\$385	\$578	\$770
32	East McKeesport Borough	\$20,900	\$209	\$314	\$418	97	Ross Township - ALCOSAN	\$36,400	\$364	\$546	\$728
33	East Pittsburgh Borough	\$16,200	\$162	\$243	\$324	98	Rosslyn Farms Borough	\$73,600	\$736	\$1,104	\$1,472
34	Edgewood Borough	\$33,400	\$334	\$501	\$668	99	Scott Township	\$34,600	\$346	\$519	\$692
35	Edgeworth Borough	\$69,314	\$693	\$1,040	\$1,386	100	Sewickley Borough	\$30,402	\$304	\$456	\$608
36	Elizabeth Borough	\$21,888	\$219	\$328	\$438	101	Sewickley Heights Borough	\$85,219	\$852	\$1,278	\$1,704
37	Elizabeth Township	\$30,542	\$305	\$458	\$611	102	Sewickley Hills Borough	\$55,961	\$560	\$839	\$1,119
38	Emsworth Borough	\$27,900	\$279	\$419	\$558	103	Shaler Township	\$37,000	\$370	\$555	\$740
39	Etna Borough	\$24,900	\$249	\$374	\$498	104	Sharpsburg Borough	\$18,900	\$189	\$284	\$378
40	Fawn Township	\$31,312	\$313	\$470	\$626	105	South Fayette Township	\$35,700	\$357	\$536	\$714
41	Findlay Township	\$35,028	\$350	\$525	\$701	106	South Park Township	\$37,382	\$374	\$561	\$748
42	Forest Hills Borough	\$38,600	\$386	\$579	\$772	107	South Versailles Township	\$26,719	\$267	\$401	\$534
43	Forward Township	\$29,115	\$291	\$437	\$582	108	Springdale Borough	\$22,875	\$229	\$343	\$458
44	Fox Chapel Borough	\$123,100	\$1,231	\$1,847	\$2,462	109	Springdale Township	\$27,578	\$276	\$414	\$552
45	Franklin Park Borough	\$66,800	\$668	\$1,002	\$1,336	110	Stowe Township	\$19,700	\$197	\$296	\$394
46	Frazer Township	\$26,603	\$266	\$399	\$532	111	Swissvale Borough	\$23,800	\$238	\$357	\$476
47	Glassport Borough	\$20,146	\$201	\$302	\$403	112	Tarentum Borough	\$19,932	\$199	\$299	\$399
48	Glenfield Borough	\$18,250	\$183	\$274	\$365	113	Thornburg Borough	\$85,300	\$853	\$1,280	\$1,706
49	Greentree Borough	\$40,600	\$406	\$609	\$812	114	Trafford Borough	\$31,300	\$313	\$470	\$626
50	Hampton Township	\$45,538	\$455	\$683	\$911	115	Turtle Creek Borough	\$18,100	\$181	\$272	\$362
51	Harmar Township	\$26,523	\$265	\$398	\$530	116	Upper St. Clair Township	\$67,700	\$677	\$1,016	\$1,354
52	Harrison Township	\$24,766	\$248	\$371	\$495	117	Verona Borough	\$22,000	\$220	\$330	\$440
53	Haysville Borough	\$22,679	\$227	\$340	\$454	118	Versailles Borough	\$21,170	\$212	\$318	\$423
54	Heidelberg Borough	\$22,100	\$221	\$332	\$442	119	Wall Borough	\$17,900	\$179	\$269	\$358
55	Homestead Borough	\$11,400	\$114	\$171	\$228	120	West Deer Township	\$31,672	\$317	\$475	\$633
56	Indiana Township	\$34,800	\$348	\$522	\$696	121	West Elizabeth Borough	\$24,375	\$244	\$366	\$488
57	Ingram Borough	\$26,600	\$266	\$399	\$532	122	West Homestead Borough	\$22,300	\$223	\$335	\$446
58	Jefferson Hills Borough	\$34,548	\$345	\$518	\$691	123	West Mifflin Borough	\$26,900	\$269	\$404	\$538
59	Kennedy Township	\$35,700	\$357	\$536	\$714	124	West View Borough	\$28,600	\$286	\$429	\$572
60	Kilbuck Township	\$41,700	\$417	\$626	\$834	125	Whitaker Borough	\$23,600	\$236	\$354	\$472
61	Leet Township	\$37,961	\$380	\$569	\$759	126	White Oak Borough	\$30,110	\$301	\$452	\$602
62	Leetsdale Borough	\$21,570	\$216	\$324	\$431	127	Whitehall Borough	\$34,200	\$342	\$513	\$684
63	Liberty Borough	\$25,578	\$256	\$384	\$512	128	Wilkins Township	\$33,300	\$333	\$500	\$666
64	Lincoln Borough	\$26,950	\$270	\$404	\$539	129	Wilkesburg Borough	\$22,700	\$227	\$341	\$454
65	Marshall Township	\$54,400	\$544	\$816	\$1,088	130	Wilmerding Borough	\$16,200	\$162	\$243	\$324
							Average	\$34,600	\$346	\$519	\$692
							Population Weighted Average	\$31,000	\$310	\$465	\$620
							Minimum	\$10,900	\$109	\$164	\$218
							Maximum	\$123,100	\$1,231	\$1,847	\$2,462

annually are 2.6 percent of their median household income. Fox Chapel's current estimated annual cost of \$363 is 0.2 percent of their median household income.

There is a need for the establishment of Allegheny County specific affordability parameters that would set the framework for how much sewer rehabilitation work can be afforded annually on a county-wide basis given the diversity of incomes between the municipalities. Affordability parameters could include such factors as:

- The sources of funding available,
- The intermunicipal and regional allocation of costs throughout the County, and
- Consensus of acceptable annual costs per user.

Implicit in these factors are major policy and value issues, including the level of collective responsibility for sewer rehabilitation.

The project priority system would allocate resources to those annual projects with the greatest overall benefit. Priority rating criteria could include such factors as:

- The cost-effectiveness of a project (i.e., do the cheap and easy work first),
- Public health and water quality benefits,
- Intermunicipal and watershed level benefits to be achieved, and
- The potential contributions to economic development.

This list is illustrative only, and would depend heavily on the role of the County (if any) and the source and level of funding for sewer work. The development of affordability factors and project prioritization factors should be components of the proposed County Wastewater Workplan.

9.2.3 Current Municipal Sources of Capital for Wastewater System Improvements

There are six sources of capital currently available to municipalities for wastewater projects. These include:

- General Obligation Bonds,
- Revenue Bonds,
- Special Assessments (Tax Increment Financing),
- Pay-As-You-Go,
- Grants, and
- Loan Programs.

Municipal general obligation bonds are issued with the covenant that the issuing municipalities will collect sufficient tax revenues to make principal and interest payments, generally through property taxes. They have the lowest interest costs of municipal bonds due to their implicitly stable revenue stream. General obligation bonds have the added advantage of the incremental property tax being deductible on property owner's income

tax returns. General obligation bonds for sewer projects would compete with other municipal capital projects for the municipal debt ceiling however. In addition, they are cumbersome and expensive to issue and, unless offset, require property tax increases.

Revenue bonds may be issued by municipal authorities. They are repaid through the issuing authority's annual revenues from user charges. They have the advantages of not applying to the municipal debt ceiling nor resulting in the direct increase in property taxation. They carry higher interest costs due to their revenue streams being less certain than property tax levies. Like general obligation bonds, revenue bonds are expensive and cumbersome for smaller municipalities to issue.

Tax-increment financing can provide a relatively low cost, long-term source of financing to the municipalities and property owners. Under this approach, municipalities could make repairs to faulty house sewer laterals and other problems on private property and recover the costs through a special tax levy on the property owner. The property owner can pay off the costs of the improvements over an extended period and potentially, deduct some incremental tax payments from his or her income.

Under "pay-as-you-go" financing, the municipality annually would budget a set amount for sewer rehabilitation based upon the local resources. This approach has the long-term advantage of avoiding interest and other financing costs, but does not provide large amounts of capital for major projects. A proactive preventive maintenance and sewer rehabilitation program paid for through the annual budget should be a goal for all municipalities.

There are no major grant programs currently available for wastewater funding. Only small, targeted programs such as the 3 Rivers Wet Weather Demonstration Program with its emphasis on developing innovative wet weather management techniques and the Community Development Block Grant program, with its emphasis on assisting low income areas exist. These specific programs were outlined in Section 4 of this report.

There are loan programs that can provide an alternative to municipalities directly issuing debt through general obligation or revenue bonds. The most important program is the PENNVEST construction loan program through the Pennsylvania Infrastructure Investment Authority. PENNVEST offers loans at 1 percent to 6 percent interest rate for up to 20 years. There is an \$11 million project cost limit. Over the term of a 20-year loan, reduced interest costs comprise a significant "grant" to the municipalities. For example, reducing interest rates from 6 percent to 3 percent on a \$1 million project would result in a \$20,000 annual reduction in debt service costs and cumulative cost savings of approximately \$400,000.

9.2.4 Funding Coordinators

There are at least 17 County, state and federal programs dealing with wastewater system financing or operations that are relevant to the municipalities within Allegheny County. A clever bundling of these sources could comprise a significant source of funding for a municipal wastewater project. Due to their disparate sponsoring agencies and programmatic goals, the application process, eligibility requirements and variable budget cycles between programs, municipalities often lack the time, resources and knowledge to develop an integrated funding package for their projects.

The municipalities could benefit from access to funding coordinators. Funding coordinators would be skilled in matching a municipality's wastewater financing or operational needs and potential funding sources. They would track funding opportunities, eligibility requirements, application procedures and deadlines and help the municipalities assemble a funding package.

The funding coordinators could be provided by Allegheny County (Department of Health or the Department of Economic Development), and housed by the Councils of Governments, the 3 Rivers Wet Weather Demonstration Program, Southwest Pennsylvania Commission or another nonprofit entity. Funding could come from the County or from grant or foundation sources and through small fees from those municipalities receiving

services. Initially, coordination could focus on municipalities interested in working on intermunicipal watershed-based efforts.

9.2.5 Funding Source Integration

There are also opportunities for the streamlining and integration of the administrative procedures and requirements of the various funding programs. Potential areas of integration include engineering and economic analysis, environmental assessments, procurement compliance, and application cycle coordination. As envisioned, the funding agencies would integrate where practical forms and reporting requirements such that upon completion of an integrated application package, participating agencies would be confident that their respective requirements have been met.

9.2.6 Long Term Capital Financing Sources

The various funding programs that are currently available are not remotely adequate to meet the long term wastewater funding needs of the County. As noted above, there is an estimated near term (<20 years) need of approximately \$1 billion and a long term (~50 years) need of an additional \$2 - 4 billion for reinvestment in the County's wastewater infrastructure. There is a need for a stable, long term source of capital that can be accessed cost effectively. Ideally, this source would include low cost loans and, based on affordability and other criteria, state and federal grant funds.

In developing a long term funding program, consideration must be given to the 1) potential sources of capital and 2), the appropriate mechanisms for distributing the resources (as loans and/or grants) and 3), the identification of a potential agency or agencies to channel the funds to the municipalities. Ultimately, there are only two sources of capital. These are state and federal grants and the residential, commercial and institutional users of the County's wastewater systems.

The outlook for large scale federal grant funding is not good at present. Through the determined efforts and leadership of the County's Congressional Delegation and Pennsylvania's Senators, funding has been obtained for the 3 Rivers Wet Weather Demonstration Program. Through the anticipated Federal Fiscal Year 2000 appropriation, total Federal funding for the 3 Rivers Wet Weather Demonstration Program's various activities totals approximately \$9.15 million. It is noteworthy that the Federal fiscal year 2000 earmark of \$2.9 million was one of the largest appropriated by Congress. While significant, the intent of the 3 Rivers Program is to identify cost-effective means of managing wet weather sewage flows, thereby leading to an ultimate reduction in the projected long term costs of sewer rehabilitation. The 3 Rivers Program is not intended to be an all-encompassing construction grants program.

Since the evolution of the USEPA Wastewater Construction Grants Program to the State Revolving Loan Program in the 1980s, large scale grant funding has been limited to a handful of major metropolitan areas, such as the \$500 million Rouge River Demonstration Program in Wayne County (Detroit), Michigan. Despite the national estimates of \$80 billion for combined sewer overflow policy compliance and \$50 - \$100 billion for sanitary sewer overflow compliance, there is no movement in Congress to revive a broad-based grants program or to increase the capitalization grants for the state revolving loan programs.

Allegheny County's Congressional Delegation has worked diligently to provide Federal resources, and as evidenced by the Federal funding of the 3 Rivers Wet Weather Demonstration Program, has bucked the Federal budget trends. However, large scale Federal grants for the rehabilitation of Allegheny County's sewer systems do not appear to be forthcoming. Whatever Federal funding, alternative state and count-wide funding sources also need to be pursued.

9.2.7 Potential State Sources

Several enhancements and alternatives to the PENNVEST program may be suggested for additional analysis:

Zero Interest Loans

The PENNVEST program currently provides loans with interest rates varying based on municipal financial capability. Consideration could be given to establishing a zero interest loan program for economically distressed municipalities. The loss of interest revenue to PENNVEST would be made up through the Commonwealth appropriations to the capital budget. Zero interest loans would constitute indirect grants to the participating municipalities. For example, a \$1 million loan with a 20-year term and 6 percent interest would generate \$740,000 in interest costs over the term of the loan. A zero interest loan would therefore result in a \$740,000 cost savings to the municipality. The net cost to the municipality at zero percent interest would be comparable to their having received a \$430,000 grant and borrowing the remaining \$570,000 at 6 percent interest.

Interest Rebate Loans

This idea is similar to the zero interest loan. However, the interest rate would be held at a standard program level (e.g., 6%). The annual interest payments would be rebated to the municipality for use on additional sewer rehabilitation or preventive maintenance activities. For example, assuming a 6 percent, 20 year loan on a \$1 million project, interest payments would average \$24,000 annually during the first ten years of the term.

PENNVEST Enhancements

The PENNVEST program has been highly successful and is well regarded. However, the funding for individual projects is limited to \$11 million. This amount may be inadequate for larger municipal sewer rehabilitation projects. Additionally, the project priority system used to rank projects for funding has not emphasized sewer rehabilitation projects. Currently, wet weather management projects are only able to achieve a medium score in the environmental need category used in PENNVEST project evaluation by the Pennsylvania Department of Environmental Protection. Similarly, the economic development criteria used by the Pennsylvania Department of Community and Economic Development do not emphasize rehabilitation and reinvestment in municipal sewer systems. PENNVEST might consider modifying its policies to encourage sewer rehabilitation to maintain current system capacities and to free up system capacities that are currently being lost to excessive wet weather flows.

State Sewer Rehabilitation Fund

The Commonwealth could establish a broad-based state sewer rehabilitation fund through the Pennsylvania Infrastructure Investment Authority (PENNVEST) or other administrative location. The rehabilitation fund would serve as the conduit for federal and state grants to municipalities and authorities or serve as a loan making agency focusing on sewer rehabilitation. Through annual capital appropriations and/or state general obligation bonding, the Commonwealth could capitalize a loan or grant program. A key target of these loans and grants would be to provide a source of the local match for municipalities receiving federal grants. The establishment and capitalization of a state grant program could significantly enhance Pennsylvania's efforts to obtain large scale and long term federal funding through Congressional earmark appropriations. The experience of the 3 Rivers Wet Weather Demonstration Program has shown that Allegheny County's Congressional delegation is better able to obtain federal appropriations when they can demonstrate a state funding commitment.

9.2.8 Potential County-Wide and Regional Funding Mechanisms

Several options for the creation of new county-wide or regional wastewater funding mechanisms have been identified.

Allegheny County (Southwest Pennsylvania) Wastewater Bond Bank

Allegheny County and the surrounding counties in Southwest Pennsylvania might consider establishing a wastewater bond bank. Under the bond banking concept, the borrowing needs of municipalities are aggregated and serve as the basis for a periodic (e.g., semiannually) issuance of bonds by a regional agency. The bonds could be general obligation bonds, backed by the property taxing authority of the sponsoring counties, revenue bonds, backed by the covenanted municipal repayments or "double barreled" bonds, in which bond repayment is to be made from municipal loan repayment revenues with the additional investor safeguard of recovering costs through property taxation. A principle benefit of a county-wide bond bank would be lower interest rates to the municipalities due to the County's large financial base. Bond banks have the additional benefits of increasing access to capital markets by the smaller municipalities and, through economies of scale, providing lower issuance and administrative costs.

Wastewater Facilities Improvement Authority

Under this approach, a county-wide or regional wastewater facilities improvement authority would take a direct role in the planning, design and construction of wastewater projects. The improvement authority would be capitalized through revenue bonds. The authority would enter purchase lease agreements with participating municipalities. The authority would purchase the collection sewer system from the municipality for a nominal amount (e.g., one dollar). The authority would then rehabilitate and maintain the municipal collection system and lease the system to the municipality. The maintenance and rehabilitation costs (including the financing costs of the improvement authority) would be recovered through the lease payments from the municipality.

This approach would have several advantages. First, it would provide for technical, financial, administrative and operation economies of scale that could reduce costs to the municipalities. Secondly, it would provide a means for municipalities to get out of the sewer business if they desire. Finally, the improvement authority could encourage inter-municipal cooperation within watersheds and obviate much of the discord over intermunicipal responsibilities for wet weather flow management.

The appropriate administrative structure for a county-wide funding program would need to be determined. Existing agencies such as the Authority for Improvements in Municipalities or the 3 Rivers Wet Weather Demonstration Program are potential candidates. Alternatively, a new agency chartered under the Pennsylvania Municipalities Authority Act might be appropriate.

9.2.9 Wastewater Program Revenue Strategies

Wastewater system reinvestment requirements within Allegheny County over the next fifty years have been estimated to be in the billions. The annual debt service on \$1 billion would be approximately \$87 million.¹

Determining equitable and efficient sources of revenue to repay such bonds will clearly be a critical issue in the future. Equally important however, is the development of sources of revenues that could reduce the need for long term debt. Several potential local revenue streams have been identified.

¹ Assuming a 20 year bond term at 6% interest. This amount is illustrative only.

Property Tax Millage Dedication

Consideration could be given to a dedication of one mill or more in county-wide property tax levies. Based on the total assessed value of taxable property of \$9.5 billion, a one mill increase would generate approximately \$9.5 million annually. This amount could fund grants or low interest loans to the municipalities for sewer rehabilitation on a pay-as-you-go basis. Alternatively, if used as a dedicated revenue stream for bond repayments, this amount could be leveraged to approximately \$110 million, assuming 6 percent interest on a 20 year bond. For a residential property with a market value of \$100,000 a one mill increase would result in an annual tax increase of approximately \$25.

Sewer User Charge Add-On

The 35 wastewater treatment agencies in Allegheny County have a combined annual budgets of approximately \$110 million, primarily raised directly or indirectly from user charges. A 1 percent surcharge on sewer user charges dedicated to sewer rehabilitation would generate approximately \$1.1 million annually. This could be leveraged into approximately \$12.6 million in funding through revenue bonds.² A 1 percent surcharge would mean a weighted average annual cost per residential user of about \$2.40. Alternatively, a one dollar a month surcharge would result in annual revenues of approximately \$5.5 million that could be leveraged to \$63 million for sewer rehabilitation projects.

Proactive Rehabilitation Fund Contributions

Sewer rehabilitation in Allegheny County will be a long term process. Given the level of reinvestment that will be required, there will be multi-year overlapping cycles of planning, design and construction. Even if the political consensus and financial resources were currently available for major rehabilitation efforts, there would be at least a several year lag time before construction could begin. The municipalities and the municipal authorities of Allegheny County could use this lead time to set up sewer rehabilitation funds capitalized through sewer user charge add-ons. These funds could significantly reduce long term borrowing needs. By way of example, assume that \$1 billion in sewer rehabilitation is required. Assume further a ten-year construction/implementation period, with annual bond sales to finance that years' activities. Allowing for planning and design, using 2005 as a starting date for construction is reasonable. Shown on Table 9-2 are the impacts of implementing a rehabilitation surcharge of \$1 through \$5 per residential equivalent connection.³ The surcharges would apply starting in 2000 and last through the completion of construction (2014).

With no surcharge, total borrowing would be \$1 billion. Average annual debt service costs would be approximately \$61 million annually. Total debt service payments over the life of the bonds needed to finance the \$1 billion would approximate \$1.83 billion. A \$1 per month surcharge would reduce borrowing needs by approximately \$103 million to \$897 million. Annual debt service would decline to approximately \$55 million, resulting in a savings of approximately \$200 million over the terms of the bonds. If the surcharge were to be \$5 per month, the borrowing requirements would decline to about \$470 million over ten years. Average annual debt service payments would be approximately \$32 million. Over the lives of the bonds, an estimated \$1 billion in debt service cost savings would be realized. This would translate into a long term savings per equivalent residential connection of about \$1,000.

² Assumes a 20 year bond term at 6% interest.

³ A residential equivalent connection is the volume of water consumed annually by an average residence (approximately 20,000 gallons). Thus, a commercial establishment using 80,000 gallons of water annually would be 4 residential equivalents.

**Table 9-2
Impacts of Pre-Construction User Surcharge
(Hypothetical \$1 Billion over 10 Year Construction)**

Monthly Contribution per Residential Equivalent ⁴	Amount Financed (\$ billion)	Average Annual Debt Service (\$ million) ⁵	Total Debt Service (\$ billion)
\$0	\$1.00	\$61.03	\$1.83
\$1	\$0.90	\$54.80	\$1.64
\$2	\$0.79	\$48.50	\$1.45
\$5	\$0.47	\$32.00	\$0.87

9.2.10 Mechanisms for Financing Sewer Lateral Rehabilitation

Nationally, it is estimated that approximately 50 percent of inflow and infiltration may originate on private property. Successful inflow and infiltration removal programs must address these sources. The sources of these wet weather flows include leaking and deteriorated building lateral sewers and foundation drains. These sources are clearly difficult and expensive to address compared with the disconnection of downspouts and other steps that can be achieved through sewer use ordinances. The costs to homeowners can be substantial. Municipalities are currently implementing and evaluating new lateral repair technologies with the financial support of the 3 Rivers Wet Weather Demonstration Program. The results of these evaluations will result in a body of knowledge that can be applied county-wide.

Municipalities have expressed concerns about legal impediments to providing improvements in the form of lateral sewer repairs on private property. These concerns revolve around the potential taking of private property implied by the work, and subsequent long term municipal responsibilities for maintenance after repairs have been made. The Finance Advisory Panel of the 3 Rivers Wet Weather Demonstration Program is currently examining these issues.

A "low impact" funding mechanism is needed to make private source repairs politically and financially acceptable. One approach that is actively being pursued by the Three Rivers Program and local legislative leader is the expansion of the PENNVEST program to make corrections on private property eligible for low-cost, long term financing. Legislation introduced in the General Assembly⁶ provides PENNVEST eligibility for the costs of building lateral sewers and connections into municipal collection systems. PENNVEST currently has an analogous program for addressing on-lot wastewater system problems. The proposed legislation was intended for new sewer connections, and does not specifically address lateral rehabilitation. Senator Murphy of Allegheny County is drafting legislation that would specifically make lateral rehabilitation projects eligible for

⁴ Based on an estimated 500,000 residential equivalent connections.

⁵ Assume 20 year term and 6% interest.

⁶ House Bill 1116 introduced on March 29, 1999 and referred to the Committee on Environmental Resources and Energy.

PENNVEST legislation. The 3 Rivers Wet Weather Demonstration Program is working with Senator Murphy's office on this legislation.

The proposed lateral financing legislation assumes that the contractual relationship would be between PENNVEST and the individual property owners. This approach avoids the legal ambiguity between public and private ownership and responsibility that could result from public funding of private lateral repairs. It may however be complex and unwieldy for projects in densely developed urbanized areas. It could, for example, preclude the municipality from procuring and managing contractors.

The proposed legislation addresses PENNVEST funding of lateral repairs. There is a need for unambiguous legislation or a judicial interpretation of existing law that municipalities have the authority to repair private sewer laterals independently of PENNVEST.

We recommend that the Pennsylvania General Assembly enact lateral repair legislation that contain the following provisions:

- Municipalities (or municipal authorities) can make repairs to private lateral sewers without assuming ownership or long term maintenance responsibilities.
- Municipalities may use public funds for repairs to private property in recognition of the cost-effective public benefit of such repairs.
- Municipalities may recover the costs of lateral repairs from the property owners through a special property tax assessment over a multi-year period or other repayment plan.
- Municipalities may require lateral sewers to meet specific performance standards.

9.2.11 Financial Mechanisms for Fostering Regionalization

In several locations around Allegheny County, the solution to on-lot wastewater problems would be to connect a new collection sewer into a neighboring municipality. These solutions can be stymied by the high cost of the tapping fees under the municipalities' user charge system.⁷ The tapping fees typically are calculated based upon the estimated replacement cost of the facilities into which the connection is made. There is no requirement to account for depreciation. While properly acknowledging the equity that the host community has accumulated in its system, the method of calculation can result in high unit costs per gallon per day for interconnection projects.

One solution would be to reevaluate provision of the Municipality Authorities Act for potential amendment. This however, would be cumbersome and could induce unintended consequences in other applications of this provision. A second potential approach would be to amend Article 14 of the Health Code or PaDEP administrative code to require an economic evaluation that considers the tapping fee value of the system and the present worth of the stream of payments that the connecting service area would bring. In addition, the basis of the tapping fee could be altered in such cases to reflect the replacement costs, net of estimated rehabilitation costs that would be required to bring the sewer system back to its original design performance standards.

⁷ Tapping and connection fees are proscribed under the Municipality Authorities Act. See section 3.2.5 of this report for a detailed discussion.

9.3 Conveyance Systems

9.3.1 Awareness of Evolving Mandates

The management of sewage flows during wet weather has become the driving wastewater management issue in Allegheny County as it has nationally. More specifically, the issue may be defined as the management of the volumes of storm, sewage and groundwater entering municipal sewers such that overflows from sanitary sewer systems are eliminated (or reduced) and overflows from combined systems are managed sufficiently to comply with the USEPA Combined Sewer Overflow Policy. The dominance of the wet weather management issue has resulted from a convergence of factors:

- USEPA's Combined Sewer Overflow Policy is requiring combined sewer municipalities to evaluate their systems, implement "9 Minimum Controls" and prepare Long Term Control Plans,
- USEPA Region III's emphasis on Sanitary Sewer Overflows elimination as a requirement of the Clean Water Act,
- Potential USEPA Sanitary Sewer Overflow requirements, including the permitting of collection systems,
- The forthcoming Phase II Stormwater Regulations,
- Wet weather capacity limitations are threatening to impede growth and economic development, and
- The general deterioration of municipal sewer systems due to aging.

We recommend steps to raise the awareness of municipal officials about the evolving USEPA sanitary sewer regulations. This awareness would allow the municipalities an opportunity for input during the rule making phase, with emphasis on the need for flexibility to account for Allegheny County's unique situations. Municipal officials could be informed about the changing regulatory climate through such steps as presentations to municipal groups such as the Councils of Governments, the Local Government Academy, and the Allegheny County League of Municipalities, the periodic distribution of fact sheets and other written material by ACDED or ACHD, and press releases. The 3 Rivers Wet Weather Demonstration Program is developing community outreach programs. These efforts should be encouraged and supported.

Municipalities also need a better understanding of the need for a long term commitment to cost effective municipal collection sewer rehabilitation. Rehabilitation is necessary for eliminating sanitary sewer overflows and controlling combined sewer overflows to comply with the Pennsylvania Clean Streams Law and the Clean Water Act. More important than regulatory compliance however is the preservation of the long term reliability of the municipal sewers. Maintaining and reinvesting in the municipal sewers, along with other aging infrastructure, is critical for public health and the long term economic viability and competitiveness of the region. The challenge will be to develop an equitable and affordable strategy for reinvesting in the municipal sewer systems and regional conveyance systems.

9.3.2 Wet Weather Flow Monitoring and Analysis

The management of wet weather flows is dependent upon a firm understanding of the relationships between the hydraulic capacities of sewer systems and the capacity demands imposed by various wet weather events. This relationship is highly dynamic, and depends upon such factors as the size, duration and timing of storms, the hydrologic behavior of the drainage area (slope, land use, etc.), the hydraulic influences (e.g., back flows) of the interceptor sewers or receiving streams into which a sewer discharges, and the size, composition and condition of the sewer pipes. An understanding of the capacities of the municipal conveyance systems to

handle wet weather flows is beyond the scope of this Report. As noted in Section 5, flow monitoring data conducted within Allegheny County showed typical wet weather flow rates of about 1,000 gallons per capita per day, with some areas ranging up to 2,000 gallons per capita per day peak flow rates. These figures contrast with PaDEP's design standard for new sanitary sewer systems of 250 gallons per capita per day flow rates.

Understanding the wet weather hydraulic behavior of individual municipal systems and, as critical, the intermunicipal interactions of interconnected systems will require years of flow monitoring, data quality control, analysis and dynamic computer modeling. The resources and levels of sophistication required are beyond those available to most municipalities, and hence an intermunicipal watershed-based approach to cost and resource sharing is recommended.

Under an intermunicipal flow monitoring program, the municipalities could share joint responsibilities for flow monitoring and the quality control of flow monitoring data. Alternatively, watershed-based groups of municipalities or the county could pool resources and procure these services. These services could be provided under contract by engineering firms, or potentially, through expanded internal resources of the County or other public entity.

As a preliminary step, there is a need for a county-wide set of protocols for the selection of flow monitoring locations, the types of flow monitors that are appropriate for various conditions (e.g., pipe size, surcharge conditions, etc.) data collection and quality control, and data analysis related to flow monitoring. It is essential that the limited resources of the municipalities be used efficiently and effectively. In the past, particularly when flow monitoring was done quickly in response to regulatory compliance threats, the quality and applicability of flow monitoring data have been suspect.

It is recommended that a county-wide set of protocols be promulgated as Allegheny County Health Department guidance. An example of flow monitoring protocols is the flow monitoring standards to be issued by the 3 Rivers Wet Weather Demonstration Program for use by their municipal grantees. These protocols were developed by ALCOSAN and the 3 Rivers Program as technical assistance to the municipalities in response to problems encountered by the municipalities after being ordered by USEPA to flow monitor through the Section 308 mechanism.

Flow monitoring data are meaningful only in context with practical analysis that can result in the prediction of system behaviors under various wet weather conditions. At a local level, predicting the wet weather performance of sewers has historically been done through desktop engineering analysis of the individual municipal system. At a sub-watershed or watershed level (i.e., at intermunicipal levels) hydraulic and hydrologic dynamic modeling is required to understand the relationships of the interconnected sewer systems. This sophisticated analysis provides another opportunity for intermunicipal resource sharing and/or for a County lead in providing such services.

The outcome of thoughtfully organized, comprehensive and integrated flow monitoring and dynamic modeling efforts will be an increasingly detailed picture of the wet weather capacity needs throughout the County, and hence the likely priorities for rehabilitation. This process is likely to be reiterative. A logical strategy would be to work up watershed systems into smaller and smaller subsystems. The broad area results would inform municipal and County decision makers where to focus on more detailed analysis and model refinement. This strategy is in contrast to a shotgun pattern of simultaneous monitoring by multiple municipalities.

9.3.3 Data Collection

Several other aspects of conveyance system capacity require County and intermunicipal attention. First, there is a continuing need for the expansion and refinement of municipal sewer system GIS coverages. Under Article 14 of the Allegheny County Health Department, municipalities are required to prepare and submit sewer maps to ACHD. Many municipalities have or are preparing their maps using GIS, but this was not required under

Article 14. During this study, major efforts were expended to compile all digitized sewer map coverages, by that showing the relationships between the municipal sewer service areas. This effort was not completely successful due to gaps in the digital coverage and the unavailability of some digital files. ACHD has been administering the GIS data exchange program where in the municipalities are provided the County's GIS tiles in exchange for an agreement to return GIS files with the sewer systems. Due to labor and resource shortages within the municipalities, this often does not occur in a timely fashion. The County may wish to consider ways to support the municipal efforts at inventorying and preparing digital maps of their sewer systems. Steps could include the amendment of Article 14 to require the preparation of digital maps. On a more positive note, the County could consider funding planning, GIS and engineering student interns to digitize municipal maps. These efforts could include field verification of key attributes (e.g., invert elevations) and the location of manholes, municipal interconnections, etc. using global positioning equipment.

There is also a need for a county-wide mechanism for the collection and maintenance flow monitoring data, sewer maps, institutional information such as sewer use ordinances, service area delineations, etc. Much effort in Phase I of this study went into collecting and organizing data. This process repeated a periodic process of collecting and integrating data that could have been maintained in a paper or electronic data base. It is recommended that the County establish a formal process and resources for the updating, maintaining and expansion of the wastewater data bases represented by this Study and by other efforts such as the system benchmarking surveys being conducted by the 3 Rivers Wet Weather Demonstration Program. An Allegheny County wastewater facilities data base library / clearing house is envisioned. Beyond the maps and GIS coverages and flow monitoring data, the clearing house could house reports (e.g., Act 537 Plans and Chapter 94 reports), project descriptions, project cost data, and other information relevant to wastewater management. Possible physical and institutional venues include the Allegheny County Health Department, the 3 Rivers Wet Weather Demonstration Program, the Carnegie Library system or one of the universities. Foundation funding could be investigated as a potential source for the implementation of this concept.

Defining the capacity demands to be addressed is a final major aspect of conveyance system capacity assessments. Once conveyance system capacities are estimated, their adequacy must be addressed in the context of "acceptable" discharge rates into the conveyance system. Acceptable discharge rates could be based on a standard design criterion, e.g., 250 gallons per capita per day (PaDEP) or defined as the actual (measured) peak flow rates entering a sewer at any point of connection whatever its source. The basis for this definition has profound implications for the responsibilities of the discharging (upstream) and receiving (downstream) sewer systems. The lower the discharge rate, the greater the requirements on the upstream municipality to reduce wet weather flow rates through system rehabilitation and/or wet weather storage tanks. The higher the discharge rate, the greater the requirements on the downstream municipality to transport and/or treat high volumes of sewage during wet weather through larger pipes and treatment plants. The watershed wide and county wide challenge will be to identify the least total cost combination of upstream and downstream responsibilities.

9.4 Treatment Plants

9.4.1 Introduction

There are 49 public treatment plants in Allegheny County and 36 private treatment plants. This number is down from the 150 identified in the 1970 Comprehensive Sewerage Needs Plan. Clearly, there has been a process of consolidation and regionalization. This process was anticipated in 1970, as the suburban population densities increased to support larger, more regional wastewater systems. Given the current operating conditions and plant capacities, a need for widespread future consolidation of treatment plants was not identified as a priority. This does not preclude municipalities and municipal authorities from identifying local opportunities for cost-effective consolidations. Areas currently being investigated include: consolidating the Dravosburg STP into the McKeesport WPCP; consolidating the Virginia Drive STP (Lincoln Borough) into the

McKeesport WPCP via the Liberty Borough conveyance system; and constructing a regional wastewater treatment plant to potentially consolidate the Sewickley Hills Borough STP and two, privately-owned treatment plants.

The number of treatment plants exhibiting hydraulic overload conditions in the near future is underestimated by the current regulatory definition of hydraulic overload. The Chapter 94 definition of hydraulic overload requires a publicly owned treatment works (POTW) to exceed the permitted average monthly flow for three consecutive months. By this definition, all 49 POTWs in Allegheny County were compliant in 1997. However, 17 POTWs exceeded their respective average monthly flow during at least one month during 1997. In general, monthly flow exceedance occurred from November to March, when the most severe wet-weather conditions exist. Finally, 21 POTWs have average monthly flows within 75 percent of the permitted hydraulic loading capacity. Table 8-1 summarizes these findings.

The estimated county-wide service population is projected to increase to approximately 1.54 million by the design year 2015. If this growth were to occur, it would represent an increase of 15 percent. This represents an increase of slightly less than one percent annually, over the planning period. Based on the projected changes in population, hydraulic and organic loadings for the design year 2015 were estimated. Based on these estimates, the average daily flow from 12 of the 49 publicly-owned treatment plants in Allegheny County would exceed their current average daily permitted design capacity by at least two percent. Six treatment plants would exceed their current average daily permitted organic loading capacity by at least two percent.

Due to pending wet-weather compliance regulations, the number of treatment facilities operating close to their permitted treatment capacity, and number of POTWs exceeding the average permitted monthly flow during wet-weather months, the number of treatment plants estimated to exceed their current permitted capacity for the design year 2015 may be under estimated. As sanitary sewer overflows are eliminated and combined sewer overflows are controlled, the peak wet weather demands on the treatment plants will increase. The magnitude of the flow increase realized at the POTWs because of CSO and SSO elimination cannot be estimated without system-specific evaluation. Conversely, average flows to the POTWs may decrease with the elimination of sources of I/I through sewer and lateral rehabilitation. Municipalities need to be aware of the locations of relief points and I/I sources within their collection system to plan for potential flow increases created in the collection sewers and contributed to the treatment facility.

There is no simple method available to determine how an individual treatment system will be affected by wet weather or collection system management. There is a need for localized studies to determine the cost-effective mixes of plant expansion and collection system maintenance to eliminate sewer overflows. In the following subsections, treatment plant monitoring and evaluation criteria will be outlined, as well as the different types of limitations that may exist at a treatment plant.

9.4.2 Evaluation Checklist

The following checklist contains monitoring and evaluation steps regarding treatment facilities that can be used to determine if the treatment plant will be a limiting factor because of future wet-weather flow management or others sources resulting in the need for increased treatment capacity.

- ✓ *Representative Data Year (1997)* - Was 1997 a typical operational year at the treatment plant, or were there activities occurring at the treatment plant that would have affected performance (i.e., plant expansion, equipment upgrades, equipment repair for an extended period of time)?
- ✓ *Data Evaluation (Hydraulic and Organic)* - Examine the past 10 years of hydraulic and organic loading data for trends. Has there been a steady increase in hydraulic or organic loading within

the service area? Do these trends coincide with changes in service area population and types of customers over the past 10 years?

- ✓ *Performance During Wet-Weather Conditions* - Historically, has treatment plant performance varied with wet-weather conditions? Was the treatment plant able to meet organic loading permit parameters during periods of hydraulic overload?
- ✓ *Site Constraints* - Is there room for plant expansion? Does more property need to be acquired? Where is the flood plain located? Will emergency access routes and other roadways be maintained or impacted?
- ✓ *Available Power Supply* - Is there enough power capacity available at the existing treatment plant to accommodate future expansion, or will considerations need to be made to supply an additional power source? Where is this additional power source located? If existing equipment is upgraded, will the power requirements change? Does the facility have an emergency generator? Will this emergency generator be adequate to accommodate future electrical demands?
- ✓ *Plant Permit Re-rating* - If the plant could be rated at a higher hydraulic capacity, would it still be possible to meet all other permit parameters?
- ✓ *General Condition of Existing Equipment and Tankage* - How old is the existing plant equipment (i.e., Are pumps or other processing equipment nearing the end of their useful life?)? What is the condition of existing tankage (i.e., Is concrete cracking and spalling)? What is the current peak flow capacity of the main sewage pumps, sludge handling pumps, return activated sludge pumps, etc.? What is the capacity of the sludge handling pumps? How often is the sludge dewatering equipment used? What type of disinfection system is currently in use? Will the receiving stream dictate more stringent effluent requirements in the future (i.e., TRC)?
- ✓ *Operational Modifications* - Can changes in operating strategy improve the efficiency of plant operation?
- ✓ *Flow Diversion or Storage* - Are there alternative locations where excess flow can be diverted either for storage or treatment? Can another treatment plant with excess capacity accept flow? Can in-line storage be added in the collection system to contain excess wet-weather flow until it can be treated at the treatment plant?
- ✓ *Collection System Improvements* - Have sources of infiltration and inflow (I/I) been identified within the service area? Have illicit connections been identified? Do the authority and municipalities within the service area have ordinances in place to enforce action against excess flow and illicit connections? Does the authority or municipalities have permanent flow monitoring set up to monitor flow within the collection system? Will the elimination of relief points in the collection system contribute significant flows to the treatment plant?
- ✓ *Future Growth Potential in Service Area* - Are there private treatment plants or other public treatment plants that could be added to the service area? Is there the potential for an increase in service area population (commercial or domestic) over the next 15 years? Overlay zoning maps, wetland/floodplain maps, street maps, and topography maps. What is the proportion of developed to undeveloped land in the service area? Look at the extended infrastructure limits. Is there an adequate water supply, and are adequate highways available? A lack of water supply will limit development, and a lack of transportation infrastructure will slow development.

- ✓ *Industrial Customer Contribution* - Has the industrial waste component to the treatment plant changed? Is this increase or decrease evident in the industrial components found in the wastewater? Has plant performance fluctuated based on the industrial contribution? Is there a potential increase or decrease in the number of industrial contributors within the service area in the next 15 years?

9.4.3 Structural/Non-Structural Alternatives

Responses to treatment plant limitations can be categorized as structural or non-structural. Structural responses would require physical plant expansion to resolve the limitation. An example of a structural response would be to add treatment capacity through the construction of new tanks. Non-structural responses would not require physical alterations to the treatment plant to resolve the limitation. An example of a non-structural response would be to have the treatment plant permit re-rated to increase the hydraulic treatment limit.

Limitations may require a combination of structural and non-structural responses. Re-rating a treatment plant is a non-structural response that may have structural implications. Will equipment or power supplies need to be upgraded to provide increased capacity or redundancy? Operational changes, such as modifying weir loading rates or detention times to increase treatment capacity may have structural implications. What are the additional operation and maintenance considerations associated with modifying the treatment process? Has the complexity of the treatment process increased? Will equipment modifications need to be made? If structural changes are introduced, the non-structural implications associated with these changes will need to be addressed. What modifications to the NPDES result from the structural changes? How will structural changes affect operations and maintenance requirements?

9.4.4 Treatment System Recommendations

The following recommendations should be followed by the treatment agencies with POTWs currently operating within 75 percent of the hydraulic treatment capacity or have flow projections estimated to exceed the current plant treatment capacity:

- Because the condition of each treatment plant and collection system varies, there is a need for localized studies to decide cost-effective mixes of plant expansion and collection system maintenance to eliminate sewer overflows and provide effective treatment.
- Develop a monitoring program to establish realistic estimates of increased or decreased flow that may be realized at the treatment plant because of pending wet-weather management mandates.
- Evaluate the treatment plant and collection system using the checklist items above to determine if structural or non-structural responses can be implemented.

9.5 On-Lot Problem Areas

9.5.1 Introduction

One-third of Pennsylvania (PA) residences utilize on-lot systems. This includes new development in rural areas, locations waiting for sewers, and areas that will probably never be sewered. In Allegheny County, this also includes areas that are not sewered because of site limitations (homes located at elevations lower than the gravity sewer line). These areas are not specific to one area of the County; they are widely scattered.

The Pennsylvania Sewage Facilities Act (Act 537 of 1966) provides for the planning and regulation of on-lot sewage disposal systems. The Act was updated in December 1994 by Act 149 to:

- Allow the use of newer types of on-lot systems,
- Provide a system whereby Act 537 Plans need not be updated for minor subdivision developments,
- Speed up the process of plan approval at state and local levels,
- Encourage the establishment of multi-municipal local agencies, and
- Encourage delegation of authority previously exercised exclusively by the PaDEP to local agencies that demonstrate the capacity to enforce additional sewage-related regulatory requirements.

Prior to Act 537, homes served by small septic tanks were often connected to wildcat sewers that discharged to gullies and small streams, sewer lines directly into pits or dry wells, or insufficient subsurface drainage areas. Many of these conditions persist and are causing stream and groundwater pollution, ponding of liquid waste materials in backyards, and discharges to road culverts.

In the subsequent subsections, the types of on-lot sewage systems currently accepted under state regulations, the suitability of on-lot sewage treatment in Allegheny County, and the multi-municipal management approach for on-lot treatment systems will be presented.

9.5.2 Available Technologies

Local government officials should have a good understanding of the functions of on-lot sewage disposal systems, the types of systems available, when a particular system can be used, and the limitations of the particular system.

Chapter 73 of the PaDEP's regulations categorizes on-lot systems as conventional, alternative, or experimental and qualifies when the various systems can be used and identifies the installation requirements. The systems classified in Chapter 73 have gone through various design updates and operational trials to prove their suitability for use as on-lot systems.

Conventional Sewage Systems

Conventional sewage systems are the most common type of on-lot treatment in Pennsylvania. These most well-understood and basic forms of on-lot sewage disposal are covered in Chapter 73 of the PA Code. Site location, investigation, and sizing requirements for conventional treatment systems are discussed in Chapter 73. A permit for a conventional sewage system that meets the standards of Chapter 73 can be issued by any sewage enforcement officer. These systems can be permitted for new development or malfunctioning system correction. Examples of conventional sewage systems include:

- Septic Tanks and Absorption Fields,
- Aerobic Treatment Tanks
- Elevated Sand Mound Beds,
- Gravity Beds and Trenches,

- Subsurface Sand Filter Beds and Trenches,
- Individual Residential Spray Irrigation Systems,
- Privies and Holding Tanks, And
- Recycling, Chemical, Incinerating, or Composting Toilets.

Septic tanks are the most common on-lot sewage treatment option exercised in Allegheny County.

Alternate Sewage Systems

Alternate sewage systems are discussed under Chapter 73, Sections 73.3(a) and 73.72 of the PA Code. Section 73.3(a) allows for the use of these systems when applying the "best technical guidance" available for correcting a malfunction or making a repair to an existing system. These systems will only be permitted in for use where it is shown that the proposed system will protect the public health and prevent pollution of the waters in the Commonwealth of PA. Alternate sewage disposal systems can also be used for development if the system meets the siting and construction requirements of the PaDEP regulations. The Alternate and Experimental Systems Guidance document dated September 1999, by the PaDEP lists the alternate systems and technologies that are acceptable under Section 73.72 and the design and construction criteria associated with each system.

Review of alternate sewage systems is performed by the PaDEP or by a sewage enforcement officers qualified by the PaDEP to perform such a review. Each alternate system has specific qualifications that must be met by the SEO to independently review and permit the particular alternate system.

The alternate systems and technologies currently listed under Section 73.72 are:

- *Non-infiltration, Evapotranspiration Bed Contained within a Greenhouse* - Low flow plumbing fixtures are installed in the home, pretreatment of the wastewater is provided by an aerobic treatment tank, and the wastewater is eliminated through the process of evapotranspiration in specially modified passive solar greenhouse beds.
- *Greywater Systems* - Sewage disposal treatment methods for greywater are the same as those used in soil-based on-lot disposal systems (those meeting Chapter 73 standards). By separating the "blackwater" (domestic human waste) from the "greywater" (washwater, etc.), the amount of absorption area may be reduced.
- *Flow Equalization* - Flow equalization can be used at facilities with regular, predictable, fluctuating flows. Tanks, controls, and dosing equipment are used to equalize the peak flows.
- *Leaching Chambers* - Plastic leaching chambers are installed as a substitute for in-ground trenches or beds.
- *Modified Subsurface Sand Filters for Fast Percolation, Shallow Bedrock Sites with No Water Table Present* - The highly specific soil and geologic conditions found in the southeast and northwest regions of the PA are addressed by this system.
- *Shallow Placement Pressure Dosed System* - This system is a modification of the in-ground pressure dosed system used on sites where a limiting zone is identified at depths from 58 to 60 inches.

- *Steep Slope Elevated Sand Mound Beds on Slopes Between 12 and 15 Percent and Percolation Rates of 3 - 30 Minutes per Inch* - Specific siting and construction requirements of this system are listed in the Alternate and Experimental Systems Guidance document.
- *At-Grade System* - Specific siting and construction requirements of this system are listed in the Alternate and Experimental Systems Guidance document.
- *Denitrification Units* - This technology provides reliable denitrification of domestic sewage effluent prior to treatment and disposal using an on-lot system.
- *Alternate Individually Designed Composting Toilet* - This classification is limited to composting devices not approved by the National Sanitation Foundation as a pre-manufactured container with a designated model number identification and other installation requirements that depend upon the application.
- *Peat Moss: Alternate On-lot System Classifications* - These configurations consist of an aerobic or septic tank with a septic solids retainer filter at the outlet of the second chamber or tank followed by the peat filter and an absorption area.
- *Drip Irrigation System* - Only sites containing soil classified morphologically as well drained or moderately well drained are suitable for this application.
- *Alternate Coarse Aggregate* - "Type C" coarse aggregate may be used as an alternate material to construct on-lot sewage disposal systems, if the aggregate meets the standards listed in the Alternate and Experimental Systems Guidance document.

Experimental Sewage Systems

Experimental systems are covered under Chapter 73, Sections 73.3 and 73.71 of the PA Code. According to Section 73.3, Policy, Experimental "Systems shall be permitted only where it is demonstrated that the proposed system will protect public health and prevent pollution of the waters of this Commonwealth." Section 73.71 outlines the minimum site and design standards required for on-lot sewage disposal technologies that are currently in use and being monitored for their performance. The inventory of experimental technologies included in Section 73.71 is not intended to be an all-inclusive list presently or in the future.

Once enough information exists to evaluate the performance of an experimental system, it is either reclassified as an alternate system or technology, or it is deemed unsuccessful and removed from the experimental system inventory.

All systems and methods listed require the PaDEP regional and central office comment. The sewage enforcement officer is required to consider those comments prior to issuing a permit for an experimental system.

Per the Alternate and Experimental Systems Guidance document dated September 1999, by the PaDEP, the current inventory of experimental technologies includes:

- *Elevated Sand Mound Bed Systems on Slopes Over 12 and Up to 15 Percent with Percolation Rates Between 31 and 90 Minutes per Inch* - These systems are to be used for single family residential structures of three bedrooms or less, or commercial facilities with characteristics similar to a residence and not exceeding 400 gallons per day.
- *Controlled Fill* - The controlled fill site is experimental. The on-lot sewage disposal system installed on the controlled fill site cannot be an experimental system. The PaDEP selects the soil conditions

necessary for fill proposals, chooses the sites best suited for a fill proposal, and limits the number of fill placements by region. Controlled fill is not to be considered as "best technical guidance" for repair situations, because of long evaluation periods do not guarantee that the fill site will be suitable.

- *Eljen Type B In-Drain* - This drain is intended to be a replacement for aggregate in a conventional absorption area installation designed to create multiple vertical infiltration layers by promoting the growth of biomat on the biofabric within the In-Drain. The growth of biomat over the biofabric surface area is designed to prevent the formation of a biomat at the system-soil interface, thus extending the functional life of the system area and reducing the required absorption area.
- *Peat Moss Based Systems* - Currently, three options exist. Where soils are less than 20 inches to the limiting zone and a proposal is made to use a peat moss system for a new dwelling, a Clean Streams Law permit will be required.

9.5.3 Alternatives to Onsite Wastewater Treatment Technologies

Invariably, sites exist that are not suitable for any of the treatment technologies currently covered under Chapter 73 of the PA code. Rather, combinations of alternatives may be selected to provide effective sewage treatment and disposal without harming the environment. Some alternative systems that are currently available are discussed below along with their advantages and disadvantages.

Alternative sewer systems use plastic pipe that is smaller in diameter than conventional sewer pipes to collect and transport wastewater to final treatment. Wastewater being transported by alternative sewers receives some type of treatment to remove large solid materials or grind them into smaller particles before being transported. The small-diameter pipes are less expensive and easier to install than conventional sewers, so the community and homeowner save money. Alternative sewer lines do not rely on gravity, so the lines can be buried at shallower depths, follow natural contours, and routed around obstacles such as trees, homes, and ponds. This would result in savings on excavation costs. Extra water entering conventional sewer systems through leaky pipes and manhole covers is not an issue with alternative sewers. However, system components such as septic tanks and pump tanks, and risers must be designed to be watertight. Excess water can reduce the life of the treatment system and increase costs to the community.

There are some disadvantages associated with alternative sewers. Unlike conventional gravity sewers, alternative sewers have components with operation and maintenance considerations. Mechanical components and septic tanks require inspection and have electrical requirements. There is the potential for disruption in service because of a mechanical breakdown or power outage. Additionally, costs associated with onsite components may be directly incurred by the individual homeowner, where there are not any with conventional sewer systems. It is possible for homeowners to pay more for conventional sewers in the long run through higher sewer taxes and fees.

Alternative sewers may be a viable option if:

- Conventional gravity sewers and onsite wastewater treatment technologies have been determined to be inappropriate or too expensive,
- There would be 50 to 100 homes or less per mile of sewer line,
- Homes are located in hilly, rocky, low-lying or very flat areas, or areas with shallow bedrock, a high watertable or other site considerations that would make gravity sewer installation impractical, or
- The area experiences costly problems with existing conventional sewers that are leaking or deteriorating.

Pressure Sewers

A pressure sewer is a small diameter pipe that transports partially treated wastewater, under pressure, to a conventional gravity sewer main or a final treatment facility. The pressure is created by the wastewater being pumped into the pipes at several connections. There are two main types of pressure sewer systems: the septic tank effluent pump (STEP) system and the grinder pump system.

A STEP system consists of a septic tank to pretreat the wastewater and a submersible, low-horsepower sump pump to push the wastewater through the system. Wastewater flows by gravity to the septic tank where the solids and grease settle into separate layers from the partially treated wastewater. The septic tank effluent will be pumped into a pressure sewer. The septic tank effluent is relatively free of solids, so the pressure sewer service line to the main service line can be as small as 1.5 inches in diameter. The main service line connecting to the conventional sewer can be two or three inches in diameter.

In a grinder pump system, there is no septic tank. Pretreatment is performed by the grinder pump itself. The grinder pump sits in a 30-gallon capacity, plastic wet well. Solids in the wastewater are cut up by the grinder pump. All of the wastewater is then pumped into the pressurized line. Grinder pumps are usually one or more horsepower and operate based on water levels in the wet well. It is important that same day emergency service is available for grinder pump installation, because the wet well does not provide much extra room for wastewater if the system malfunctions.

Pressure sewer systems have different operational and maintenance requirements than conventional sewer lines because of electrical requirements. Both types of systems use cleanouts instead of manholes as access points for cleaning and monitoring the lines. With STEP systems, the septic tank solids need to be pumped out periodically.

Small-Diameter Gravity Sewers

Small-diameter gravity sewers (SDGS) systems are a low-cost alternative to conventional sewers. Like conventional sewers, SDGS systems rely on gravity as the main force to collect and transport wastewater to a treatment facility or conventional sewer main. Like STEP systems, SDGS systems utilize septic tanks to remove allow most of the solids to settle out of the household wastewater. Preliminary treatment allows the use of smaller diameter sewer lines than those used in conventional systems, three or four inches versus eight inches. Like other alternative sewer systems, SDGS systems utilize plastic pipe, because it is corrosion resistant and less expensive per linear foot than conventional sewer material. It is also easier to install than conventional sewer pipe.

The SDGS system is often designed to be laid at various grade throughout the system. Because gravity is relied upon to transport the wastewater through the system, no point in the system can be higher in elevation than the starting point. However, variable grades create low points in the system especially in extremely flat areas. Surcharging is used in these cases to alleviate the need for deep excavations. Wastewater backs up in the low points in the pipe until enough pressure is created to force the sewage through this area of pipe. Alternatively, homes that are located at low elevations could use STEP systems to pump effluent from the home up to the SDGS main.

Maintenance requirements for these systems is similar to those of the STEP system because of the septic tanks located at each connection.

Vacuum Sewers

Vacuum sewers use a vacuum suction, created by a central pumping station, to draw down and transport wastewater through the system to final treatment. These sewers can be designed to suit a variety of site conditions, but they have limited capabilities for transporting wastewater uphill. A maximum of 15 to 20 feet head pressure makes these systems suited for areas with flat or gently rolling terrain.

The vacuum in the vacuum sewer is drawn by one or more vacuum pumps located in a central pump station. There are no electrical components at individual connections to the system. The wastewater flow from the house sewer to a holding tank by gravity. The holding tank reaches a certain level, usually three to 10 gallons, a sensor prompts a pneumatic valve to open, and the entire plug of wastewater is suctioned into the lines by the vacuum in the sewer main. The valve stays open long enough to also allow some air to be sucked into the line after the wastewater. The alternate plugs of air and wastewater from many connections then travel through the mains, drawn by the vacuum to the central pump station. At the central pump station, the mains empty into a collection tank. The wastewater is treated nearby or pumped to another facility for treatment.

The initial force of the vacuum taking wastewater from the valve pit is usually strong enough to break up solids, so small diameter pipe can be used for the system service connections (three to four inches). Mains are usually four to 10 inches in diameter. The vacuum keeps the lines clean, so manholes and cleanout points are generally unnecessary.

It should be emphasized that even the best design, location, and soil conditions will not ensure the longevity of an on-lot sewage disposal system unless the system is properly maintained. This is one of several reasons that municipalities should implement sewage management programs.

9.5.4 Suitability to Allegheny County Areas

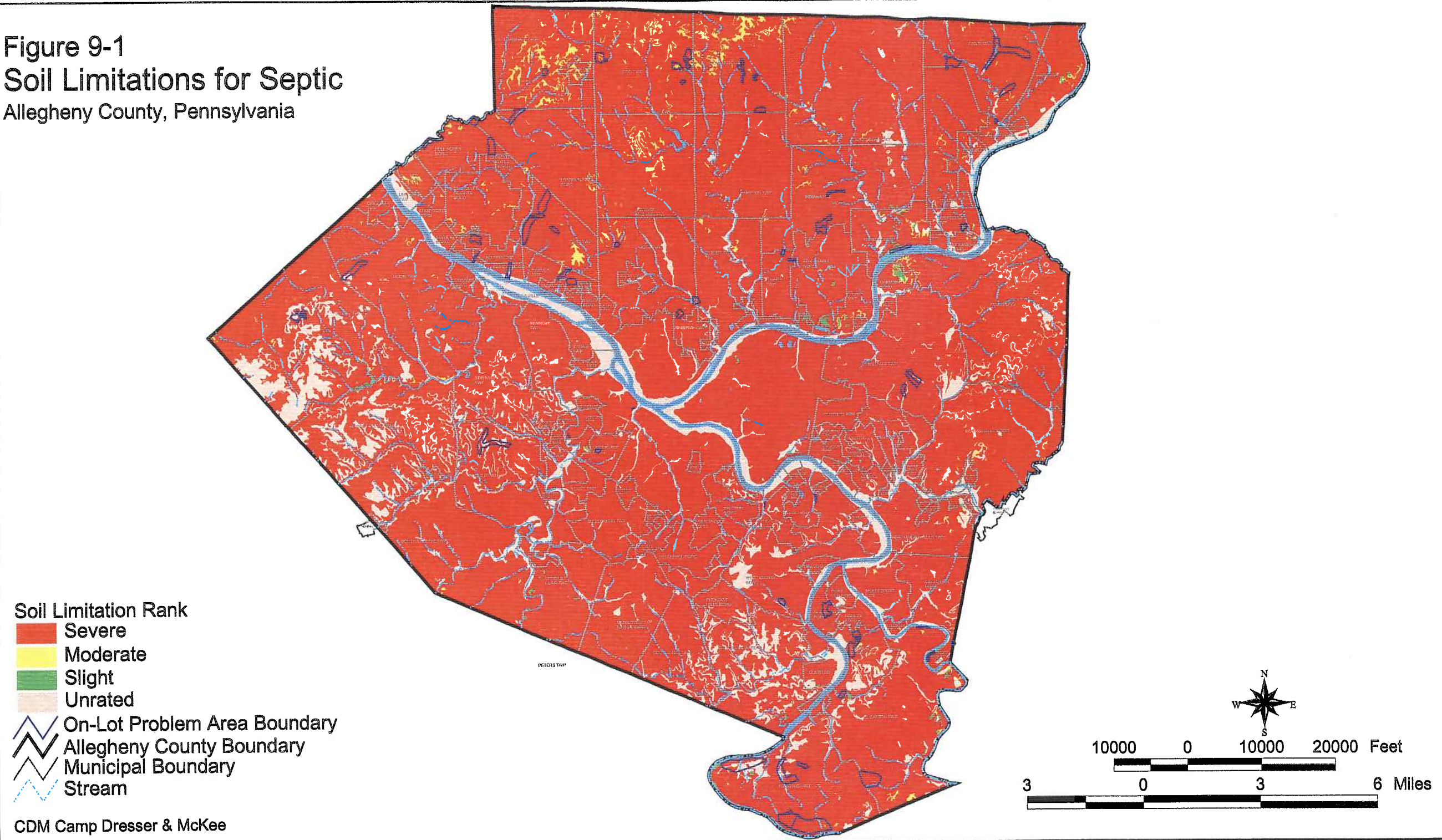
The applicability of the various on-lot technologies depend on a variety of site factors. For this reason, a detailed site evaluation for each on-lot problem area identified in Table 6-1 should be conducted. In this study, soil classification was used to determine the applicability of the various onsite treatment technologies to the on-lot problem areas. The Soil Survey of Allegheny County, Pennsylvania uses soil type to rank the suitability of septic tanks. The soil type takes depth to bedrock, slope, and permeability into account when determining this ranking. Soil type limitations were ranked as slight, moderate, or severe in the Soil Survey. A slight limitation meant that soil properties were generally favorable for the rated use or that limitations were minor and could be easily overcome. A moderate limitation meant that only some soil properties were favorable, but limitations could be overcome or modified by special planning and design. A severe limitation rating meant soil properties were so unfavorable and difficult to correct or overcome that major soil reclamation, special design, or intense maintenance would be required.

Overlaying the soil type limitations for septic tanks and the on-lot problem areas discussed in Section 6, shows which on-lot areas are suitable for conventional septic tank installation. This map is shown as Figure 9-1. Figure 9-1 illustrates that the vast majority of Allegheny County is considered severely limited for the use of conventional septic tanks. Combinations of alternate or experimental technologies with alternative onsite wastewater treatment technologies, or the extension of conventional sewers to on-lot problem areas are viable options to be explored by the municipality or governing authority.

9.5.5 Sewage Management Program Development

According to the Allegheny County Health Department, the cost of a conventional on-lot sewage treatment system can range from \$5,000 to \$20,000. Unfortunately for the individual system owner, the cost of the system is not indicative of its future performance. Proper maintenance practices must be followed to extend

Figure 9-1
Soil Limitations for Septic
Allegheny County, Pennsylvania



the useful life of the on-lot treatment system. Homeowners need to realize that a failing system is not only a problem to their individual property but also the quality of

The formation of a septic tank sewerage district or agency to oversee homeowners using onsite wastewater treatment technologies would be beneficial to Allegheny County. This agency would be responsible for maintaining and monitoring the onsite treatment systems throughout the County. A multi-municipal local agency can also include municipalities in neighboring counties. There are several reasons why such a program would be beneficial to Allegheny County or a multi-municipal local agency:

- A multi-municipal local management agency is eligible for up to 85 percent reimbursement of costs associated with permitting and sewage management programs versus 50 percent for non-multi-municipal agencies. It should be noted that certain eligibility requirements, which are outlined in the Sewage Facilities Act 537, must be met.
- Formation of an authority would provide a revenue generation source. Generating revenue now would lighten the burden to individual homeowners in the future if there are plans to connect to a central treatment system or for some other capital improvement project regarding their sewage treatment.
- The authority would be responsible for ensuring that all onsite systems are maintained.
- Homeowners have someone to contact directly when there is a problem with their onsite system.
- The authority would serve to educate homeowners and the community about onsite systems.

The following basic steps need to be taken to establish a multi-municipal local agency:

- Each member municipality must adopt the ordinance establishing the multi-municipal local agency.
- A board made up of representatives from the member municipalities must be created.
- The board must adopt bylaws establishing procedures to take actions, fill vacancies, conduct hearings, and other operating procedures.
- The board or subcommittee must draft day-to-day operating and personnel policies to be adopted by the board. The program activities to be done by the agency need to be determined. These activities may include: inventory of systems, educational programs, inspection performance, inspection and maintenance notification to on-lot system owners, reporting program for inspection and maintenance results, certification for the workforce carrying out inspection and maintenance services, and water quality monitoring.
- Appropriate staff must be hired to implement the Act 537 Program. This will include at least one sewage enforcement officer, one alternate sewage enforcement officer, and the necessary support staff. Alternatively, COG responsibilities can be expanded to include Act 37 administration.
- Develop a financial plan once the operational plan is complete.
- Complete tasks needed to implement the program, such as revise regulations and policies. This includes adoption of ordinances establishing fees for services provided through the multi-municipal agency and mandating inspections and other maintenance practices. Standardized inspection and report forms should be established regardless of which maintenance program options are selected.
- Establish procedures to evaluate the monitoring program for the short-term and long-term.

Communities need to be educated so they can understand how their onsite treatment system operates and why proper maintenance of this system is so important. At a minimum and as the first step, sewage management programs should have an ongoing educational program for homeowners with on-lot sewage disposal systems. In addition, the local agency should have understandable, written procedures with fee schedules for anyone seeking to obtain a permit for a new on-lot system. There are several agencies that provide will assistance and information to communities and maintenance management personnel, including:

- National Small Flows Clearinghouse (NSFC). The NSFC offers a variety of technical assistance and fee and low-cost information and materials about wastewater technologies for small communities. The NSFC can be reached at 1-800-624-8301 or on line at <http://www.estd.wvu.edu/NSFC>
- Allegheny County Health Department (ACHD). The ACHD should be contacted for information about local regulations and requirements. The ACHD can be reached at 412-578-8040.
- Extension Services Offices. U.S. Department of Agriculture Extension Service offices such as the Penn State Extension, provide a variety of services and assistance to small communities. Contact NSFC for a local office number or the U.S. Department of Agriculture at 202-720-3377.
- Rural Community Assistance Program. RCAP is a network of nonprofit organizations that provide assistance to rural and low-income communities concerning most aspects of wastewater projects. The national RCAP office can be reached at 703-771-8636.
- National Rural Water Association (NRWA). NRWA is a nonprofit association organized to represent small water and wastewater utilities in each state and to meet their needs with operation, maintenance, management, funding, and political concerns. NRWA can be reached on line at <http://www.NRWA.org> The state organization can be reached at 1-800-653-PRWA or on line at <http://www.prwa.com>

An example of a multi-municipal local agency on-lot sewage management program in PA is the Lake Wynonah Municipal Authority. South Manheim and Wayne Townships formed the Authority to address a specific problem around the Lake Wynonah Development. The home development was started in the early 1970's with the intention of providing central sewage collection for sewage treatment. It was later deemed that a centralized treatment system was too costly, and new homes began to use conventional on-lot systems. Homes built prior to the decision to eliminate the central treatment system were developed with holding tanks. the PaDEP entered into an agreement with the Townships allowing the systems to stay in place if the Townships manage both the existing holding tanks and on-lot systems.

The Authority was formed and equipped with personnel and pumping trucks to inspect and pump sewage holding tanks and on-lot system septic tanks. The Authority pumps almost 200 holding tanks every four weeks at a charge of \$65 per pumping, and provides tank inspection every three years at a charge of \$60. The 600 to 650 septic tanks are pumped and inspected every three years at a rate of \$150 per tank. The disposal field is also inspected then.

The Township sewage enforcement officer enforces repairs or the installation of on-lot sewage systems.

Several other management program examples can be found in [A Municipal Official's Guide to Managing On-lot Sewage Disposal Systems](#), by the Pennsylvania State Association of Township Supervisors, 1998. The [Guidance Handbook for On-Site Sewage System Monitoring Programs in Washington State](#), published by the Washington State Department of Health, April 1996 is a good source of information regarding the establishment of on-site sewage management and monitoring programs, as well as providing several examples of programs in place throughout the country. Example ordinances and inspection report forms are included with several example programs.

9.6 County-Wide Strategies

The responsibilities for wastewater management in Allegheny County are widely diffused, involving the 130 municipalities, 35 treatment agencies, additional municipal collection authorities, county regulation through the Health Department, state regulation through PaDEP and federal regulation through USEPA. The political and service area boundaries of this disparate group overlap 180 watersheds.⁸ Facing Allegheny County are complex, expensive and controversial regulatory mandates, and ultimately more important, the need to reinvest in our sewer systems. This reinvestment is necessary to preserve the economic viability of our older, built-up areas and to provide for the capacities of future growth. A failure to deal with our wastewater system needs rationally, cooperatively and creatively may, in the short term, lead to a loss of local control over the scope, schedule and cost of fixing the sewers. In the long term, the public health, environmental quality and economic viability of Allegheny County will be threatened.

9.6.1 Strategies in Other Regions

Other regions in the United States are developing county-wide and regional approaches to solving similar problems. Three examples from similarly sized metropolitan areas are provided as illustrations of the types of efforts that are being developed.

King County, Washington

Forty years ago, concerned citizens of King County, Washington (Seattle metropolitan area) rallied and formed a grassroots movement to clean up Lake Washington that had become grossly polluted. This effort led to the consolidation and expansion of a county-wide wastewater management agency. The King County Department of Natural Resources (Seattle, Washington) provides wastewater conveyance and treatment services to 32 municipal agencies with a combined service population of 1.3 million. Average daily wastewater generation is about 200 million gallons. Thus, the Department's service population and flows are analogous to those of ALCOSAN.

King County currently is implementing a 40 year, \$1 billion *Regional Wastewater Service Plan* involving treatment, conveyance, CSO and SSO reduction and water reuse components. The Plan is the result of an extensive stakeholder process involving the service area municipalities and other groups. The Plan includes the establishment of a cost sharing program with the local agencies to reduce inflow and infiltration and the phasing in of a surcharge for excessive inflow and infiltration by the year 2010.

The Plan will be financed through revenue bonds. Bonds will be sold annually as needed to raise projected program needs for the year. Wholesale rates (not including local municipal collection system costs) are projected to be approximately \$240 annually (1998 dollars).

Wayne County (Detroit), Michigan

The Rouge River National Wet Weather Demonstration Project (Rouge Project) is a comprehensive watershed-wide program that is providing solutions to other urban watersheds throughout the country on how to restore a polluted urban waterway. This cooperative watershed management effort between federal, state and local agencies is supported by multi-year federal grants from the U.S. Environmental Protection Agency and additional funding from local communities. This grant is being managed by Wayne County.

The Demonstration Project is intended to identify, design, and implement wet weather control strategies that will address wet weather pollution problems throughout the Rouge River Watershed. The Rouge River watershed comprises 467 square miles, including parts of 3 counties, 48 municipalities and 1.5 million people. The Wayne County Department of the Environment is spearheading the program by providing participating municipalities with USEPA grants and provides technical and institutional assistance and leadership to the municipalities. Municipalities have implemented 17 CSO projects to date. Approximately \$288 million in Federal funding from Congressional appropriations has been channeled through USEPA.

Massachusetts Water Resources Authority

The Massachusetts Water Resource Authority (MWRA) wastewater treatment plants receive flow from 43 municipalities. The collector system encompasses 230 miles of MWRA and 5,400 miles of municipal sewers. Since 1992, the MWRA provided more than \$50 million to fund an Inflow/Infiltration Local Financial Assistance Program. The Program provides 25% grants and 75% interest free loans for municipal sewer rehabilitation projects. Project funding is allocated among the municipalities based upon their respective annual sewer assessment. Funding was provided in part by a USEPA grant to MWRA that was contingent upon specified inflow and infiltration removal levels within the system.

9.6.2 Allegheny County Strategies

Addressing the wastewater needs of Allegheny County will require leadership, vision and a consensus strategy. Components of this strategy include:

- A consensus framework and schedule for regulatory compliance between the municipalities, the treatment authorities, ACHD, PaDEP and USEPA.
- Intermunicipal watershed-based cooperation and resource sharing towards regulatory requirements (e.g., flow monitoring), sewer maintenance and sewer rehabilitation.
- Intermunicipal watershed based cooperation towards flow and capacity allocations analogous to the emissions trading provisions of the Clean Air Act.
- Municipal acceptance of cost allocation formulas that account for the costs of wet weather flow management.
- A means to an intermunicipal prioritizations of sewer rehabilitation needs based on the physical condition of municipal systems, current or potential water quality impacts, and the opportunity to achieve economies of scale (or other consensus priority factors).
- A long term (~ 50 years) commitment to sewer rehabilitation and reconstruction that will provide future generations with adequate and reliable wastewater conveyance capacities and manageable infrastructure costs.
- An educational campaign to foster a public understanding for the need to reinvest in the sewer systems. There is limited public understanding of the scope and necessity of addressing the wastewater systems beyond perhaps a vague awareness of an external regulatory mandate.
- A long term financing mechanism.

There needs to be a critical mass of the stakeholders in wastewater management who will work together in envisioning, discussing and evolving this county-wide consensus wastewater management strategy.

⁸ As identified by the United States Geological Survey.

The stakeholders include, but are not necessarily limited to:

- The municipalities and municipal authorities,
- The conveyance and treatment authorities such as ALCOSAN,
- The Councils of Government,
- Allegheny County and its Departments of Health and Economic Development,
- The Three Rivers Wet Weather Demonstration Program,
- The Allegheny Conference on Community Development,
- The Pennsylvania Economy League,
- Southwest Pennsylvania Commission,
- Economic development agencies,
- Environmental and Citizens Groups,
- Philanthropic Foundations, and
- The Universities.

A number of forums already exist, including the Southwest Pennsylvania Commission and the Three Rivers Wet Weather Demonstration Program. Private groups such as the Allegheny Conference are also actively considering wastewater management issues.

Over time, and with institutional leadership and nominal resources, the efforts of these groups could evolve into a detailed *Comprehensive Wastewater Workplan and Implementation Schedule*. The workplan would specify institutional responsibilities, recommend legislative needs, prioritize investment, and alternative financing mechanisms to be implemented, along with a detailed implementation schedule. The workplan would document the evolving consensus strategy for addressing wastewater needs in Allegheny County and could serve as a basis for negotiations with the regulatory agencies, with the goal of preserving local control and realistic time frames.

For progress to be made, institutional leadership and structure needs to emerge to spearhead the efforts of developing a consensus strategy and workplan. For example, the 3 Rivers Wet Weather Demonstration program and the Allegheny Conference could form a partnership to provide such leadership and structure. The 3 Rivers Wet Weather could provide institutional leadership and technical support and the Allegheny Conference could provide research capabilities and their experience at bringing attention and action on important issues. This institutional leader would provide focus and resources to work with the stakeholder groups. In addition, the institutional leadership could be given credibility and moral authority to lead through a public show of support for its endeavors by the County Council and County Executive.

Appendix A

Treatment Agency Profiles

In this appendix, the thirty-five municipalities and municipal authorities that provide wastewater treatment within Allegheny County are profiled. These descriptions include maps displaying the approximate locations of areas served, collection and transport sewerage alignments, pump stations and wastewater treatment plants. Information as to the type and size of treatment facilities, compliance with National Discharge Elimination System (NPDES) permit limits and other Pennsylvania Clean Streams Law compliance issues is provided.

Projected service populations to the year 2015 are provided in the profiles based upon current service populations and Southwestern Pennsylvania Commission (SPC) *Cycle 5* population projections for the contributing municipalities. Using reported plant hydraulic and organic loading histories and the projected populations, projected average day treatment plant capacity requirements are estimated for the year 2015. The flow projections do not account for reductions in peak and average plant flows that may result from ongoing municipal sewer rehabilitation programs or the installation of wet weather detention basins.

Brief descriptions of the information displayed in the profiles and the sources of information provided in the capsule descriptions are provided below.

Narrative Overview

Narrative overviews of the treatment agencies are provided. These include a description of the institutional nature of each treatment agency (e.g., municipal authority); along with the institutional relationships between the treatment agency and the municipal collection sewer systems. A brief history of the agency and its treatment plant(s) and service area is provided, along with highlights of the operating practices of the system. The type, ownership and operating practices of the collector sewer systems within each treatment plant's service area are described. The current and projected populations are provided along with a comment on the adequacy of the treatment plant(s) based upon the projected population.

Contributing Municipalities and Collection Sewer Types

The portions of municipalities served by each treatment plant were identified through municipal collection system maps, review of Chapter 94 reports and on-site interviews and site visits. The collection system types (combined, sanitary, both) were similarly based on reviews of the collection system maps and document reviews.

Treatment Process Summary

The process treatment equipment used at each treatment plant are provided in a summary table. This information was obtained through reviews of documents such as the Chapter 94 reports, PaDEP Part II construction permit applications, Act 537 Plans and on-site interviews.

Service Area Population

Current (1997) and design year (2015) populations are provided for each treatment plant. Unless otherwise noted, the current populations were taken from the treatment agencies' most recent (1997) Chapter 94 reports. Using the Chapter 94 service area populations as the base year, population projections were prepared to the year 2015 using the municipal growth rates presented by the Southwestern Pennsylvania Commission (SPC) *Cycle V Forecasts* (1994). Weighted average population growth rates were estimated for each treatment plant using the *Cycle V* projections. These growth rates were applied to the current populations to derive estimated service populations in 2015.

Service Area Mapping

Service area maps are provided for each treatment agency. These maps show the approximate extent of wastewater collection services within the municipalities contributing to the treatment agency. The general alignment of municipal trunk and interceptor sewers and force mains are shown. This information is intended to provide an understanding of the inter-municipal relationships between the treatment agencies and the contributing municipalities only. Municipal collection sewer systems are also shown for those municipalities for whom sewer maps were available. The service area maps also show the location of publicly owned wastewater treatment plants and pump stations.

The maps are based on the Allegheny County Health Department's geographic information system (GIS) planimetric geographically registered base maps. Sewer system information was provided by the ACHD from municipalities participating in the GIS Data Exchange Program, from the municipalities or municipal authorities, or by the digitization of paper maps. The ACHD base maps include USGS topographic features. The topography and building footprints are shown on the service area maps to provide geographical context.

Sewer Use Ordinances

The key provisions of sewer use ordinances relating to wet weather flow management and protection of sewer and treatment plant capacities are summarized for the municipalities contributing to each treatment plant. This information was derived from reviews of the ordinances and on-site interviews with municipal and authority officials.

Financial Information

Annual wastewater system revenues and costs are provided for each wastewater treatment authority or municipality with a wastewater treatment plant. Surpluses and debt service coverage ratios are also provided.¹ This information was compiled from annual financial documents provided by the authorities or municipalities, e.g., engineers' reports, budgets, audit reports, etc. The data reflect the most recent year for which data are available.

Discharge Permit and Plant Performance Information

The National Pollution Discharge Elimination System (NPDES) permit limits are provided for each treatment plant. Annual performance data are also provided for each treatment plant as are comparisons of permit limits and plant performance for the key parameters of hydraulic loading (expressed in million gallons per day), organic loading (expressed in pounds per day of carbonaceous biochemical oxygen demand (CBOD₅)) and pathogen removal (expressed in units of coliform bacteria per 100 milliliters of water). These three parameters are most indicative of wastewater plant treatment capacities. Data points that represent an exceedance of the NPDES permit are indicated with an "E". Information was obtained from Chapter 94 reports and monthly Discharge Monitoring Reports (DMRs) filed with the Allegheny County Health Department.

Treatment Plant and Pump Station Type and Capacities

Treatment plant treatment types and design capacities as well as pump stations contributing to each treatment plant are summarized. Pump station peak capacities and average daily flows are provided. In addition, the

¹ Annual debt service divided by difference between the total revenues minus operation and maintenance costs.

pump station owners and the operators are identified. This information came from site visits and interviews and reviews of the Chapter 94 reports.

Sewer Maintenance Information

Key aspects of municipal collection sewer system maintenance are summarized, including ownership, who has responsibility for maintaining the system and maintenance frequency. The existence of ongoing municipal inflow and infiltration (I/I) removal programs is indicated as is the existence of ongoing municipal in-system flow monitoring programs related to I/I controls. This information was obtained from municipal interviews and site visits, and the Chapter 94 reports.

Intermunicipal Service Agreements

Key provisions of the intermunicipal service agreements between the treating authority or municipality and the subscribing municipalities are summarized. Included are the enactment and expiration dates, provisions for flow limits, provisions for surcharges for excessive flows, sampling provisions, flow monitoring provisions, dispute resolution procedures and the basis for cost allocation between the municipalities. The availability of these provisions are considered important to allow for the efficient and equitable allocation of costs and responsibilities between municipalities. Intermunicipal service agreements were obtained and reviewed where available. This was augmented by the site interviews with the municipal and treatment authority officials. This table is omitted for treatment agencies with no intermunicipal agreements.

Aleppo Township Authority

The Aleppo Township Authority (ATA) is a water and sewage authority serving approximately 314 customers in Aleppo Township and a small portion of Sewickley Heights. Aleppo Township residents make up the five member authority board. Two treatment facilities presently serve a portion of the community. The remainder of the Township is served by on-lot sewage disposal systems.

The Sewickley Heights Manor Wastewater Treatment Plant, serving approximately 236 customers, was constructed in 1974 to treat sewage flows from a condominium complex located within Aleppo Township. The original facility was designed as an extended aeration facility capable of treating 0.042 mgd. Due to an increase in the number of customers served, the facility was expanded in 1979. The plant is now capable of treating 0.084 mgd, meeting tertiary treatment requirements. The plant is permitted for an organic loading of 205 lb CBOD₅/day. The following unit processes are used: communitation with bypass barscreen, aeration, settling, sand filtration, and disinfection. The average monthly flow to the plant in 1997 was 0.045 mgd. The average monthly organic loading was 108 lb CBOD₅/day.

The Sewickley Heights Manor service area population of approximately 375 is projected to increase to approximately 450 by 2015. Based on the 2015 population increase, the hydraulic and organic loadings to the treatment plant are expected to increase by 20 percent. The hydraulic loading is projected to increase to approximately 0.054 mgd, and the organic loading is projected to increase to approximately 130 lb CBOD₅/day. The hydraulic and organic loading capacities of the plant appear to be adequate for projected average daily flow and loading conditions in 2015.

The I-79 North Wastewater Treatment Plant, serving approximately 78 customers, was constructed in 1978 as an extended aeration facility capable of treating 0.05 mgd. The plant is permitted for an organic loading of 205 lb CBOD₅/day. This facility was designed to treat domestic sewage flows from the I-79 North Industrial Park complex and the Valley Care Nursing Home. The following unit processes are used: communitation with bypass barscreen, aeration, settling, sand filtration, and disinfection. The average monthly flow to the plant in 1997 was 0.018 mgd. The average monthly organic loading was 30 lb CBOD₅/day.

Several process operations upsets occurred at the I-79 North STP during the past several years. The Authority purchased a composite sampler to investigate and identify the source or sources causing these upsets. HRP Metals Corporation (silver reclamation) and Xerox Corporation were located in the same building in the I-79 North Industrial Park, which was identified as the source of prohibited industrial waste discharges. The Authority's solicitor notified the building owner and both occupants of the illegal discharges. Additionally, the occupants were notified to cease all such discharges. Under Section 7.07 of the Rules and Regulations Governing Sewage Service for the Authority, the Authority "reserves the right to prohibit connections to the system or to enforce discontinuance of the use of the sewerage system for deleterious industrial wastes, or to require pre-treatment of such wastes in order to prevent damage to or adverse effect upon the system."

Allegedly, the occupants ceased the discharge of non-domestic waste to the I-79N STP, however occasional organic overload conditions have resulted. Both corporations denied discharging non-domestic waste to the sewage system. As of 1998, HRP Metals Corporation is the only building tenant. The Authority will now be able to identify which tenant was the source of illegal discharges and take appropriate measures to assure that the discharge has ended.

The I-79 North service area population of approximately 205 is projected to increase to approximately 260 by 2015. Based on the 2015 population increase, the hydraulic and organic loadings to the treatment plant are expected to increase by 20 percent. The hydraulic loading is projected to increase to approximately 0.022 mgd, and the organic loading is projected to increase to approximately 40 lb CBOD₅/day. The hydraulic and organic loading capacities of the plant appear to be adequate for projected average daily flow and loading conditions in 2015.

There are two certified operators from Robinson Township who alternate workdays to operate the sewage treatment plants. A routine maintenance schedule is followed. Both sewer collection systems are sanitary only. Local forces, as necessary, perform all routine maintenance and cleaning. The ATA owns a composite sampler to investigate and identify sources of prohibitive waste discharges. In addition, the ATA owns a portable flow monitor to study flows in various areas of the watershed. Both sewer systems are in good condition with adequate capacity to provide for future development within the drainage basin. There are no pump stations or other package plants located in Aleppo Township.

Aleppo Township Authority

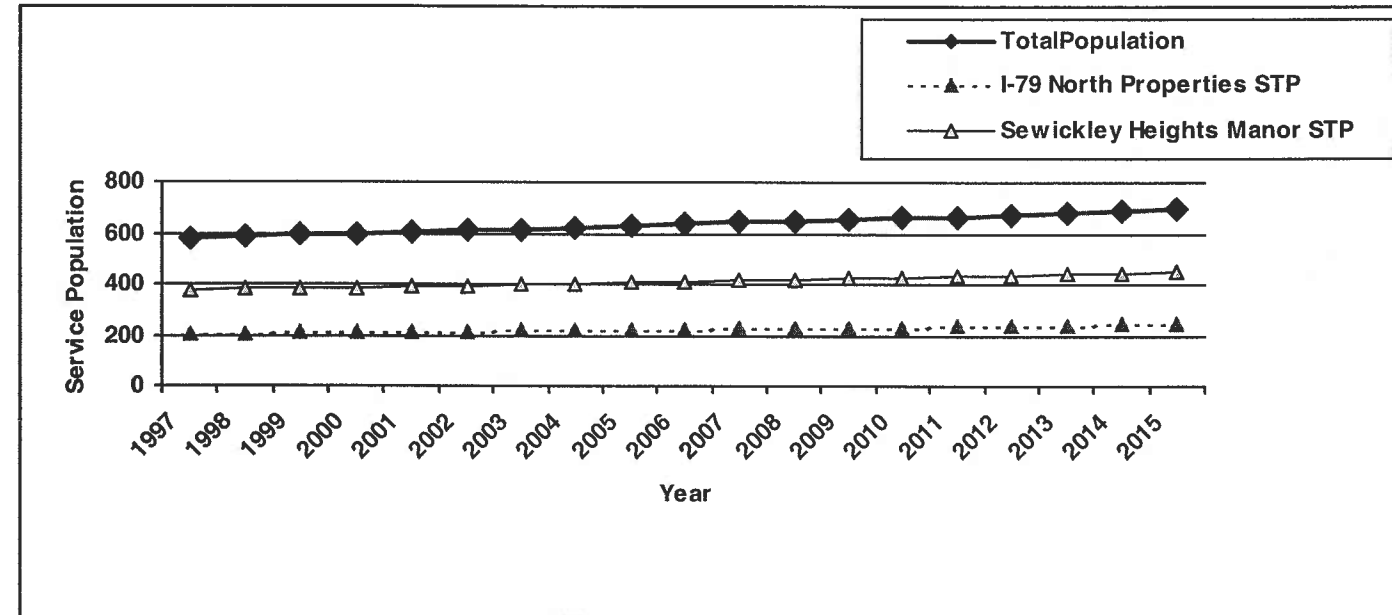
Service Area Summary

POTW Name	1997 Service Population	2015 Service Population	Municipality	Type Of Sewer System
I-79 North Properties STP	205	247	Aleppo Township	Separate
Sewickley Heights Manor STP	375	449	Aleppo Township Sewickley Heights Borough	Separate

Treatment Process Summary

POTW Name	Equalization	Screening	Comminution	Grit Removal	Prechlorination	Primary Treatment	Activated Sludge	Extended Aeration	Contact Stabilization	Trickling Filter	Disinfection	Dechlorination	Filtration	Regeneration	Thickening	Aerobic Digestion	Anaerobic Digestion	Lime Stabilization	Composting	Thermal Processing	Dewatering	Land Application	Landfill	Incineration	Haul to other STP	Odor Control
I-79 North Properties STP		■	■			■	■				■															■
Sewickley Heights Manor STP		■	■			■	■				■			■												■

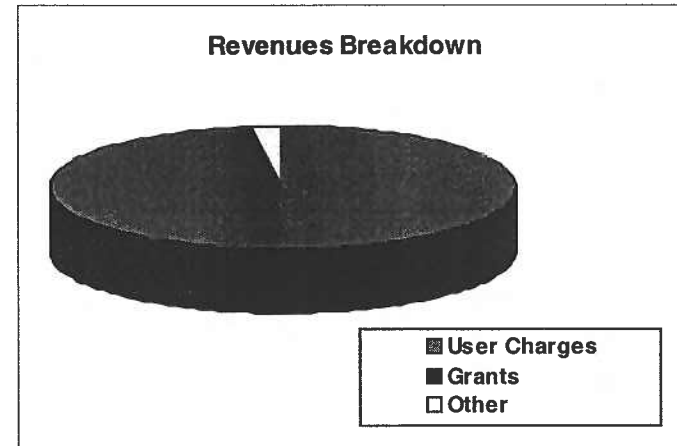
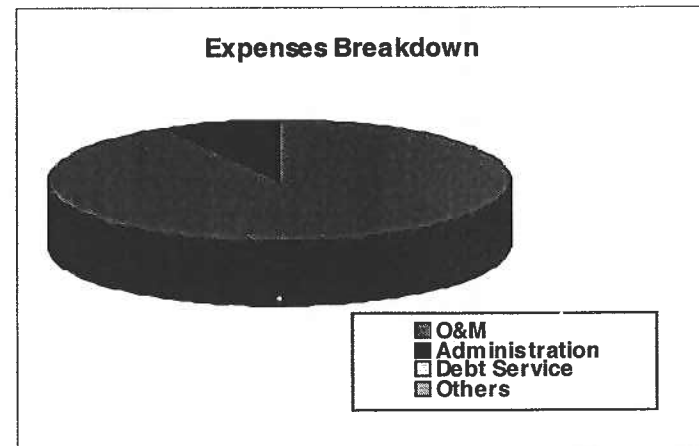
Service Population Projections



Aleppo Township Authority

Sewer Use Ordinances

Municipality	Corrective Action Plan	Grease Trap Requirement	Industrial Pretreatment Program	Illicit Connection Inspection At Sale	Surcharge
Aleppo Township	No	Yes	No	Yes	
Sewickley Heights Borough					

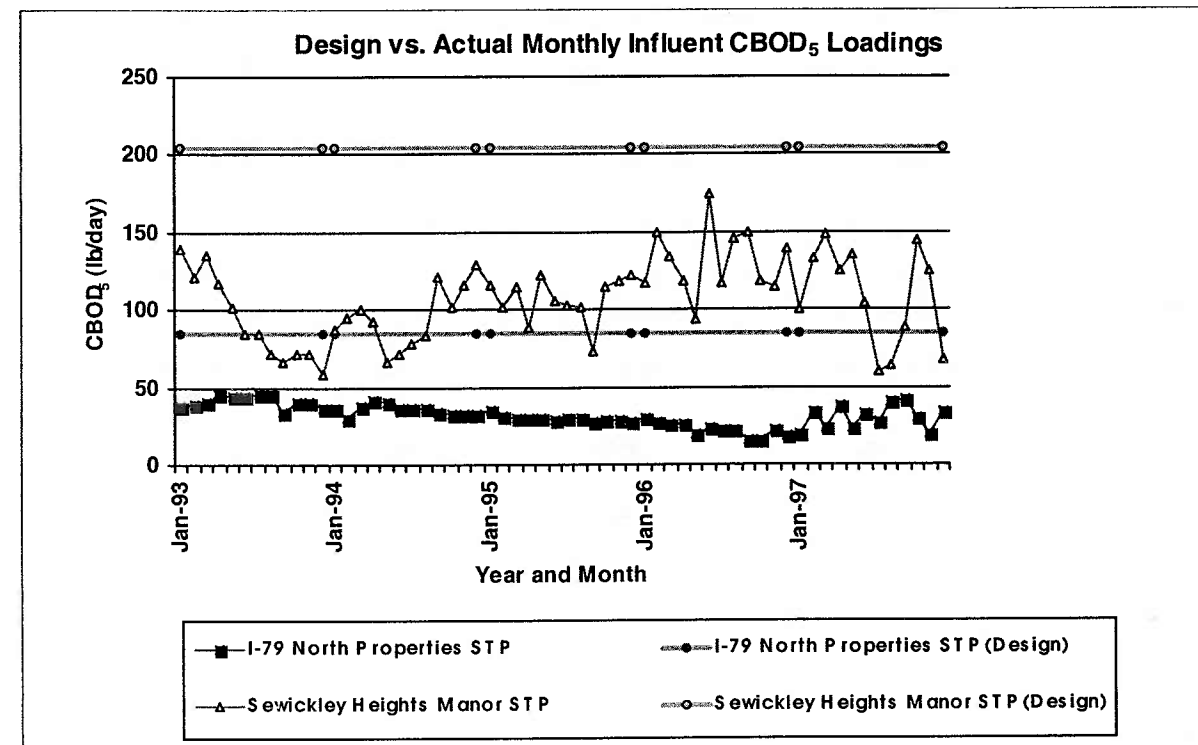
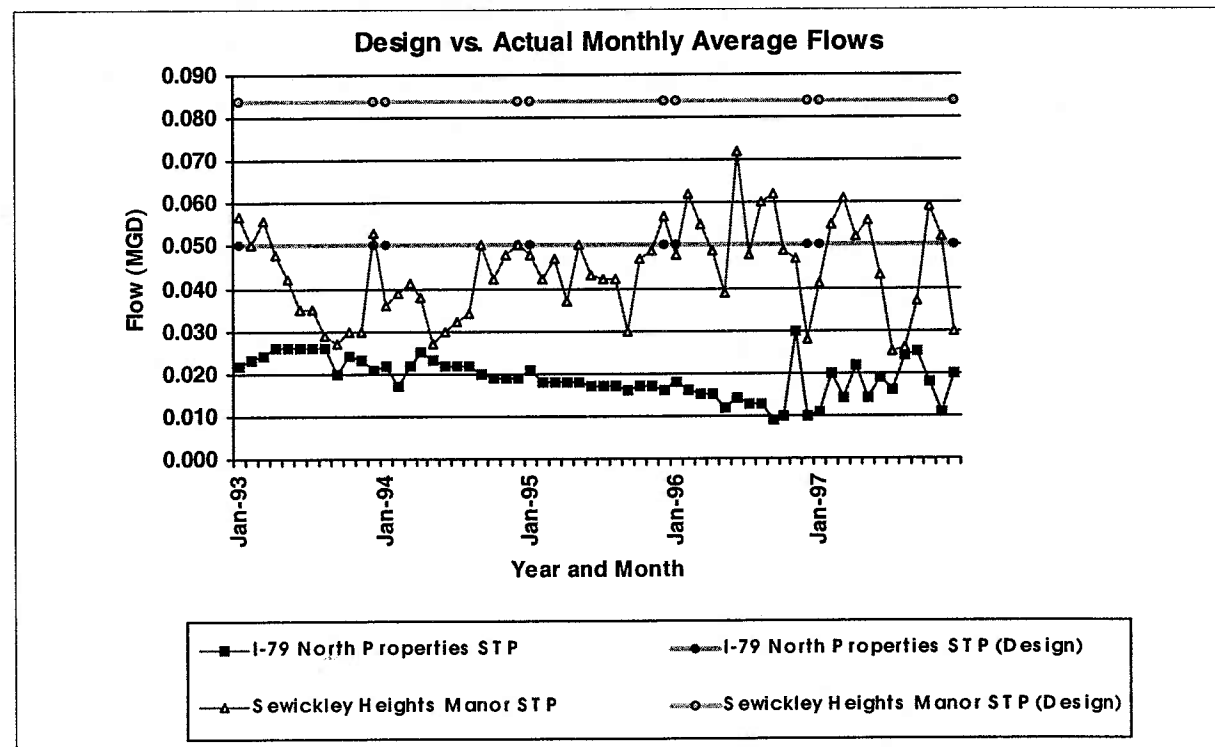


Financial Information

REVENUES		
User Charges:		\$83,265
Grants:		\$0
Other:		\$2,006
Total Revenues		\$85,271
EXPENSES		
Operations and Maintenance		\$76,334
Administration:		\$6,692
Debt Service:		\$0
Other:		\$0
Total Expenses		\$83,026
Surplus(Deficit):		\$2,245
Debt Service Coverage Ratio		
YEAR:	1997	Actual/Budgeted
Information Source:		
Revenues	Allepo Twp. Annual Report (Bankson Eng.)	Actual
Expenses	Allepo Twp. Annual Report (Bankson Eng.)	Actual

Aleppo Township Authority

Plant Loading Summary



Aleppo Township Authority

Collection System Facilities

TREATMENT PLANT	Design Capacity (MGD)	Biological Treatment	Owner	Operator
I-79 North Properties STP	0.05	Extended Aeration	ATA	Contractor

Pump Station	Peak Capacity	Avg Daily Flow	Owner	Operator
None				

Equalization Basin	Capacity	Location	Owner	Operator
None				

TREATMENT PLANT	Design Capacity (MGD)	Biological Treatment	Owner	Operator
Sewickley Heights Manor STP	0.084	Extended Aeration	ATA	Contractor

Pump Station	Peak Capacity	Avg Daily Flow	Owner	Operator
None				

Equalization Basin	Capacity	Location	Owner	Operator
None				

Sewer Maintenance Information

<i>Service Community</i>	<i>Maintained By:</i>	<i>Mainten. Done:</i>	<i>Equipment Source</i>	<i>I/I Removal</i>	<i>I/I Flow Monitor</i>
Aleppo Township	Local Forces	As-needed	Township, Contractor	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Sewickley Heights Borough	Local Forces	As-needed	Township, Contractor	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Aleppo Township Authority

Intermunicipal Agreements

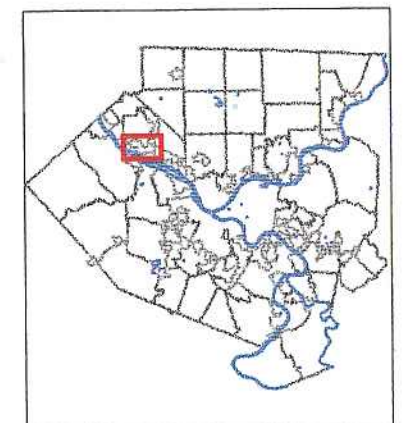
Agreement With	Date Enacted	Agreement Description	Expiration Date	Flow Limits (mgd)	Rate and Surcharge Provisions	Sampling Provisions	Flow Monitoring Provisions	Dispute Resol. Procedure	Basis of Cost Allocation
79 North Properties, Inc., Aleppo Township, Valley Care Association	11/09/82	Valley Care is permitted to utilize the sewage treatment plant facilities and will pay a share of the operating deficits of the sewage treatment plant billed to 79 North by the Authority		Valley Care is limited to a maximum of 15,000 gpd effluent	\$2,667 per 1,000 gpd assessed for the additional capacity required	None		None	Valley Care will pay a share of the operating deficits of the treatment plant billed periodically to 79 North by the Authority, proportionate to the usage of Valley Care, but in no event to exceed 30 percent

Aleppo Township Authority

Water Pollution Control Facilities Service Areas and Collection Systems

Allegheny County
Department of Economic Development

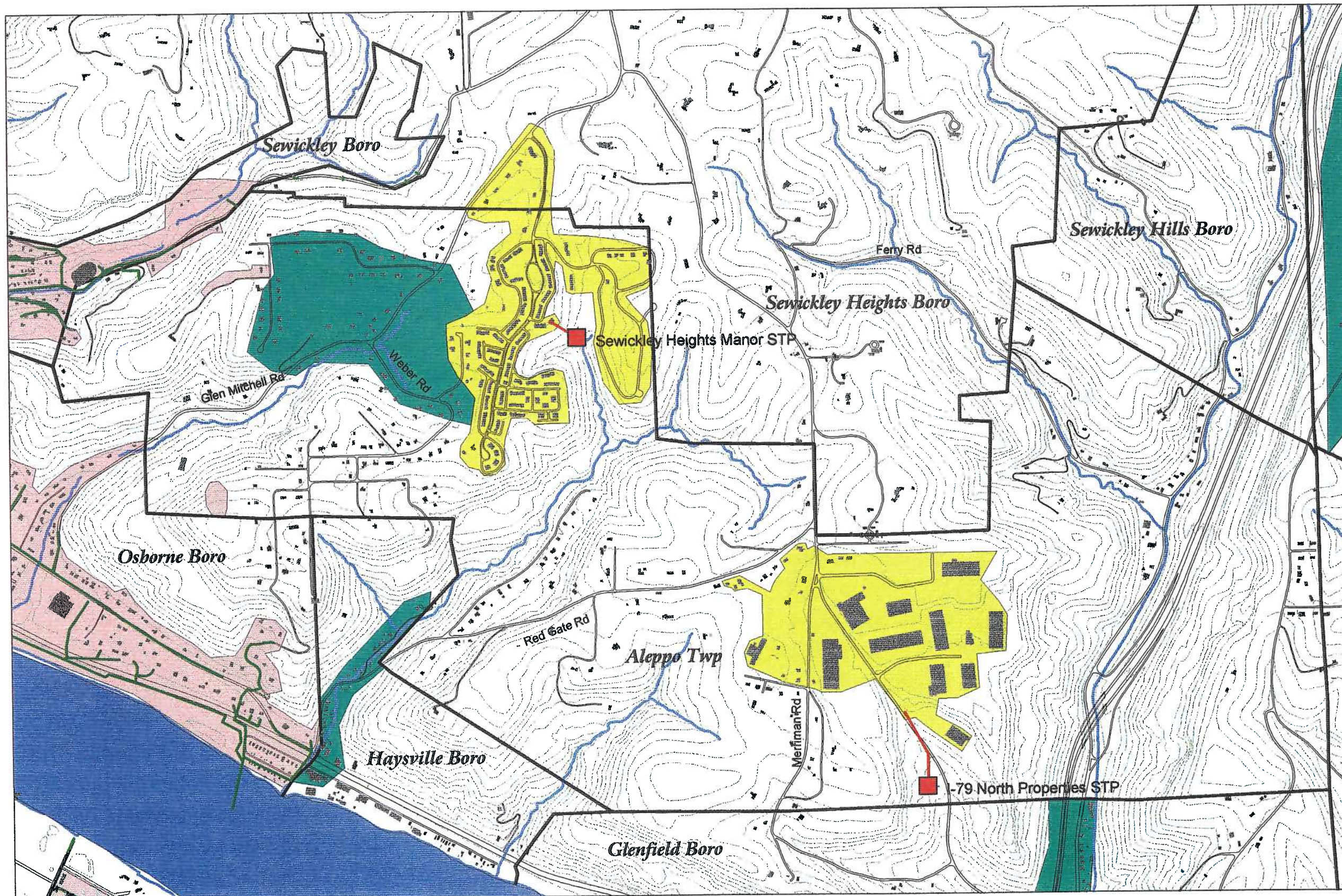
Allegheny County, PA



300 0 300 600 Feet

- Public Treatment Facility
- Existing STP
- Municipal Boundary
- Major Road
- Contour
- Hydrologic Feature
- Building
- Collection System
- Separate
- On-Lot Problem Area
- Pipe Type
- Collector
- Force Main
- Trunk
- Neighboring Service Area
- Neighboring Collection System
- Not Field Verified

Source: Aleppo Twp. Water Distribution Map



Allegheny County Sanitary Authority

The Allegheny County Sanitary Authority (ALCOSAN) provides interceptor sewer service and wastewater treatment to 82 municipalities. Of these, the Cavittsville section of North Huntingdon Township, Penn Township and Trafford Borough are within Westmoreland County. Peters Township and portions of McDonald Borough are within Washington County. The service area boundary encompasses 311 square miles of Allegheny County. The total population served by ALCOSAN is approximately 879,000 (1990 data) through approximately 300,000 customer connections. Construction of municipal sewers in Allegheny County began in the 1800s. The municipal trunk sewers were constructed to follow the natural contours and discharged directly to receiving waters. In 1945, the State Department of Health, under authority of the Clean Streams Law, ordered municipalities and industries to stop pollution of area waterways. ALCOSAN was chartered in 1946 in response to this order. With service agreements from 66 municipalities, construction began in 1956 on the interceptor system and treatment plant. The initial system was placed into operation in 1959. The interceptors, constructed along the Allegheny, Monongahela and Ohio Rivers and Chartiers Creek initially served an area of approximately 206 square miles. This service area was subsequently expanded a number of times.

Since the original design, ALCOSAN has expanded to serve much of Allegheny County. The interceptor system currently runs along three additional major tributaries: Saw Mill Run, Turtle Creek, and Thompson Run (owned by the four municipalities that use it: Monroeville, Wilkins Township, Churchill and Turtle Creek and operated by ALCOSAN¹). Currently, ALCOSAN maintains more than 85 miles of interceptor sewers, five pumping stations, 317 regulator structures, 10 access shafts and one ejector station. Also, ALCOSAN is the permittee for three CSO interceptor relief outfalls plus 18 regulator outfalls along Saw Mill Run. Of the 311 square miles within the service area, approximately 210 square miles are sewered; the remaining areas consist of parks, undeveloped hillsides, and similar undeveloped land. Approximately 70 percent of the sewered areas are serviced by separate sanitary sewers, with the remaining 30 percent of sewered areas have combined sewers.

As a regional interceptor and treatment authority, ALCOSAN does not own or operate any municipal collection systems². There are approximately 400 sewersheds within the ALCOSAN service area that terminate at a regulator structure or a direct connection to the ALCOSAN interceptor system. Most of these sewersheds cut across municipal boundaries. The wastewater from 74 municipalities flows through one or more municipalities to reach the ALCOSAN interceptors. This typically occurs through the up-gradient municipality discharging into a neighboring municipality's collection system. The sewersheds of eight of the municipalities are exclusively within their respective municipal boundaries.

Due to the topography of individual sewersheds, the hydraulic relationships between neighboring municipalities are not necessarily one way. For example, twenty-five municipalities use portions of the City of Pittsburgh's collection system to transport wastewater to the ALCOSAN interceptor system. Conversely small portions of the City of Pittsburgh lay within sewersheds terminating within eight municipalities. The hydraulic relationships between the municipalities and their points of connection to ALCOSAN are summarized in the table below. There are 16 jointly owned or operated major trunk sewers and interceptor sewers that transport wastewater to the ALCOSAN interceptor system. These systems are summarized in tabular form below.

ALCOSAN is implementing a comprehensive wet weather flow management program pursuant to the Combined Sewer Overflow (CSO) section of the ALCOSAN NPDES Sewage Discharge Permit. To date, ALCOSAN has met the objectives and schedules of the permit, including the January 1, 1997 deadline for implementing the nine minimum controls and the long term control plan (LTCP) development schedule.

Twenty-two of the eighty-two municipalities that send their sewage to the Allegheny County Sanitary Authority (ALCOSAN) have combined sewer systems designed to convey sanitary sewage to ALCOSAN's interceptor pipes during dry weather and to discharge mixed stormwater and sewage through combined sewer overflows during wet weather. The remaining municipalities have sanitary sewers. Like the combined sewers, the municipal sanitary sewer systems typically were built with sewage overflow structures to protect against backups and flooding during wet weather.

The overflow structures in question were designed as part of an innovative regional sewer system in the late 1940s under the highest standards of accepted engineering practice of the day. The design was approved and construction permits issued at that time by both the responsible Federal agency, the Army Corps of Engineers, and the responsible

Commonwealth agency, the Sanitary Water Board of the Pennsylvania Department of Health. No other region in the United States today has a large scale sewer system designed and constructed specifically to rely on the existence of combined sewer and sanitary sewer overflow structures as an integral part of its operation.

The Federal Clean Water Act Amendments of 1972 and 1987 mandated the inclusion of a combined sewer inventory and characterization study requirement in ALCOSAN's NPDES permit. ALCOSAN identified all known overflow structures. Until recently the overflow structures at the sanitary sewer connections have been treated by regulatory agencies as defacto "grand fathered" combined sewer overflow structures that are permitted legally under the National Pollution Discharge Elimination System. The Act requires that the combined sewer overflows be managed to protect public health and maintain water quality in the receiving streams.

The United States Environmental Protection Agency and the United States Department of Justice have contemplated litigation or administrative actions against 37 municipalities and the Allegheny County Sanitary Authority (ALCOSAN) to eliminate separate sanitary sewer overflows (SSO) in Allegheny County, Pennsylvania. Further actions are also threatened against other municipalities throughout Allegheny County.

In response to these requirements, ALCOSAN's draft long term CSO control plan evolved into a Long Term Wet Weather Control Concept Plan that provided both CSO and SSO remediation within the ALCOSAN service area. The draft Plan will provide ALCOSAN and its municipalities with the structural and institutional framework to achieve SSO regulatory compliance and to comply with the USEPA's National CSO Policy. Under the draft plan, ALCOSAN will accept flows at the municipal points of connection to its interceptors that will, in conjunction with municipal collection system rehabilitation, enable system-wide capture of annual wet weather flow of approximately 85 percent to meet the CSO Policy and the effective control of wet weather flows from separate sewered areas. A nineteen-year implementation schedule (1999-2017 inclusive) is needed for the planning, design and construction of facilities is proposed in the draft plan.

Allegheny County has established the Three Rivers Wet Weather Demonstration Program as a not-for-profit corporation within the Allegheny County Health Department. The program will include watershed based wet weather flow management demonstration projects, degraded stream restoration projects, and sanitary sewer overflow and illicit connection control demonstration projects.

ALCOSAN operates one treatment plant, located (partially) beneath the McKee's Rocks Bridge on Pittsburgh's North Side. The ALCOSAN plant provides secondary treatment using a conventional plug flow activated sludge process. The plant has a permitted monthly average capacity of 200 mgd. Although ALCOSAN serves a combined sewer system, the flow to the plant does not vary significantly during wet and dry weather. The average annual flow to the plant is approximately 190 mgd. Typical flows during wet and dry weather are approximately 225 mgd and 175 mgd respectively. The preliminary and primary treatment systems have been in operation since 1959. Secondary treatment was brought on-line in 1972.

Effluent limits are met consistently at current plant flow rates. ALCOSAN is currently implementing phase 1 of its Capital Improvements Program (CIP) as detailed in the Act 537 Comprehensive Sewage Facilities Plan (August 1996). Phase 1 of the CIP will effectively eliminate off-site odor releases from the plant and will increase the nominal treatment capacity to 250 mgd. This increased capacity will provide for maximum month average day capacity requirements for the current service area through 2015. A key component of ALCOSAN's Regional Long Term Wet Weather Control Concept Plan is the expansion of the wet weather capacity at the treatment plant to 875 mgd.

The service population is projected to increase to approximately 990,000 in 2015. As is typical for older, urban areas, approximately 50 percent of the wastewater entering the treatment plant has been generated from the use of potable water. The remaining volume is inflow, infiltration and stormwater runoff from the combined sewered areas. Based upon historic water consumption and the projected populations, projected average daily plant flow will increase to 211 mgd by 2015. The number of customers is projected to increase to approximately 324,000.

¹ The Municipality of Penn Hills decommissioned the Gascola treatment plant and regionalized with ALCOSAN. Due to capacity limitations in the Thompson Run interceptor, Penn Hills built a parallel interceptor for this purpose.

² ALCOSAN assumed ownership of the Saw Mill Run interceptor from the City of Pittsburgh. The upper reaches of this interceptor along Library Road in Castle Shannon Borough function as a collector sewer.

Allegheny County Sanitary Authority

ALCOSAN entered a "Standard Municipal Agreement" with 59 municipalities prior to its initiation of operation in 1959. The agreements provide for uniform sewerage charges throughout the service area based on metered or estimated water consumption. There were no provisions for metering actual wastewater flows to the ALCOSAN interceptor; quantifying or limiting extraneous infiltration and inflow; and no provisions for the metering of bypass discharges. In addition, there is no explicit definition of sewage in the agreement, which is significant in sanitary sewer areas as it relates to ALCOSAN's commitment to accept wet weather flows. Service agreements entered into since 1986 impose limitations on the types and volume of flows from municipalities, exclude storm water and acid mine drainage, and impose surcharges for excessive inflows and infiltration. ALCOSAN has established a policy to rebate surcharges to the municipalities for purposes of inflow and infiltration removal.

Allegheny County Sanitary Authority

Locations at Which Sewage Enters ALCOSAN System*			
Originating Municipality	Location of ALCOSAN Connections	Originating Municipality	Location of ALCOSAN Connections
1 Aspinwall Borough	Aspinwall	40 Municipality of Monroeville	Monroeville, Turtle Creek, Wilmerding
2 Avalon Borough	Avalon, Ben Avon	41 Municipality of Mt. Lebanon	Scott, Castle Shannon, Baldwin, Pittsburgh
3 Baldwin Borough	Pittsburgh	42 Mt. Oliver Borough	Pittsburgh
4 Baldwin Township	Pittsburgh, Castle Shannon	43 Munhall Borough	Munhall, W. Homestead, Homestead
5 Bellevue Borough	Avalon, Bellvue, Ben Avon, Pittsburgh	44 Neville Township	Neville
6 Ben Avon Borough	Ben Avon, Pittsburgh	45 North Braddock Borough	N. Braddock, Braddock, E. Pittsburgh
7 Ben Avon Heights Borough	Avalon, Emsworth	46 North Fayette Township	Collier
8 Bethel Park Township	Bridgeville, Castle Shannon	47 North Versailles Township	E. Pittsburgh, N. Versailles, Turtle Creek, Wilmerding, Monroeville
9 Blawnox Borough	Blawnox	48 Oakdale Borough	Collier
10 Braddock Borough	Braddock	49 O'Hara Township	Aspinwall, Blawnox, O'Hara, Sharpsburg
11 Braddock Hills Borough	Braddock, E. Pittsburgh	50 Ohio Township	Emsworth
12 Brentwood Borough	Pittsburgh	51 Municipality of Penn Hills	Penn Hills, Pittsburgh, Verona, Wilkins, Turtle Creek
13 Bridgeville Borough	Bridgeville	52 Pitcairn Borough	Monroeville
14 Carnegie Borough	Carnegie, Rosslyn Farms, Scott, Collier	53 Pittsburgh City	Pittsburgh, Aspinwall, Crofton, Homestead, W. Homestead, Millvale, Rosslyn Farms
15 Castle Shannon Borough	Castle Shannon	54 Plum Borough	Monroeville
16 Chalfant Borough	E. Pittsburgh, Turtle Creek	55 Rankin Borough	Ranking
17 Churchill Borough	E. Pittsburgh, Turtle Creek	56 Reserve Township	Reserve, Millvale, Pittsburgh
18 Collier Township	Collier, Scott	57 Robinson Township	Robinson, Carnegie, Pittsburgh
19 Crafton Borough	Crofton, Pittsburgh	58 Ross Township	Emsworth, Pittsburgh, Millvale
20 Dormont Borough	Pittsburgh	59 Rosslyn Farms Borough	Roslyn Farms, Carnegie, Pittsburgh
21 East McKeesport Borough	North Versailles	60 Scott Township	Scott, Carnegie, Pittsburgh, Greentree
22 East Pittsburgh Borough	E. Pittsburgh, N. Braddock	61 Shaler Township	Millvale, Etna, Sharpsburg
23 Edgewood Borough	Pittsburgh	62 Sharpsburg Borough	Sharpsburg, O'Hara, Aspinwall
24 Emsworth Borough	Emsworth	63 South Fayette Township	Bridgeville
25 Etna Borough	Etna	64 Stowe Township	Stowe, McKees Rocks
26 Forest Hills Borough	E. Pittsburgh, Turtle Creek	65 Swissvale Borough	Swissvale, Pittsburgh, Rankin
27 Fox Chapel Borough	Aspinwall, O'Hara	66 Thornburg Borough	Crofton, Pittsburgh
28 Franklin Park Borough	Emsworth	67 Turtle Creek Borough	Turtle Creek
29 Green Tree Borough	Pittsburgh	68 Upper St. Clair Township	Scott, Bridgeville
30 Heidelberg Borough	Scott	69 Verona Borough	Penn Hills, Verona
31 Homestead Borough	Homestead, W. Homestead	70 Wall Borough	Wilmerding, N. Versailles
32 Indiana Township	Etna	71 West Homestead Borough	W. Homestead, Pittsburgh
33 Ingram Borough	Pittsburgh	72 West Mifflin Borough	W. Homestead, Pittsburgh, Munhall
34 Kennedy Township	McKees Rocks, Stowe, Kennedy, Pittsburgh	73 West View Borough	Millvale (via Ross & Reserve)
35 Kilbuck Township	Avalon, Emsworth	74 Whitaker Borough	Munhall
36 Town of McCandless	Emsworth, Etna	75 Whitehall Borough	Castle Shannon, Pittsburgh
37 McDonald Borough	Collier (via S. Fayette & Collier)	76 Wilkins Township	N. Braddock, E. Pittsburgh, Turtle Creek
38 McKees Rocks Borough	McKees Rocks	77 Wilkinsburg Borough	E. Pittsburgh, Pittsburgh, Wilkins
39 Millvale Borough	Millvale, Pittsburgh	78 Wilmerding Borough	Wilmerding

* Wastewater may flow through other municipalities on route to the ALCOSAN system.

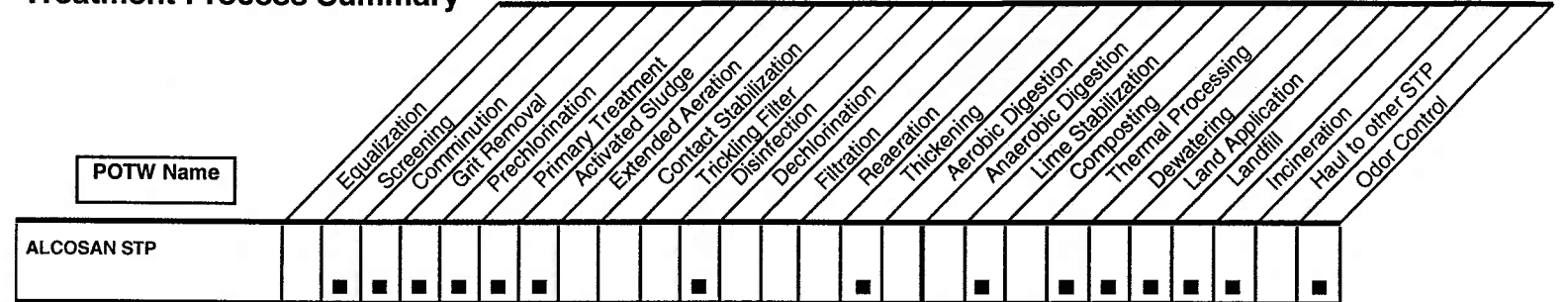
Non-ALCOSAN Contributing Interceptors and Trunk Sewers				
Interceptor / Trunk Sewer	Utilized By	Type(s) of Contributing Sewershed	Discharge to ALCOSAN Interceptor	Point of Connection
Beck's Run	City of Pittsburgh, Baldwin, Mt. Oliver Boroughs	combined separate	Monongahela	M34
Chalfant Run	Penn Hills Municipality, Churchill Borough, Wilkins Township	separate	Turtle Creek (via Thompson Run #2)	TR-4
Girty's Run	Westview Borough and Girty's Run Joint Sewer Authority (GRJSA) - Ross, Shaler, Reserve, Townships, Millvale Borough	combined separate	Allegheny	A67
Guyasuta Run	Fox Chapel Borough, O'Hara Township	separate	Allegheny	Direct Connection
Lowries Run	Kilbuck, Ross Township, McCandless Township Sanitary Authority (MTSA), Ohio Township, Franklin Park	separate	Ohio	O15
McLaughlin Run	Bridgeville Borough, Bethel Park, Upper St. Clair Townships	separate	Chartiers	Between C53 & C54
McNeilly Road	Dormont, Baldwin, Castle Shannon Borough, Municipality of Mt. Lebanon, City of Pittsburgh	combined separate	Saw Mill Run	SMR15, SMR16, SMR17
Nine Mile Run	City of Pittsburgh, Edgewood, Swissvale, Wilkinsburg Borough	combined separate	Monongahela	M47
Painters Run	Upper St. Clair Township, Mt. Lebanon Municipality	separate	Chartiers	C53
Pine Creek / Little Pine Creek	Etna Borough, Shaler, Ross, O'Hara, Indiana Townships	combined separate	Allegheny	A68
Robinson Run	North Fayette, South Fayette Townships, McDonald, Oakdale Borough	combined separate	Chartiers	C45B-04
Squaw Run	Fox Chapel Borough, O'Hara Township, Indiana Township	separate	Allegheny	Direct Connection
Streets Run	City of Pittsburgh, Baldwin, Brentwood, West Mifflin, Whitehall Boroughs	combined separate	Monongahela	M42
West Run	Homestead Borough, Munhall Borough, West Homestead Borough, City of Pittsburgh	combined separate	Monongahela	M-43
Weyman Run	Baldwin Township, Brentwood Borough, Whitehall Borough	separate	Saw Mill Run	Direct Connection
Whitaker Run	Munhall, West Mifflin, Whitaker Boroughs	combined separate	Monongahela	M49

Allegheny County Sanitary Authority

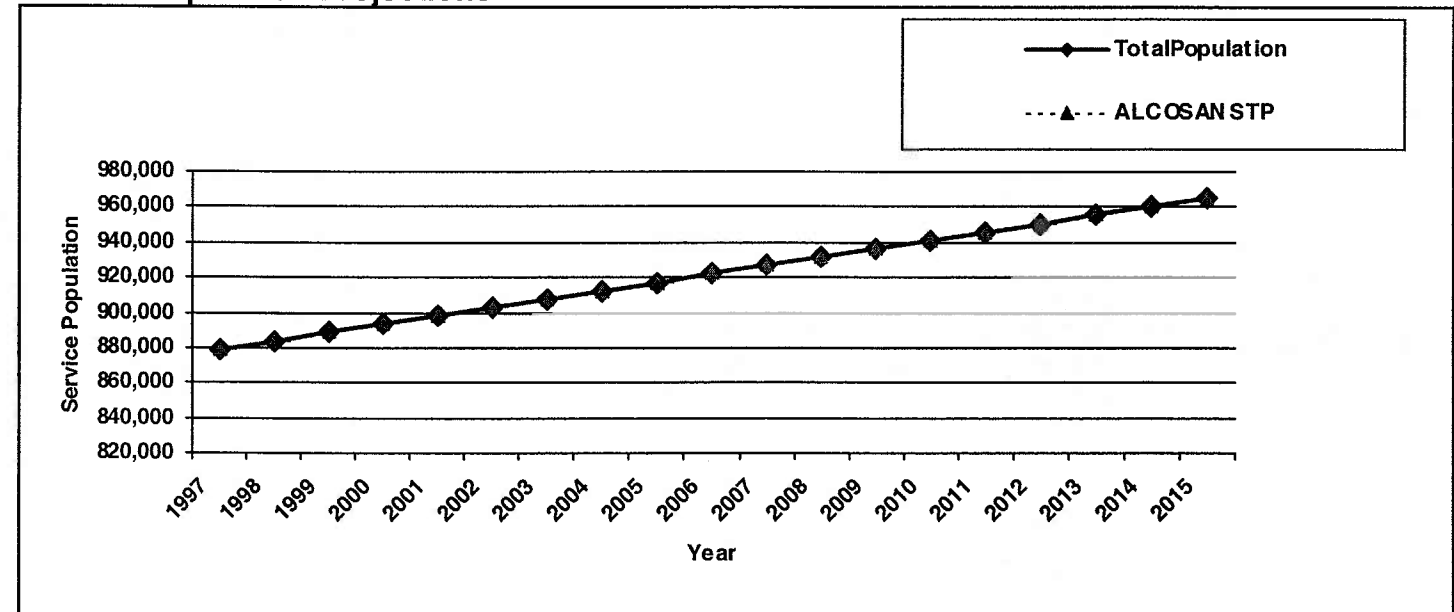
Service Area Summary

POTW Name	1997 Service Population	2015 Service Population	Municipality	Type Of Sewer System
ALCOSAN STP	879000	964843	Aspinwall Borough	Combined
			Avalon Borough	Separate
			Baldwin Borough	Separate
			Baldwin Township	Separate
			Bellevue Borough	Separate
			Ben Avon Borough	Separate
			Ben Avon Hts. Borough	Separate
			Bethel Park Borough	Separate
			Blawnox Borough	Separate
			Braddock Borough	Combined
			Braddock Hills Borough	Combined
			Brentwood Borough	Separate
			Bridgeville Borough	Separate
			Carnegie Borough	Combined / Separate
			Castle Shannon Borough	Separate
			Chalfant Borough	Separate
			Churchill Borough	Separate
			Collier Township	Separate
			Crafton Borough	Combined
			Dormont Borough	Separate
			East McKeesport Borough	Separate
			East Pittsburgh Borough	Combined
			Edgewood Borough	Separate
			Emsworth Borough	Separate
			Etna Borough	Combined
			Forest Hills Borough	Separate
			Fox Chapel Borough	Separate
			Franklin Park Borough	Separate
			Greentree Borough	Combined / Separate
			Heidelberg Borough	Separate
			Homestead Borough	Combined
			Indiana Township	Separate
			Ingram Borough	Separate
			Kennedy Township	Separate
			Kilbuck Township	Separate
			McCandless, Town of	Separate
			McDonald Borough	Combined
			McKees Rocks, Borough of	Combined
			Millvale Borough	Combined
			Monroeville, Municipality of	Separate
			Mt. Lebanon Municipality	Separate
			Mt. Oliver Borough	Separate
			Munhall Borough	Combined
			Neville Township	Separate
			North Braddock Borough	Combined
North Fayette Township	Separate			
North Huntingdon Township	Separate			
North Versailles Township	Separate			
O'Hara Township	Separate			
Oakdale Borough	Separate			

Treatment Process Summary



Service Population Projections



Allegheny County Sanitary Authority

Service Area Summary

POTW Name	1997 Service Population	2015 Service Population	Municipality	Type Of Sewer System
			Ohio Township	Separate
			Penn Hills, Municipality of	Separate
			Penn Township	Separate
			Peters Township	Separate
			Pitcairn Borough	Combined
			Pittsburgh, City of	Combined / Separate
			Plum Borough	Separate
			Rankin Borough	Combined
			Reserve Township	Combined / Separate
			Robinson Township	Separate
			Ross Township	Separate
			Rosslyn Farms Borough	Separate
			Scott Township	Separate
			Shaler Township	Separate
			Sharpsburg Borough	Combined
			South Fayette Township	Separate
			Stowe Township	Combined
			Swissvale Borough	Combined / Separate
			Thornburg Borough	Separate
			Trafford Borough	Separate
			Turtle Creek Borough	Combined
			Upper St. Clair Township	Separate
			Verona Borough	Separate
			Wall Borough	Separate
			West Homestead Borough	Combined / Separate
			West Mifflin Borough	Separate
			West View Borough	Combined / Separate
			Whitaker Borough	Separate
			Whitehall Borough	Separate
			Wilkins Township	Separate / Combined
			Wilkinsburg Borough	Separate
			Wilmerding Borough	Combined

Allegheny County Sanitary Authority

Sewer Use Ordinances

Municipality	Corrective Action Plan	Grease Trap Requirement	Industrial Pretreatment Program	Illicit Connection Inspection At Sale	Surcharge
Aspinwall Borough	No		ALCOSAN	No	
Avalon Borough	No		ALCOSAN	No	
Baldwin Borough	Yes		ALCOSAN	Yes	
Baldwin Township	Yes		ALCOSAN	Yes	
Bellevue Borough	No		ALCOSAN	No	
Ben Avon Borough	No		ALCOSAN	No	
Ben Avon Hts. Borough	No		ALCOSAN	No	
Bethel Park Borough	Yes	Yes	ALCOSAN	Yes, dye testing	
Blawnox Borough	No		ALCOSAN	No	
Braddock Borough			ALCOSAN		
Braddock Hills Borough	No		ALCOSAN	No	
Brentwood Borough	No		ALCOSAN	Yes	
Bridgeville Borough	Yes		ALCOSAN	No	
Carnegie Borough	No		ALCOSAN	No	
Castle Shannon Borough	Yes		ALCOSAN	Yes	
Chalfant Borough	No		ALCOSAN	No	
Churchill Borough	No		ALCOSAN	Yes	
Collier Township	No		ALCOSAN	No	
Crafton Borough	No		ALCOSAN	No	
Dormont Borough	Yes, but an in-house not PADER mandated		ALCOSAN	Yes, dye testing	
East McKeesport Borough	No		ALCOSAN	No	
East Pittsburgh Borough	No		ALCOSAN	No	

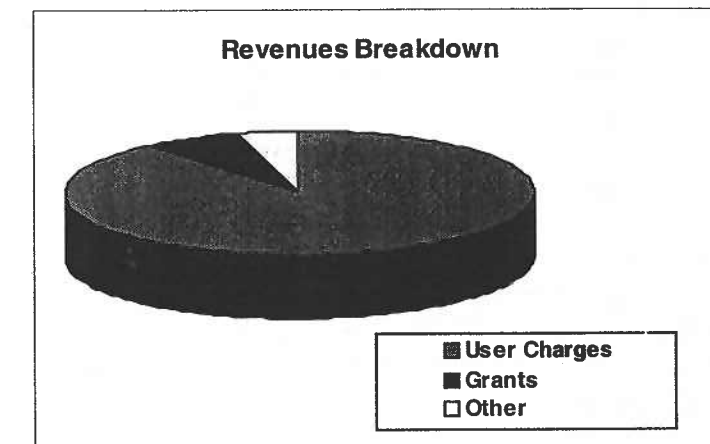
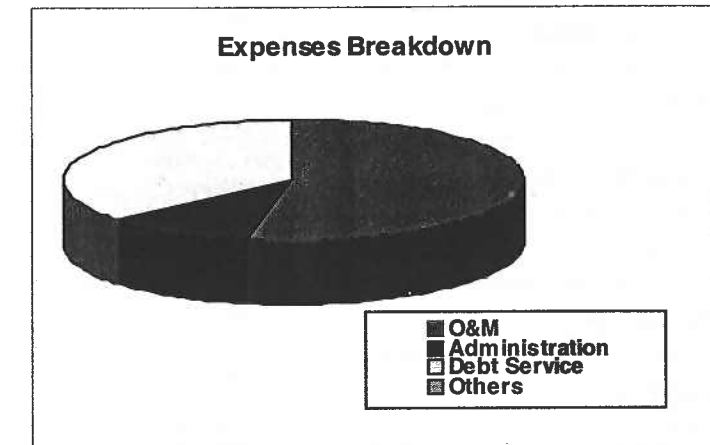
Financial Information

REVENUES		
User Charges:		\$48,386,092
Grants:		\$3,699,311
Other:		\$2,255,355
Total Revenues		\$54,340,758
EXPENSES		
Operations and Maintenance		\$28,079,608
Administration:		\$5,578,896
Debt Service:		\$19,331,629
Other:		\$0
Total Expenses		\$52,990,133
Surplus(Deficit):		\$1,350,625
Debt Service Coverage Ratio		1.07
	YEAR:	1998
		Actual/ Budgeted
Information Source:		
Revenues	ALCOSAN 1999 Budget Presentation	Budgeted
Expenses	ALCOSAN 1999 Budget Presentation	Budgeted

Allegheny County Sanitary Authority

Sewer Use Ordinances

Municipality	Corrective Action Plan	Grease Trap Requirement	Industrial Pretreatment Program	Illicit Connection Inspection At Sale	Surcharge
Edgewood Borough	No	Yes	ALCOSAN	No	
Emsworth Borough	No		ALCOSAN	No	
Etna Borough	Yes		ALCOSAN	No	
Forest Hills Borough	No		ALCOSAN	No	
Fox Chapel Borough	Yes		ALCOSAN	Yes	
Franklin Park Borough	Yes		ALCOSAN	No	
Greentree Borough	No		ALCOSAN	No	
Heidelberg Borough	No		ALCOSAN	No	
Homestead Borough			ALCOSAN		
Indiana Township	Yes		ALCOSAN	No	
Ingram Borough	No		ALCOSAN	No	
Kennedy Township	No		ALCOSAN	No	
Kilbuck Township	No		ALCOSAN	No	
McCandless, Town of	Yes		ALCOSAN	No	
McDonald Borough	No		ALCOSAN	No	
McKees Rocks, Borough of	No		ALCOSAN	No	
Millvale Borough			ALCOSAN		
Monroeville, Municipality of	Yes		ALCOSAN		
Mt. Lebanon Municipality	Yes		ALCOSAN	Yes	
Mt. Oliver Borough	Yes		ALCOSAN	Yes	
Munhall Borough	No		ALCOSAN	No	
Neville Township	No		ALCOSAN	No	



Allegheny County Sanitary Authority

Sewer Use Ordinances

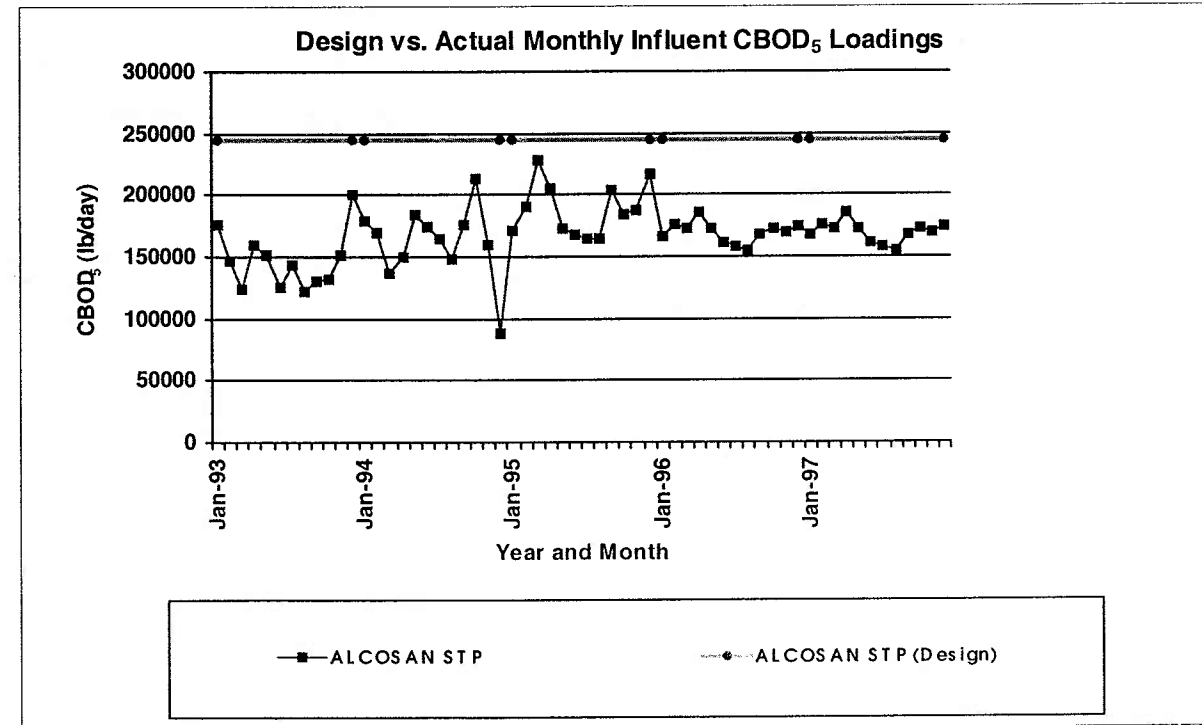
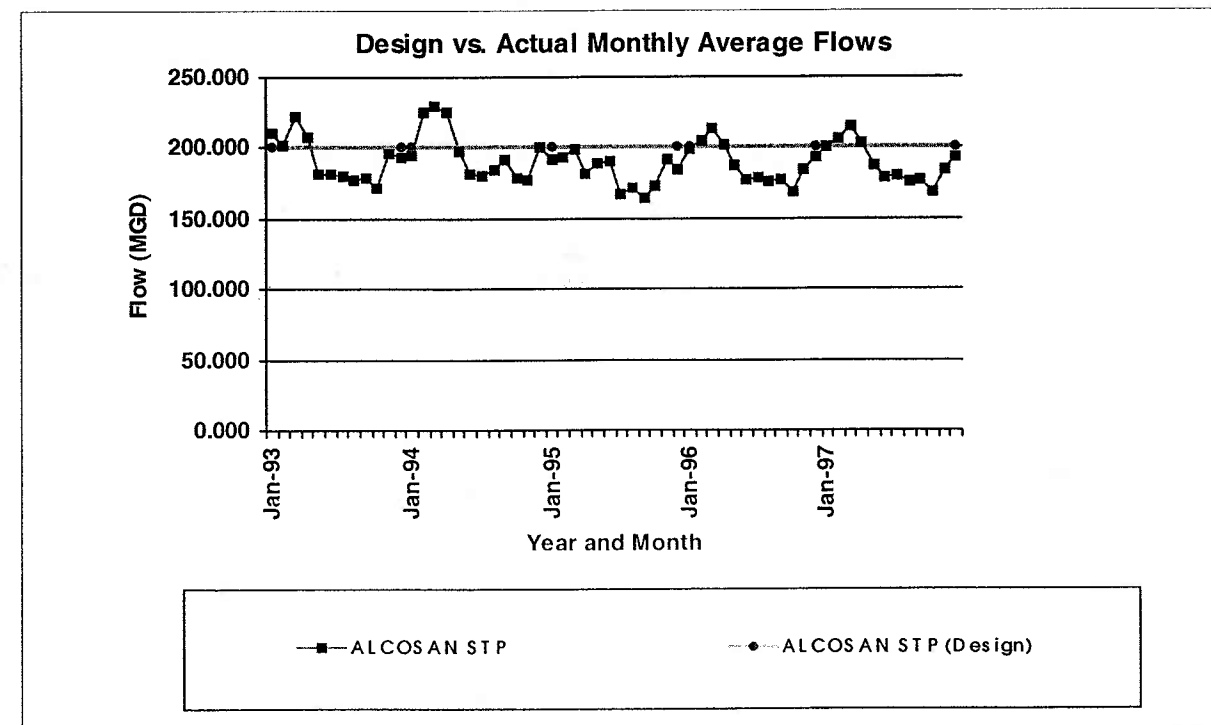
Municipality	Corrective Action Plan	Grease Trap Requirement	Industrial Pretreatment Program	Illicit Connection Inspection At Sale	Surcharge
North Braddock Borough	No		ALCOSAN	No	
North Fayette Township	No		Yes, MTMA's pretreatment ordinance	No	
North Huntingdon Township	No		ALCOSAN	No	
North Versailles Township	Yes, for Long Run Watershed	No	Yes, McKeesport Auth. pretreatment program	Yes, dye testing	
O'Hara Township	No		ALCOSAN	No	
Oakdale Borough	No		ALCOSAN	No	
Ohio Township	No	Yes	ALCOSAN	Yes	
Penn Hills, Municipality of	Yes; Plum Creek watershed	Yes	ALCOSAN; only areas served by ALCOSAN	Yes, dye testing	Yes
Penn Township					
Peters Township	No	Yes	Yes	Yes, dye testing	Yes
Pitcairn Borough	No		ALCOSAN	No	
Pittsburgh, City of	Yes		ALCOSAN	No	
Plum Borough	Yes	Yes, required at restaurants	ALCOSAN	Yes, dye testing	
Rankin Borough	No		ALCOSAN	No	
Reserve Township	No		ALCOSAN	Yes	
Robinson Township	No	Yes	Yes, adopted MTMA's pretreatment ordinance	Yes	No
Ross Township	Yes		ALCOSAN	Yes	
Rosslyn Farms Borough	No		ALCOSAN	No	
Scott Township	No		ALCOSAN		
Shaler Township	Yes		ALCOSAN	Yes	
Sharpsburg Borough	No		ALCOSAN	No	
South Fayette Township	No		ALCOSAN	No	

Allegheny County Sanitary Authority

1997 Plant Performance

ALCOSAN STP	Average Daily Flow (mgd)			CBOD ₅ (lb/Day)			Permit Limits			TSS (lb/Day) Effluent			Permit Limits			Effluent Ammonia Nitrogen (mg/l)			Permit Limits			Effluent Coliform (Col./100ml)			Permit Limits		
	Monthly	Summer	Winter	Monthly Influent	Average Effluent	% Removal	Summer	Winter	Average	Summer	Winter	Average	Summer	Winter	Average	Summer	Winter	Average Daily	Summer	Winter	Average Daily	Summer	Winter				
January	196.6			187,031	16,400	91%			29,900			2.7			11												
February	208.7			182,868	13,900	92%			22,000			2.0			10												
March	215.5			147,464	12,600	91%			27,600			1.4			10												
April	181.9			162,421	13,700	92%			25,900			3.0			10												
May	188.7			168,493	11,000	93%			26,000			2.3			7												
June	200.7			140,687	10,000	93%			17,300			1.4			10												
July	163.8			161,295	8,200	95%			15,700			1.8			6												
August	173.4			159,173	10,100	94%			9,500			1.9			18												
September	164.6			160,710	8,200	95%			12,200			3.1			16												
October	155.8			184,621	7,800	96%			9,600			1.9			17												
November	200.5			192,415	15,100	92%			9,400			1.5			46												
December	192.2			194,073	22,500	88%			19,800			3.0			46												
Maximum	215.5	200	200		22,500		33,360	41,700	29,900	50,040	50,040	3.1	15	25	46	200	2000										
Max as % Limit	108%				67%				60%			21%			2%												
Average	186.9				12,458				18,742			2.1			17												
3 Month > Limit?	Yes																										

Plant Loading Summary



Allegheny County Sanitary Authority

Collection System Facilities

TREATMENT PLANT	Design Capacity (MGD)	Biological Treatment	Owner	Operator
ALCOSAN STP	200	Activated Sludge	ALCOSAN	ALCOSAN

Pump Station	Peak Capacity	Avg Daily Flow	Owner	Operator
Adara	0.115 mgd	0.024 mgd	WWMA	WWMA
Back Channel			Neville Twp.	Neville Twp.
Baker School Road	25 gpm	0.0123 mgd	PTSA	PTSA
Blackridge			Churchill B.	Churchill B.
Brownhill Road	200 gpm		O'Hara Twp.	O'Hara Twp.
Brush Run	2.18 mgd		Upr St. Clair Twp.	Upr St. Clair Twp.
Chartiers Creek			MATR	MATR
Churchill	90 gpm		PNHLS	Contractor
Clever Road	800 gpm	102 gpm	Kennedy Twp.	Kennedy Twp.
Cloverleaf Estates West Phase III L.S.		3,700 gpd	Myles Sampson	Myles Sampson
Corliss		0.913 mgd	ALCOSAN	ALCOSAN
Country Club Estates			MATR	MATR
Crestas	0.504 mgd	0.090 mgd	NVSA	NVSA
Crofton	160 gpm		O'Hara Twp.	O'Hara Twp.
Deer Run	42 gpm	0.014 mgd	PTSA	PTSA
Deerfield Manor	0.144 mgd		Upr St. Clair Twp.	Upr St. Clair Twp.
Diebold Road	325 gpm	110 gpm	Kennedy Twp.	Kennedy Twp.
Eastland	0.432 mgd	0.003 mgd	NVSA	NVSA
Edgewater Drive	144,000 gpd	22,000 gpd	WMSSMA	WMSSMA
Ella Street			McKees Rocks	ALCOSAN
Elwood Court	200 gpm	40 gpm	Kennedy Twp.	Kennedy Twp.
Emsworth	158,400 gpd	62,650 gpd	Emsworth B.	Emsworth B.
Ewing Road	175 gpm	35 gpm	Kennedy Twp.	Kennedy Twp.
Fox Chapel Borough Bldg.			Fox Chapel B.	Fox Chapel B.
Herbst Hollow Road	1,000 gpm	258 gpm	Kennedy Twp.	Kennedy Twp.
Hillside Avenue Extension			Monroeville	Monroeville
Johnson Road			Monroeville	Monroeville
Kaylor	400 gpm	140 gpm	MTSA	MTSA
Level Green Commons	44 gpm	0.010 mgd	PTSA	PTSA
Lincoln Road	358 gpm		PNHLS	Contractor
Long Road	1,736 gpm		PNHLS	Contractor
Lougeay Road	410 gpm		PNHLS	Contractor
Main			Neville Township	Neville Township
McElroy Drive	25 gpm	0.010 mgd	PTSA	PTSA
McKees Rocks & Forest Grove Rd.	100 gpm	34 gpm	Kennedy Twp.	Kennedy Twp.

Sewer Maintenance Information

Service Community	Maintained By:	Mainten Done	Equipment Sourc	I/I Removal	I/I Flow Monitor
ALCOSAN Interceptors	ALCOSAN	Routine	Authority	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Aspinwall Borough	Dept. of Public Works	Annually	COG	<input type="checkbox"/>	<input type="checkbox"/>
Avalon Borough	Dept. of Public Works	As-needed	Dept. of Public Works	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Baldwin Borough	Dept. of Public Works	Routine	Dept. of Public Works	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Baldwin Township	Dept. of Public Works	Annual	Dept. of Public Works, COG	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Bellevue Borough	Dept. of Public Works	As-needed	Dept. of Public Works	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Ben Avon Heights Borough	Dept. of Public Works	As-needed	Dept. of Public Works	<input type="checkbox"/>	<input type="checkbox"/>
Bethel Park, Municipality of	BPMA	Routine	BPMA	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Blawnox Borough	Dept. of Public Works	Routine	COG	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Braddock Borough	Borough Personnel	As-needed	Borough	<input type="checkbox"/>	<input type="checkbox"/>
Braddock Hills Borough	Dept. of Public Works	As-needed	Dept. of Public Works, COG	<input type="checkbox"/>	<input type="checkbox"/>
Brentwood Borough	Dept. of Public Works	Routine	Dept. of Public Works	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Bridgeville Borough	Dept. of Public Works	Routine	Dept. of Public Works	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Carnegie Borough	Dept. of Public Works	Routine	Dept. of Public Works, COG	<input type="checkbox"/>	<input type="checkbox"/>
Castle Shannon Borough	Dept. of Public Works	Periodic	Dept. of Public Works, COG	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Churchill Borough	Dept. of Public Works	As-needed	Dept. of Public Works	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Collier Township	CTMA, Contractor	As-needed	CTMA, Contractor	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Crafton Borough	Dept. of Public Works	As-needed	Dept. of Public Works	<input type="checkbox"/>	<input type="checkbox"/>
Dormont Borough	Dept. of Public Works	Routine	Dept. of Pubic Works, COG	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
East McKeesport Borough	Dept. of Public Works	As-needed	Dept. of Pubic Works	<input type="checkbox"/>	<input type="checkbox"/>
East Pittsburgh Borough	TCVCOG	As-needed	COG	<input type="checkbox"/>	<input type="checkbox"/>
Edgewood Borough	Dept. of Public Works	As-needed	Dept. of Public Works	<input type="checkbox"/>	<input type="checkbox"/>
Emsworth Borough	Contractor	Daily	Contractor	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Etna Borough	Dept. of Public Works	Routine	Dept. of Pubic Works, COG	<input type="checkbox"/>	<input type="checkbox"/>
Forest Hills Borough	Dept. of PW, Contractor	As-needed	Dept. of Public Works	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Fox Chapel Borough	Dept. of Public Works	Routine	Dept. of Pubic Works	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Franklin Park Borough	Dept. of Public Works	Routine	D of PW, McCandless Twp	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Green Tree Borough	Green Tree Borough	Routine	Borough, Contractor	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Heidelberg Borough	Dept. of Public Works	Routine	Dept. of Pubic Works	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Homestead Borough	Homestead Borough	As-needed	COG	<input type="checkbox"/>	<input type="checkbox"/>
Indiana Township	Dept. of Public Works	Routine	Dept. of Pubic Works	<input type="checkbox"/>	<input type="checkbox"/>
Ingram Township	Dept. of Public Works	As-needed	Dept. of Pubic Works	<input type="checkbox"/>	<input type="checkbox"/>
Kennedy Township	Dept. of Public Works	As-needed	Dept. of Pubic Works	<input type="checkbox"/>	<input type="checkbox"/>
Kilbuck Township	Contractor	As-needed	Contractor	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Allegheny County Sanitary Authority

Sewer Maintenance Information

Location	Capacity	Location	Owner	Operator
Melancthon Ejector	100 gpm		ALCOSAN	ALCOSAN
Memorial Street	144,000 gpd		Stowe Twp.	Stowe Twp.
Middlecrest	350 gpm		O'Hara Twp.	O'Hara Twp.
Montrose		0.845 mgd	ALCOSAN	ALCOSAN
Nevillewood L.S. No. 1		27,800 gpd	CTMA	Contractor
Nevillewood L.S. No. 2		4,800 gpd	Ricon Develop	Ricon Develop
Oakdale	5.5 mgd	1.107 mgd	MATSF	MATSF
Ottawa Hills			Indiana Twp.	Indiana Twp.
Pittview / Maryland			GRJSA	GRJSA
Porters Hollow	1,100 gpm	329 gpm	Kennedy Twp.	Kennedy Twp.
Quigley Run	580 gpm		PNHLS	Contractor
Richard Street	200 gpm	24 gpm	Kennedy Twp.	Kennedy Twp.
Ridgeview Farms			Shaler Twp.	Shaler Twp.
Robb Street			McKees Rocks	McKees Rocks
Sandy Creek	16.6 mgd	4.651 mgd	ALCOSAN	ALCOSAN
Saxonburg Road			Shaler Twp.	Shaler Twp.
South Fayette Park			MATSF	MATSF
Squaw Run		0.676 mgd	ALCOSAN	ALCOSAN
Thoms Run P.S. / Siphon		143,950 gpd	CTMA	Contractor
Tilbrook			Monroeville	Monroeville
Twin Towers	160 gpm		MATR	MATR
Tyler Road	245 gpm		PNHLS	Contractor
Verona		1.848 mgd	ALCOSAN	ALCOSAN
Vigne Road Injector	50 gpm	16 gpm	Kennedy Twp.	Kennedy Twp.
Village Drive	200 gpm		O'Hara Twp.	O'Hara Twp.
Westbury	0.115 mgd	0.003 mgd	NVSA	NVSA
Westinghouse			Monroeville	Monroeville
Woodhaven - 1			Monroeville	Monroeville
Woodhaven - 2			Monroeville	Monroeville
Woodhawk	0.216 mgd		GRJSA	GRJSA

Equalization Basin

Equalization Basin	Capacity	Location	Owner	Operator
Former Gascola Treatment Plant		In-Line	PNHLS	PNHLS
Former Jefferson Rd. P.S.		In-Line	PNHLS	PNHLS
Former Long Rd. Treatment Plant		In-Line	PNHLS	PNHLS
Former Rodi Rd. P.S.		In-Line	PNHLS	PNHLS
Former Volk Treatment Plant		In-Line	PNHLS	PNHLS
Lincoln Road P.S.		In-Line	PNHLS	PNHLS

Service Community	Maintained By:	Mainten Done	Equipment Sourc	I/I Removal	I/I Flow Monitor
McCandless, Town of	MTSA	Routine	Authority	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
McDonald Borough	Dept. of Public Works	Routine	Dept. of Public Works	<input type="checkbox"/>	<input checked="" type="checkbox"/>
McKees Rocks Borough	Street Dept.	Routine	Street Dept.	<input type="checkbox"/>	<input type="checkbox"/>
Monroeville, Municipality of	Sewer Crew	Routine	Municipality, COG	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Mt. Lebanon, Municipality of	Sewer Crew	Routine	Dept. of Public Works	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Mt. Oliver Borough	Road Dept.	Routine	Road Dept.	<input type="checkbox"/>	<input type="checkbox"/>
Munhall Borough	Street Dept., SVCOG	As-needed	Street Dept.	<input type="checkbox"/>	<input type="checkbox"/>
Neville Township	Dept. of Public Works	As-needed	Dept. of Public Works	<input checked="" type="checkbox"/>	<input type="checkbox"/>
North Braddock Borough	North Braddock Borough	As-needed	North Braddock Borough	<input type="checkbox"/>	<input type="checkbox"/>
North Fayette Township	Dept. of Public Works	As-needed	Dept. of Public Works	<input type="checkbox"/>	<input checked="" type="checkbox"/>
North Huntingdon Township	NHTMA	Routine	Authority	<input type="checkbox"/>	<input type="checkbox"/>
North Versailles Township	NVSA	As-needed	Authority	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
O'Hara Township	Dept. of Public Works	Routine	Dept. of Public Works, COG	<input type="checkbox"/>	<input type="checkbox"/>
Oakdale Borough	Oakdale Mun. Authority	Routine	Authority	<input type="checkbox"/>	<input type="checkbox"/>
Ohio Township	Contractor	As-needed	Contractor	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Penn Hills, Municipality of	WPC Dept., Contractor	Routine	WPC Dept., Contractor	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Penn Township	PTSA	Routine	Authority	<input type="checkbox"/>	<input type="checkbox"/>
Peters Township	PTSA	Routine	Authority	<input type="checkbox"/>	<input type="checkbox"/>
Pitcairn Borough	Dept. of Public Works	As-needed	Dept. of Public Works	<input type="checkbox"/>	<input type="checkbox"/>
Plum Borough	PBMA, Contractor	Routine	PBMA, Contractor	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Rankin Borough	Dept. of Public Works	Routine	Dept. of Public Works, COG	<input type="checkbox"/>	<input type="checkbox"/>
Reserve Township	Twp. Highway Dept.	Routine	Twp. Highway Dept., COG	<input type="checkbox"/>	<input type="checkbox"/>
Robinson Township	MATR	Routine	Authority	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Ross Township	Dept. of Public Works	Routine	Dept. of Public Works	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Rosslyn Farms	Dept. of PW, COG	Routine	Dept. of Public Works, COG	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Scott Township	Dept. of Public Works	As-needed	Dept. of Public Works	<input type="checkbox"/>	<input type="checkbox"/>
Shaler Township	Dept. of Public Works	Routine	Dept. of Public Works	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Sharpsburg Borough	Dept. of PW, COG	Routine	Dept. of Public Works, COG	<input type="checkbox"/>	<input type="checkbox"/>
South Fayette Township	MATSF	As-needed	MATSF	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Stowe Township	Dept. of PW, COG	Routine	Dept. of Public Works, COG	<input type="checkbox"/>	<input type="checkbox"/>
Swissvale Borough	Dept. of Public Works	Routine	Dept. of Public Works, COG	<input type="checkbox"/>	<input type="checkbox"/>
Thornburg Borough	Dept. of Public Works	As-needed	Dept. of Public Works	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Trafford Borough	Borough Road Crew	Routine	Dept. of Public Works, COG	<input type="checkbox"/>	<input type="checkbox"/>
Turtle Creek Borough	Borough St. Dept., COG	Routine	Borough Street Dept., COG	<input type="checkbox"/>	<input type="checkbox"/>

Allegheny County Sanitary Authority

Sewer Maintenance Information

Service Community	Maintained By:	Mainten Done	Equipment Sourc	I/I Removal	I/I Flow Monitor
Upper St. Clair Township	Dept. of Public Works	Routine	Dept. of Public Works	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Verona Borough	Dept. of Public Works	As-needed	Dept. of Public Works, COG	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Wall Borough	Sewage Dept. (Part-time)	As-needed	Borough, COG	<input type="checkbox"/>	<input type="checkbox"/>
West Mifflin Borough	WMSSMA	As-needed	WMSSMA	<input checked="" type="checkbox"/>	<input type="checkbox"/>
West View Borough	Dept. of Public Works	Routine	WVMA, COG	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Whitaker Borough	Dept. of Public Works	As-needed	Dept. of Public Works	<input type="checkbox"/>	<input type="checkbox"/>
Whitehall Borough	Dept. of Public Works	Routine	Dept. of Public Works	<input type="checkbox"/>	<input type="checkbox"/>
Wilkins Township	Maintenance Dept.	Routine	Maintenance Dept., COG	<input type="checkbox"/>	<input type="checkbox"/>
Wilkesburg Borough	Dept. of Public Works	Routine	Dept. of Public Works, COG	<input type="checkbox"/>	<input type="checkbox"/>
Wilmerding Borough	Wilmerding Borough	As-needed	COG	<input type="checkbox"/>	<input type="checkbox"/>

Allegheny County Sanitary Authority

Intermunicipal Agreements

Agreement With	Date Enacted	Agreement Description	Expiration Date	Flow Limits (mgd)	Sampling Provisions	Flow Monitoring Provisions	Dispute Resol. Procedure	Basis of Cost Allocation
Turtle Creek Borough	1949	Original service agreement providing for uniform rate structure based on water consumption. There is no definition of sewage. Municipalities agreed to pay customer arrears, resulting in an excellent credit rating.	Bonds + 1 year		As-needed	No	No	Water Use
Wall Borough	1949	Original service agreement providing for uniform rate structure based on water consumption. There is no definition of sewage. Municipalities agreed to pay customer arrears, resulting in an excellent credit rating.	Bonds + 1 year		As-needed	No	No	Water Use
West Homestead Borough	1949	Original service agreement providing for uniform rate structure based on water consumption. There is no definition of sewage. Municipalities agreed to pay customer arrears, resulting in an excellent credit rating.	Bonds + 1 year		As-needed	No	No	Water Use
West Mifflin Borough	1949	Original service agreement providing for uniform rate structure based on water consumption. There is no definition of sewage. Municipalities agreed to pay customer arrears, resulting in an excellent credit rating.	Bonds + 1 year		As-needed	No	No	Water Use
West View Borough	1949	Original service agreement providing for uniform rate structure based on water consumption. There is no definition of sewage. Municipalities agreed to pay customer arrears, resulting in an excellent credit rating.	Bonds + 1 year		As-needed	No	No	Water Use
Whitehall Borough	1949	Original service agreement providing for uniform rate structure based on water consumption. There is no definition of sewage. Municipalities agreed to pay customer arrears, resulting in an excellent credit rating.	Bonds + 1 year		As-needed	No	No	Water Use
Wilkesburg Borough	1949	Original service agreement providing for uniform rate structure based on water consumption. There is no definition of sewage. Municipalities agreed to pay customer arrears, resulting in an excellent credit rating.	Bonds + 1 year		As-needed	No	No	Water Use
Wilmerding Borough	1949	Original service agreement providing for uniform rate structure based on water consumption. There is no definition of sewage. Municipalities agreed to pay customer arrears, resulting in an excellent credit rating.	Bonds + 1 year		As-needed	No	No	Water Use
Trafford Borough	1950		Bonds + 1 year		As-needed	No	No	Water Use
Upper St. Clair Township	1950		Bonds + 1 year		As-needed	No	No	Water Use
Blawnox Borough	1952	Upper Allegheny	Bonds + 1 year		As-needed	No	No	Water Use
O'Hara Township	1952	Upper Allegheny	Bonds + 1 year		As-needed	No	No	Water Use
Verona Borough	1952	Upper Allegheny	Bonds + 1 year		As-needed	No	No	Water Use
McCandless, Town of	1954		Bonds + 1 year		As-needed	No	No	Water Use
Wilkins Township	1954		Bonds + 1 year		As-needed	No	No	Water Use
Monroeville, Municipality of	1955		Bonds + 1 year	3.96 mgd	As-needed	Yes	No	Flow Meter
Shaler Township	1955		Bonds + 1 year		As-needed	No	No	Water Use
Neville Township	1956		Bonds + 1 year		As-needed	No	No	Water Use
Whitaker Borough	1956		Bonds + 1 year		As-needed	No	No	Water Use
East McKeesport Borough	1957		Bonds + 1 year		As-needed	No	No	Water Use
Fox Chapel Borough	1957		Bonds + 1 year	0.65 mgd	As-needed	No	No	Flow Meter
West Mifflin Borough	1962		Bonds + 1 year		As-needed	No	No	Water Use
Franklin Park Borough	1963		Bonds + 1 year		As-needed	No	No	Water Use
Wilkins Township	1965		Bonds + 1 year		As-needed	No	No	Water Use
Ohio Township	1969		Bonds + 1 year		As-needed	No	No	Water Use

Allegheny County Sanitary Authority

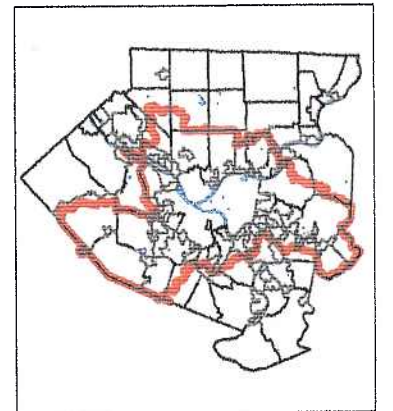
Intermunicipal Agreements

Agreement With	Date Enacted	Agreement Description	Expiration Date	Flow Limits (mgd)	Sampling Provisions	Flow Monitoring Provisions	Dispute Resol. Procedure	Basis of Cost Allocation
West Mifflin Borough	1970		Bonds + 1 year		As-needed	No	No	Water Use
Robinson Township	1971		Bonds + 1 year	0.7 mgd	As-needed	Yes	No	Flow Meter
Peters Township	1974	Original service agreement providing for uniform rate structure based on water consumption. There is no definition of sewage. Municipalities agreed to pay customer arrears, resulting in an excellent credit rating.	Bonds + 1 year		As-needed	No	No	Water Use
Colier Township	1976	Original service agreement providing for uniform rate structure based on water consumption. There is no definition of sewage. Municipalities agreed to pay customer arrears, resulting in an excellent credit rating.	Bonds + 1 year	0.93 mgd	As-needed	Yes	No	Water Use
Baldwin Borough	1984		Bonds + 1 year		As-needed	No	No	Water Use
Plum Borough	1989	New	Bonds + 1 year		As-needed	No	No	Water Use
Collier Township	1991	New	Bonds + 1 year	0.5 mgd	As-needed	Yes	No	Flow Meter
Franklin Park Borough	1991	New	Bonds + 1 year	0.547 mgd	As-needed	Yes	No	Flow Meter
McDonald Borough	1991	New	Bonds + 1 year	0.386 mgd	As-needed	Yes	No	Flow Meter
North Fayette Township	1991	New	Bonds + 1 year	0.735 mgd	As-needed	Yes	No	Flow Meter
South Fayette Township	1991	New	Bonds + 1 year	0.442 mgd	As-needed	Yes	No	Flow Meter
Mt. Lebanon, Municipality of	1994	New	Bonds + 1 year		As-needed	No	No	Water Use
Oakdale Borough	1994	New	Bonds + 1 year	0.369 mgd	As-needed	Yes	No	Flow Meter
Penn Hills, Municipality of	1995	Penn Hills	Bonds + 1 year	4.58 mgd	As-needed	Yes	No	Flow Meter
North Huntingdon Cavittsvill-Adara	Agreement not available		Bonds + 1 year		As-needed	No	No	Water Use

Allegheny County Sanitary Authority Water Pollution Control Facility Service Area and Collection System

Allegheny County
Department of Economic Development

Allegheny County, PA

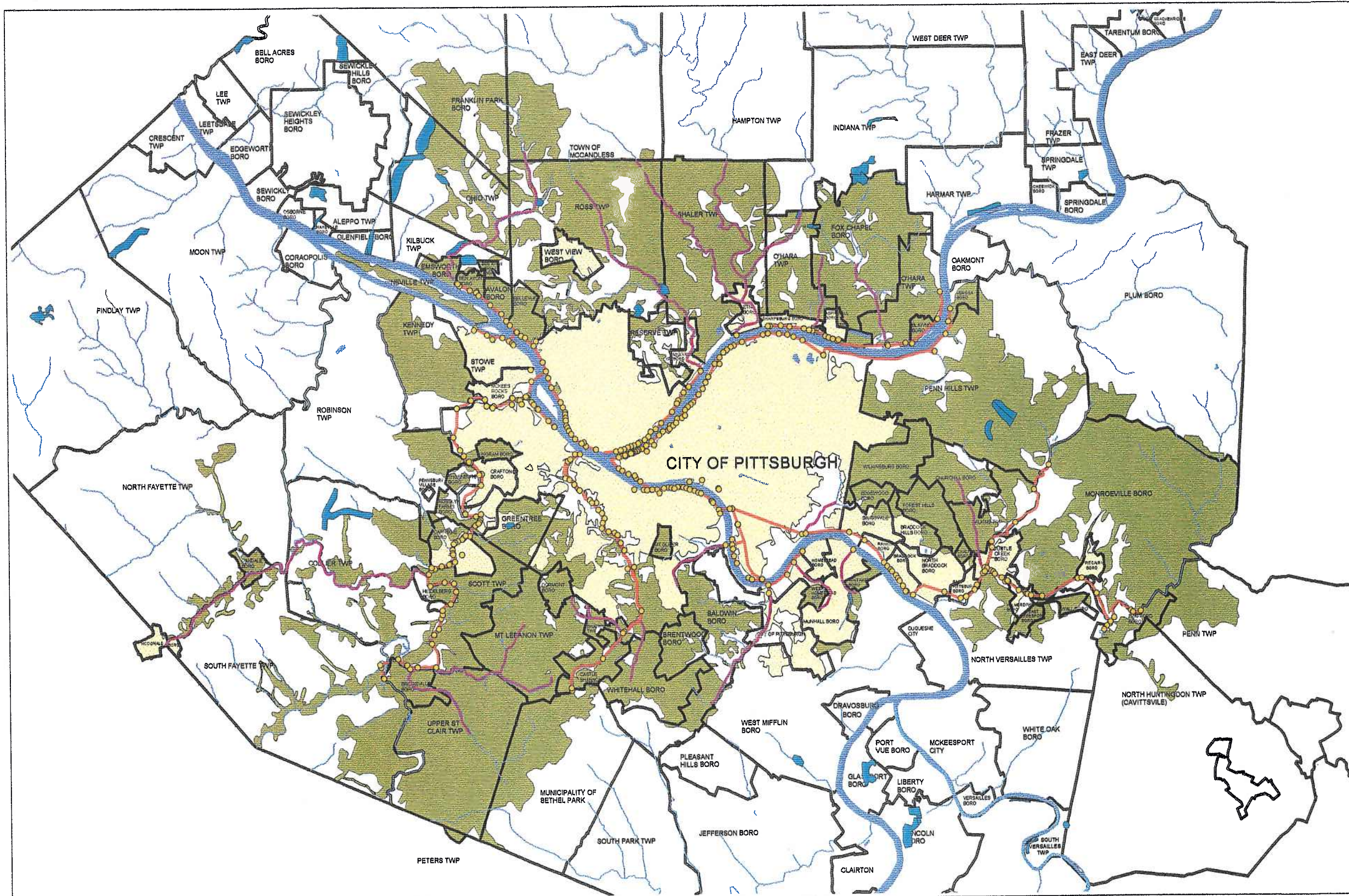


1 0 1 2 Miles



- Public Treatment Facility
- Regulator Structure
- Collection System
- Combined
- Separate
- On-Lot Problem Area
- ALCOSAN Interceptor
- Major Non ALCOSAN Trunk Sewer
- Municipal Boundary

Not Field Verified
Source: ALCOSAN Combined Sewer
Overflow Program



Allegheny Valley Joint Sewage Authority

The Allegheny Valley Joint Sewage Authority (AVJSA) was incorporated in 1959 to construct a primary treatment plant for the wastewater collected from the Allegheny Valley communities prior to discharge to the Allegheny River. Cheswick Borough, Springdale Borough, Harmar Township and Springdale Township were the original AVJSA contract municipalities. In 1961, a 2.0-mgd, primary treatment facility was placed into operation and was subsequently upgraded to a 3.0-mgd activated sludge secondary treatment in 1980.

In 1976, AVJSA entered an agreement with the newly formed Deer Creek Drainage Basin Authority (DCDBA) to provide treatment services for wastewater collected by the DCDBA's collection system in Indiana and West Deer Townships. In 1986, AVJSA re-rated the plant from 3.0 to 3.6 mgd and secured additional taps. In 1993, AVJSA expanded the plant's capacity from 3.6 mgd to 5.1 mgd to provide adequate capacity for the Orchard Park and Bakerstown areas of Richland Township. In the Deer Creek Drainage Basin Authority's service area. These extensions permitted Richland Township to abandon the Orchard Park and Fairwinds STP's, and to provide service to areas with malfunctioning, on-lot systems. Richland Township will collect and convey sewage to the DCDBA interceptor system in West Deer Township, which will convey sewage to the AVJSA STP.

In 1997, the AVJSA service area population of 28,140 is nearly evenly distributed between the initial contract municipalities and the DCDBA's service area. The plant is designed for a design population of 41,129 persons, an average daily flow of 5.1 mgd and a maximum flow of 10.2 mgd. In 1997, the average monthly flow and maximum consecutive three-month average flow was 3.68 mgd and 4.14 mgd, respectively. Based on average flows from 1993 to 1997, the plant has a reserve capacity of 1.8 million gallons. Although treatment capacity is available, AVJSA anticipates that another plant expansion may be necessary in about seven years due to continued growth throughout the service area. The plant has had an odor problem during the summer months and has installed an odor control system around the plant perimeter.

AVJSA owns and operates five pumping stations on the system, but does not own or maintain any sewer lines with the exception of the Tawney Run interceptor. The separate sanitary sewer systems from the initial contract municipalities (Cheswick, Springdale, Harmar and Springdale Township) are owned and maintained by the individual municipalities. The DCDBA owns and maintains the collection system in West Deer and Indiana Townships, and Richland Township owns and maintains its collection system to the point where it ties into the DCDBA system in West Deer. Customers from the Guys Run drainage basin in Fox Chapel are also served by the AVJSA STP via the DCDBA conveyance system. The sewers in Fox Chapel are owned and maintained by Fox Chapel Borough.

There are 14 pumping stations throughout the entire collection system tributary to the AVJSA STP. Five pump stations are owned and operated by AVJSA, four by the DCDBA, and Springdale Borough (2), Springdale Township (2) and Harmar Township (1) own the five remaining pump stations. (See the DCDBA report for information on the pump stations within the DCDBA service area.) All of the AVJSA pumping stations are within their design limits and no unpermitted bypassing occurred during 1997. AVJSA installed continuous monitoring systems at all of their pump stations and inspects their pump stations four times a week to insure proper operations. AVJSA is rehabilitating or replacing pumps, where needed, to improve pump efficiency. With adequate capacity available for future growth, the authority does not project any hydraulic overloading at the pump stations. There are no reported problems at the municipally owned pump stations with the exception of the Springdale Township McKinley Avenue and Carson Street pump stations. These pump stations bypass occasionally, and the ACHD has asked Springdale Township to develop a plan to eliminate bypassing incidents.

AVJSA Tawney Run interceptor experiences inflow during wet weather, and both Springdale Borough and Springdale Township have initiated inflow correction activities to lessen the wet weather impacts on this line. On the local municipal systems, Springdale Borough dye tested all properties to identify any illegal connections and required property owners to correct any identified violations in a timely manner. In 1998, Springdale Borough passed an ordinance requiring dye testing and a municipal lien letter prior to the sale of real estate. Harmar Township initiated a voluntary sewer-monitoring program to obtain accurate flow data for the sanitary sewer system, and both Cheswick and Springdale Township are actively cleaning and televising sewer lines with equipment from the COG. The Allegheny Valley communities use their street crews for sewer maintenance.

AVJSA adopted a Sewer Use Ordinance in 1986, which has been enacted by all of the service area communities including the DCDBA. AVJSA received an exemption from the EPA for development of an approved industrial waste pretreatment program on the basis that the majority of the industrial customers only contribute domestic flow. Based on annual survey information from all industrial customers, AVJSA updates an industrial survey report to insure that no users have begun to discharge industrial waste into the system. Per the sewer use ordinance adopted in 1986, service agreements with industrial customers have a maximum life of five years.

The AVJSA service area population of 28,140 is projected to increase to approximately 41,044 by 2015. Based on the 2015 population increase, the hydraulic and organic loadings to the treatment plant are expected to increase by 46% percent. The hydraulic loading is projected to increase to approximately 5.37 MGD, and the organic loading is projected to increase to approximately 9,376 lbs. CBOD₅/day. The hydraulic and organic loading capacities of the plant appear to be adequate for average daily flow and loading conditions in 2015.

Allegheny Valley Joint Sewage Authority

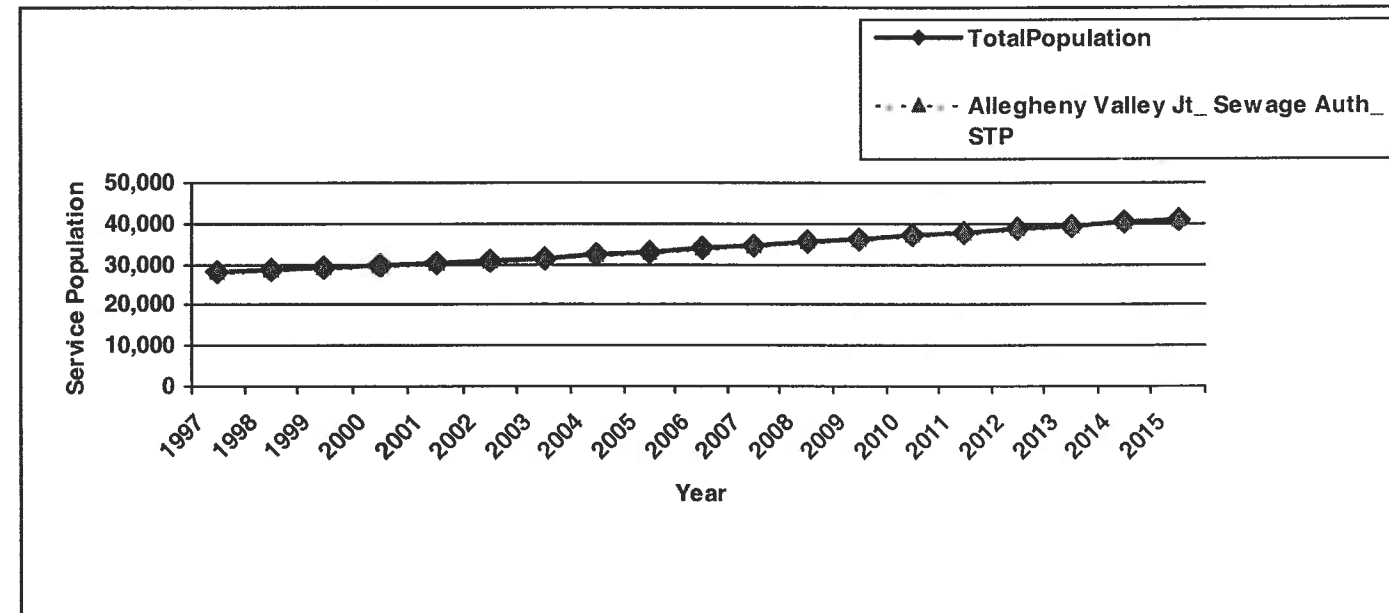
Service Area Summary

POTW Name	1997 Service Population	2015 Service Population	Municipality	Type Of Sewer System
Allegheny Valley Jt. Sewage Auth. STP	28140	41044	Cheswick Borough	Separate
			Harmar Township	Separate
			Indiana Township	Separate
			Richland Township	Separate
			Springdale Borough	Separate
			Springdale Township	Separate
			West Deer Township	Separate

Treatment Process Summary

POTW Name	Equalization	Screening	Comminution	Grit Removal	Prechlorination	Primary Treatment	Activated Sludge	Extended Aeration	Contact Stabilization	Trickling Filter	Disinfection	Dechlorination	Filtration	Regeneration	Thickening	Aerobic Digestion	Anaerobic Digestion	Line Stabilization	Composting	Thermal Processing	Dewatering	Land Application	Landfill	Incineration	Haul to other STP	Odor Control
Allegheny Valley Jt. Sewage Auth. STP		■	■	■		■	■				■															

Service Population Projections



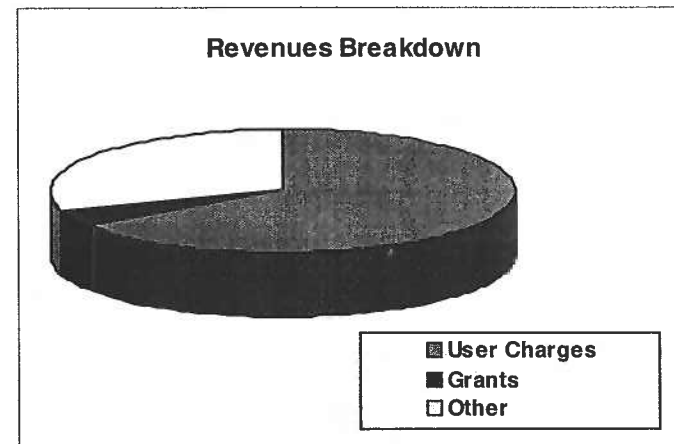
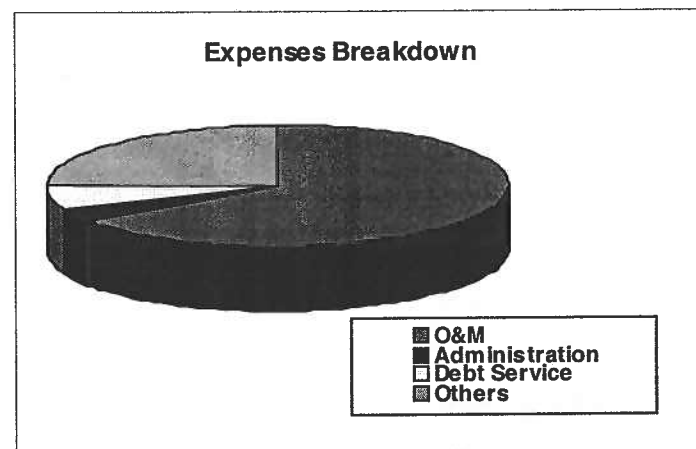
Allegheny Valley Joint Sewage Authority

Sewer Use Ordinances

Municipality	Corrective Action Plan	Grease Trap Requirement	Industrial Pretreatment Program	Illicit Connection Inspection At Sale	Surcharge
Cheswick Borough			AVJSA Sewer Use Ordinance		
Harmar Township			AVJSA Sewer Use Ordinance		
Indiana Township	Yes		ALCOSAN	No	
Richland Township	Completed	Yes	AVJSA Sewer Use Ordinance	Yes, inspection at time of sale or reassessment	
Springdale Borough		No	AVJSA Sewer Use Ordinance	Yes	
Springdale Township			AVJSA Sewer Use Ordinance		
West Deer Township			AVJSA Sewer Use Ordinance		

Financial Information

REVENUES		
User Charges:		\$1,363,353
Grants:		\$93,243
Other:		\$625,622
Total Revenues		\$2,082,218
EXPENSES		
Operations and Maintenance		\$810,506
Administration:		\$41,132
Debt Service:		\$81,952
Other:		\$300,708
Total Expenses		\$1,234,298
Surplus(Deficit):		\$847,920
Debt Service Coverage Ratio		11.35
Information Source:	YEAR: 1998	Actual/Budgeted
Revenues	AVJSA Audit Report (Malin, Landis, & Co.)	Actual
Expenses	AVJSA Audit Report (Malin, Landis, & Co.)	Actual

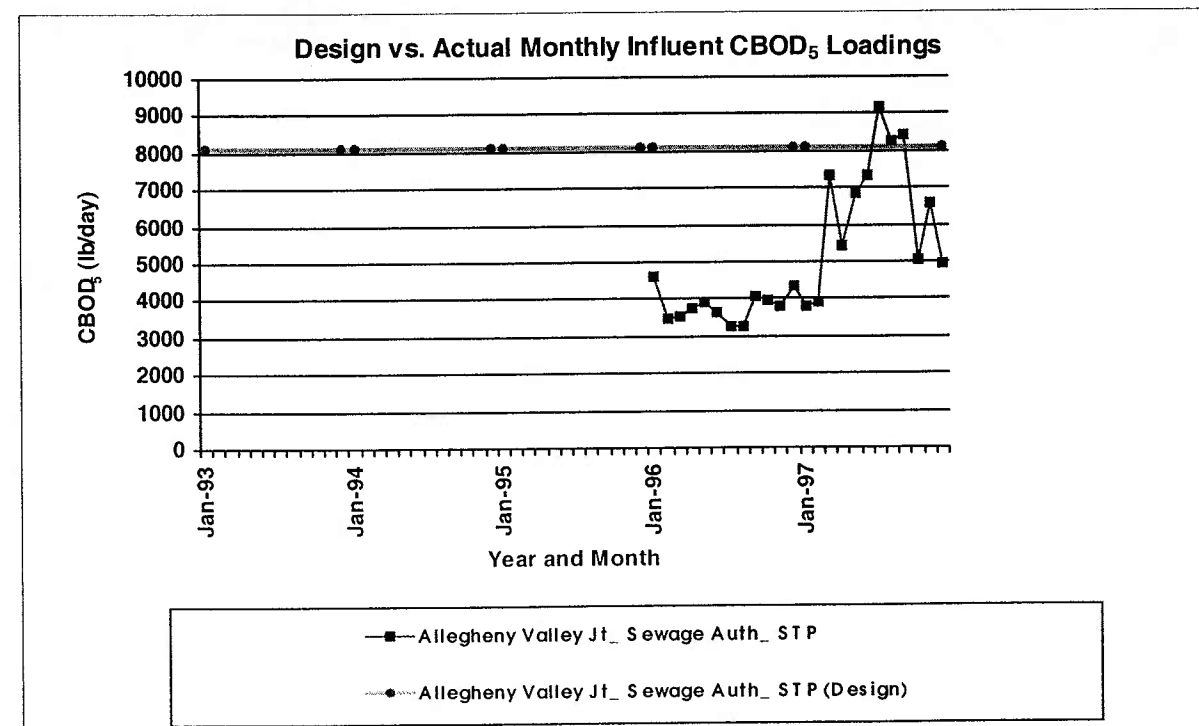
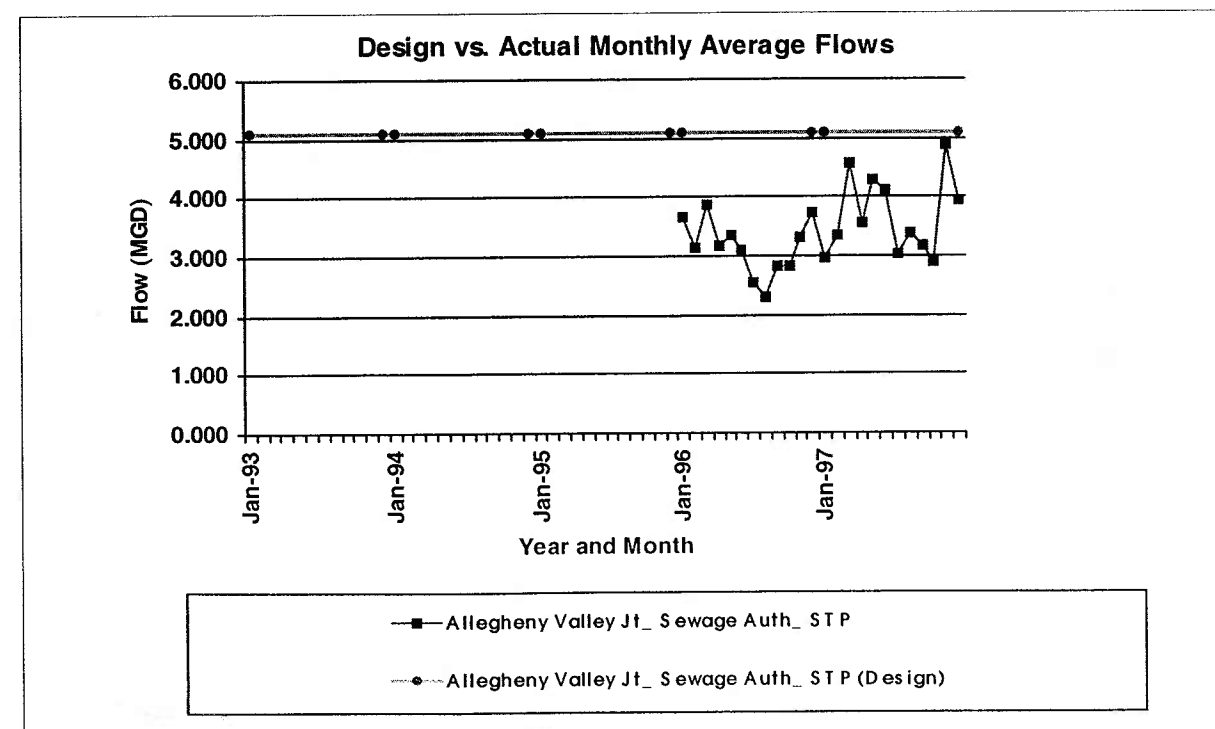


Allegheny Valley Joint Sewage Authority

1997 Plant Performance

Allegheny Valley Jt. Sewage Auth.	Average Daily Flow (mgd)			CBOD ₅ (lb/Day)			TSS (lb/Day) Effluent			Effluent Coliform (Col./100ml)		
	Monthly	Summer	Winter	Average Effluent	Summer	Winter	Average	Summer	Winter	Average Daily	Summer	Winter
January	3.0			273			397			326		
February	3.4			448			727			nd		
March	4.6			304			570			nd		
April	3.6			268			387			nd		
May	4.3			287			574			nd		
June	4.1			240			446			nd		
July	3.0			227			353			nd		
August	3.4			169			253			nd		
September	3.4			169			253			nd		
October	2.9			194			316			nd		
November	4.9			409			735			nd		
December	3.9			393			622			nd		
Maximum	4.9	5.1	5.1	448	1063	1063	735	1276	1276	326	200	2000
Max as % Limit	96%			42%			58%			163%		
Average	3.7			282			469			326		
3 Month > Limit?	No											

Plant Loading Summary



Allegheny Valley Joint Sewage Authority

Intermunicipal Agreements

Agreement With	Date Enacted	Agreement Description	Expiration Date	Flow Limits (mgd)	Rate and Surcharge Provisions	Sampling Provisions	Flow Monitoring Provisions	Dispute Resol. Procedure	Basis of Cost Allocation
Cheswick, Borough of	01/01/61	Initial Service Agreement with Contracting Municipalities of Cheswick B., Springdale B., Harmar T. and Springdale T.	The end of the fiscal year during which the Trustee shall have released, cancelled, discharged, and satisfied the Indenture and the lien in accordance with the provisions of the Indenture	None		None			Water consumption
Deer Creek Drainage Basin Authority	07/05/88	DCDBA will pay the entire cost of the first 1.5 MGD expansion to the AVJSA treatment plant to extend its rated capacity to 5.1 MGD. Further necessary expansion will be shared by AVJSA and DCDBA							
Deer Creek Drainage Basin Authority	01/01/76	The AVJSA is in agreement for transporting, treating, and disposing of sanitary sewage from the Contracting Municipalities	The latest maturity date of any sewer revenue bond or 99 years				Flow meters at connection points	Arbitration	A sewage service charge equal to 100% of Deer Creek Users' share of operating expenses of Allegheny Valley Auth. not paid from governmental contributions plus an add'l service charge equal to 120% of Deer Creek Users' share of ave. annual debt service requirements
Harmar Township	01/01/61	Initial Service Agreement with Contracting Municipalities of Cheswick B., Springdale B., Harmar T. and Springdale T.	The end of the fiscal year during which the Trustee shall have released, cancelled, discharged, and satisfied the Indenture and the lien in accordance with the provisions of the Indenture	None		None			Water consumption
Indiana, Township of	01/01/76	The AVJSA is in agreement for transporting, treating, and disposing of sanitary sewage from the Contracting Municipalities	The latest maturity date of any sewer revenue bond or 99 years				Flow meters at connection points	Arbitration	A sewage service charge equal to 100% of Deer Creek Users' share of operating expenses of Allegheny Valley Auth. not paid from governmental contributions plus an add'l service charge equal to 120% of Deer Creek Users' share of ave. annual debt service requirements
Springdale Township	01/01/61	Initial Service Agreement with Contracting Municipalities of Cheswick B., Springdale B., Harmar T. and Springdale T.	The end of the fiscal year during which the Trustee shall have released, cancelled, discharged, and satisfied the Indenture and the lien in accordance with the provisions of the Indenture	None		None			Water consumption
Springdale, Borough of	01/01/61	Initial Service Agreement with Contracting Municipalities of Cheswick B., Springdale B., Harmar T. and Springdale T.	The end of the fiscal year during which the Trustee shall have released, cancelled, discharged, and satisfied the Indenture and the lien in accordance with the provisions of the Indenture	None		None			Water consumption
Township of Richland	12/15/90	AVJSA agreed to furnish sanitary sewage treatment and disposal service to the sewered portions of the contracting municipalities, and under which of said contracting municipalities has agreed to deliver to the sewer system of the Authority, for transportation, treatment, and disposal, all sanitary sewage originating in its respective service areas	The latest maturity date of any sewer revenue bond or 99 years	None		None		Arbitration	
West Deer, Township of	01/01/76	The AVJSA is in agreement for transporting, treating, and disposing of sanitary sewage from the Contracting Municipalities	The latest maturity date of any sewer revenue bond or 99 years				Flow meters at connection points	Arbitration	A sewage service charge equal to 100% of Deer Creek Users' share of operating expenses of Allegheny Valley Auth. not paid from governmental contributions plus an add'l service charge equal to 120% of Deer Creek Users' share of ave. annual debt service requirements

Allegheny Valley Joint Sewage Authority

Collection System Facilities

TREATMENT PLANT	Design Capacity (MGD)	Biological Treatment	Owner	Operator
Allegheny Valley Jt. Sewage Auth. STP	5.1	Activated Sludge	AVJSA	AVJSA
<u>Pump Station</u>	<u>Peak Capacity</u>	<u>Avg Daily Flow</u>	<u>Owner</u>	<u>Operator</u>
Acmetonia	8.64 mgd	1.29 mgd	AVJSA	AVJSA
Carson St.			Springdale Twp.	Springdale Twp.
Cheswick	1.44 mgd	0.183 mgd	AVJSA	AVJSA
Colfax	2.02 mgd	0.53 mgd	AVJSA	AVJSA
Duquesne	2.59 mgd	0.507 mgd	AVJSA	AVJSA
Forest Highlands			Harmar Twp.	Harmar Twp.
Guys Run	1.73 mgd	0.428 mgd	AVJSA	AVJSA
McKinley Ave.			Springdale Twp.	Springdale Twp.
Oakwood			Springdale B.	Springdale B.
Railroad St. P.S.	40 gpm		Springdale B.	Springdale B.
<u>Equalization Basin</u>	<u>Capacity</u>	<u>Location</u>	<u>Owner</u>	<u>Operator</u>
None				

Sewer Maintenance Information

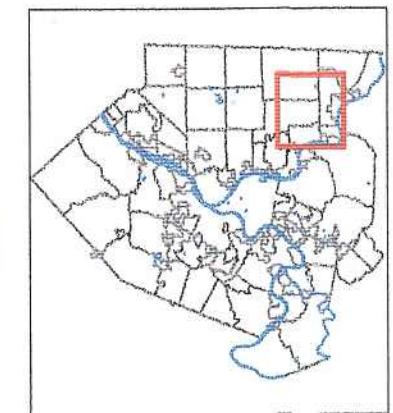
Service Community	Maintained By:	Mainten. Done:	Equipment Source	I/I Removal	I/I Flow Monitor
Cheswick Borough	Cheswick Borough	No Data	No Data	<input type="checkbox"/>	<input type="checkbox"/>
Fox Chapel Borough	Borough of Fox Chapel	As-needed	No Data	<input type="checkbox"/>	<input type="checkbox"/>
Harmar Township	Public Works Dept.	As-needed	COG	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Indiana Township	DCDBA	Routine	Authority, Contractor, COG	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Richland Township	Public Works Dept.	Routine	Pub. Wrks, Contract., COG	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Springdale Borough	Borough of Springdale	No Data	No Data	<input type="checkbox"/>	<input type="checkbox"/>
Springdale Township	Township of Springdale	As-needed	COG	<input type="checkbox"/>	<input type="checkbox"/>
West Deer Township	DCDBA	Routine	Authority, Contractor, COG	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Allegheny Valley Joint Sanitary Authority

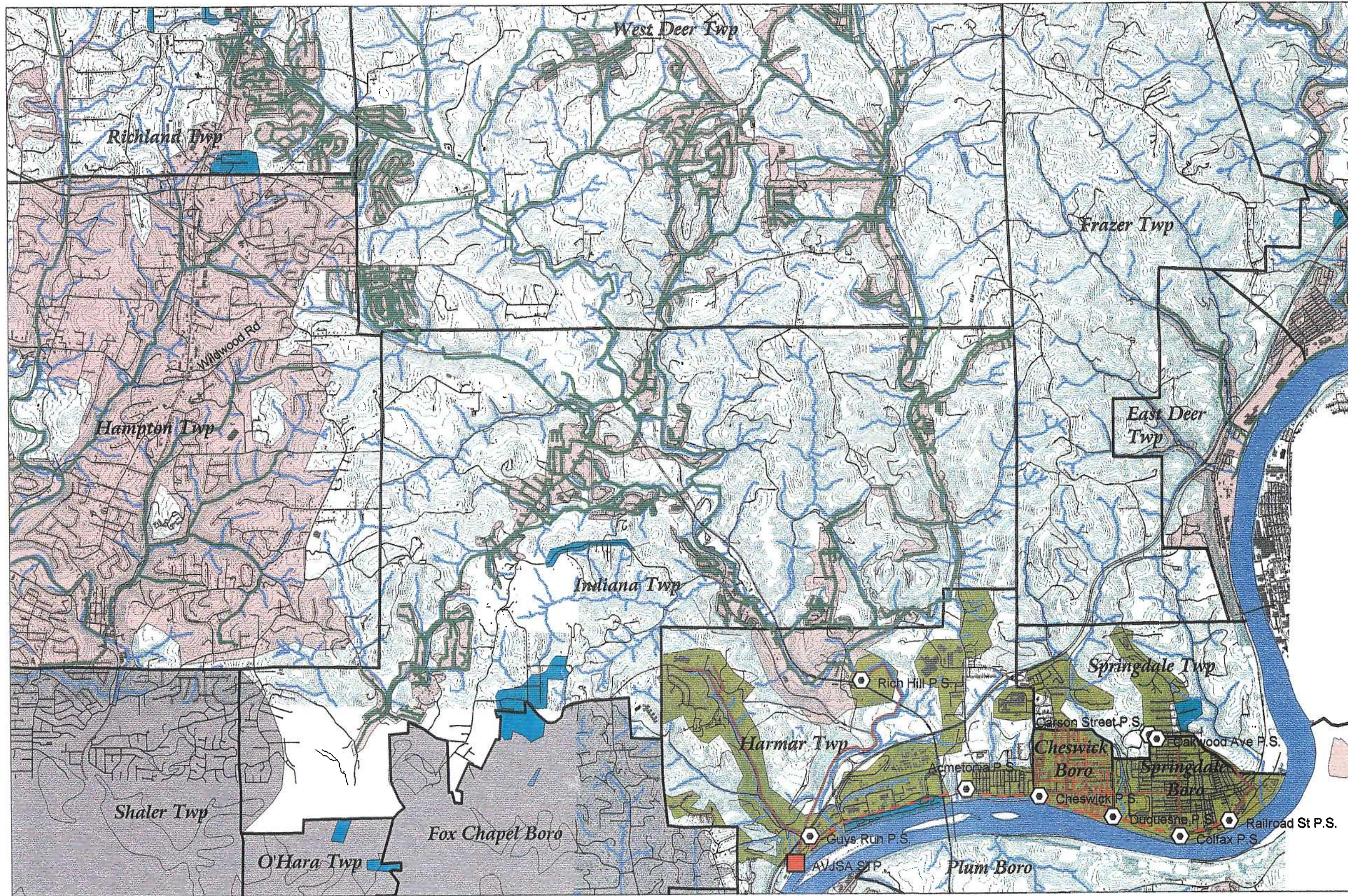
Water Pollution Control Facility
Service Area and Collection
System

Allegheny County
Department of Economic Development

Allegheny County, PA



2000 0 2000 Feet



- Public Treatment Facility
- Existing STP
- Pump Station
- Municipal Boundary
- Major Road
- Contour
- Hydrologic Feature
- Building
- Collection System
- Separate
- On - Lot Problem Area
- Pipe Type
- Collector
- Force Main
- Pipe Type
- Neighboring Service Area
- Neighboring Collection System
- ALCOSAN Service Area



Not Field Verified
Source: Allegheny Valley Joint Sanitary Authority
Springdale Boro. Sewer Lines

Bell Acres Municipal Authority

The Bell Acres Municipal Authority (BAMA) is a treatment and collection authority serving approximately 144 customers in Bell Acres. There are four Sewage Treatment Plants (STP) which serve Bell Acres Borough the Grouse Ridge STP, Sewickley Heights #1 STP, Sewickley Heights #2 STP, and Sewickley Heights #3 STP. Sewickley Heights #1, #2 and #3 STPs are referred to as Bell Acres #1, #2, and #3 STPs, respectively, by the BAMA. All four STPs are owned by BAMA. The Grouse Ridge STP is a 6,650-gpd extended aeration package plant which discharges to a dry drainage swale which is a tributary of an unnamed tributary of Big Sewickley Creek (a watershed classified as a trout stocked fishery). The Sewickley #1 STP is a 16,000-gpd extended aeration plant, which discharges at the headwaters of a stream, which is tributary to Little Sewickley Creek. The Sewickley #2 STP is a 28,000-gpd extended aeration plant. The Sewickley #3 STP is an 8,000-gpd extended aeration package plant. Sewickley #2 and Sewickley #3 discharge to unnamed tributaries of Little Sewickley Creek. Chlorine tablets are used for disinfection at all four of these STPs.

The Grouse Ridge STP was constructed under a permit issued August 25, 1981 to the Grouse Ridge Homeowner's Association to treat an average daily flow of 6,650-gpd. On September 7, 1994, the Department of Environmental Protection (DEP) approved a request to remove the rapid sand filters from service, because permit limits were achieved without the tertiary treatment. On November 21, 1997, the Grouse Ridge Homeowner's Association transferred and renewed the NPDES permit under the Bell Acres Municipal Authority.

Sewickley #1, #2 and #3 STPs were installed by developers in the mid to late 1960's. The Bell Acres Municipal Authority took over Sewickley #1 STP in 1996. Sewickley #2 was upgraded in 1996 with money from the Bell Farms developer.

The Bell Acres Municipal Authority owns all sewer lines. With the exception of the four-inch diameter, force main from the Bell Farms Pump Station, all sewer lines are eight inches in diameter. There are no combined sewers or points of intermunicipal connection for any of the four STPs in the Bell Acres Borough. There is one pump station (PS), the Bell Farms PS which was installed in 1996 to transport flow from the Bell Farms subdivision to Sewickley #2 STP; the PS has two pumps, an emergency overflow and telemetry.

An outside contractor performs most cleaning, inspection, and rehabilitation on the collection system and pump stations on an as-needed basis, although a modest amount of such maintenance is performed regularly through the BAMA proactive maintenance and rehabilitation program. Bell Acres Borough is a member of the Quaker Valley Council of Government (QVCOG) and uses the QVCOG equipment for some maintenance activities. A representative of Wastewater Specialty Services operates all four STPs. The representative visits the plants twice per week and performs the necessary sampling.

The Bell Acres service area population of approximately 327 is projected to increase to approximately 340 by 2015. Based on the 2015 population increase, the hydraulic and organic loadings to the treatment plants are expected to increase by four percent. The hydraulic loading projected for the year 2015 at all four treatment plants, is below the current permitted hydraulic limit. The current hydraulic loading capacity of these four facilities appears to be adequate for the year 2015. Organic loading data was not available for the STPs.

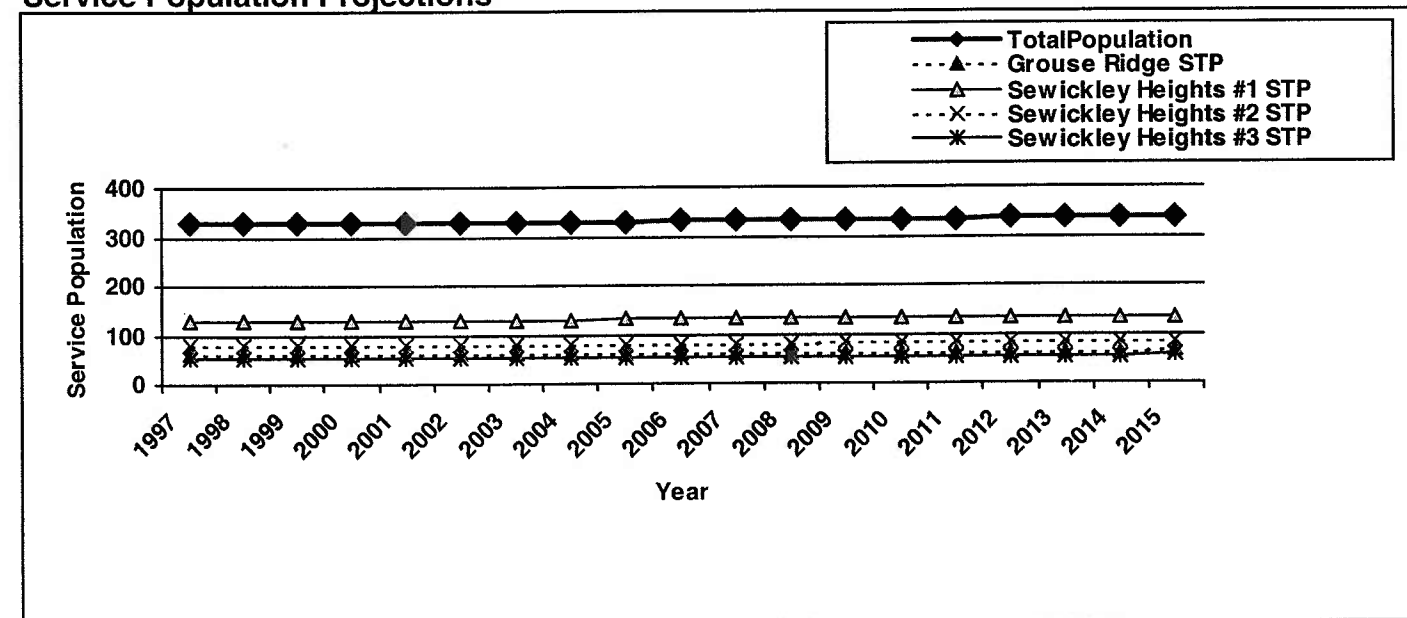
Service Area Summary

POTW Name	1997 Service Population	2015 Service Population	Municipality	Type Of Sewer System
Grouse Ridge STP	62	65	Bell Acres Borough	Separate
Sewickley Heights #1 STP	130	135	Bell Acres Borough	Separate
Sewickley Heights #2 STP	81	84	Bell Acres Borough	Separate
Sewickley Heights #3 STP	54	56	Bell Acres Borough	Separate

Treatment Process Summary

POTW Name	Equalization	Screening	Comminution	Grit Removal	Prechlorination	Primary Treatment	Activated Sludge	Extended Aeration	Contact Stabilization	Trickling Filter	Disinfection	Dechlorination	Filtration	Reaeration	Thickening	Aerobic Digestion	Anaerobic Digestion	Line Stabilization	Composting	Thermal Processing	Dewatering	Land Application	Landfill	Incineration	Haul to other STP	Odor Control
Grouse Ridge STP		■					■	■																		■
Sewickley Heights #1 STP			■				■																			■
Sewickley Heights #2 STP			■				■																			■
Sewickley Heights #3 STP		■	■				■																			■

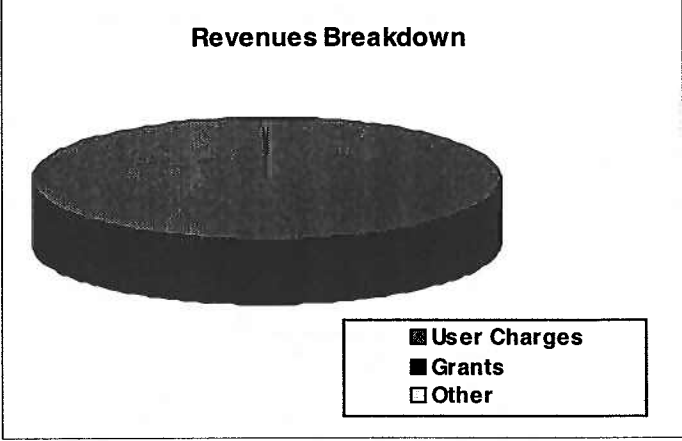
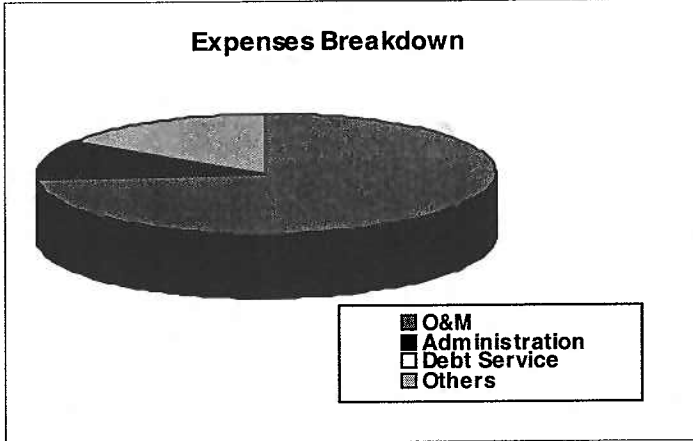
Service Population Projections



Bell Acres Municipal Authority

Sewer Use Ordinances

Municipality	Corrective Action Plan	Grease Trap Requirement	Industrial Pretreatment Program	Illicit Connection Inspection At Sale	Surcharge
Bell Acres Borough	No	No	No	Yes	

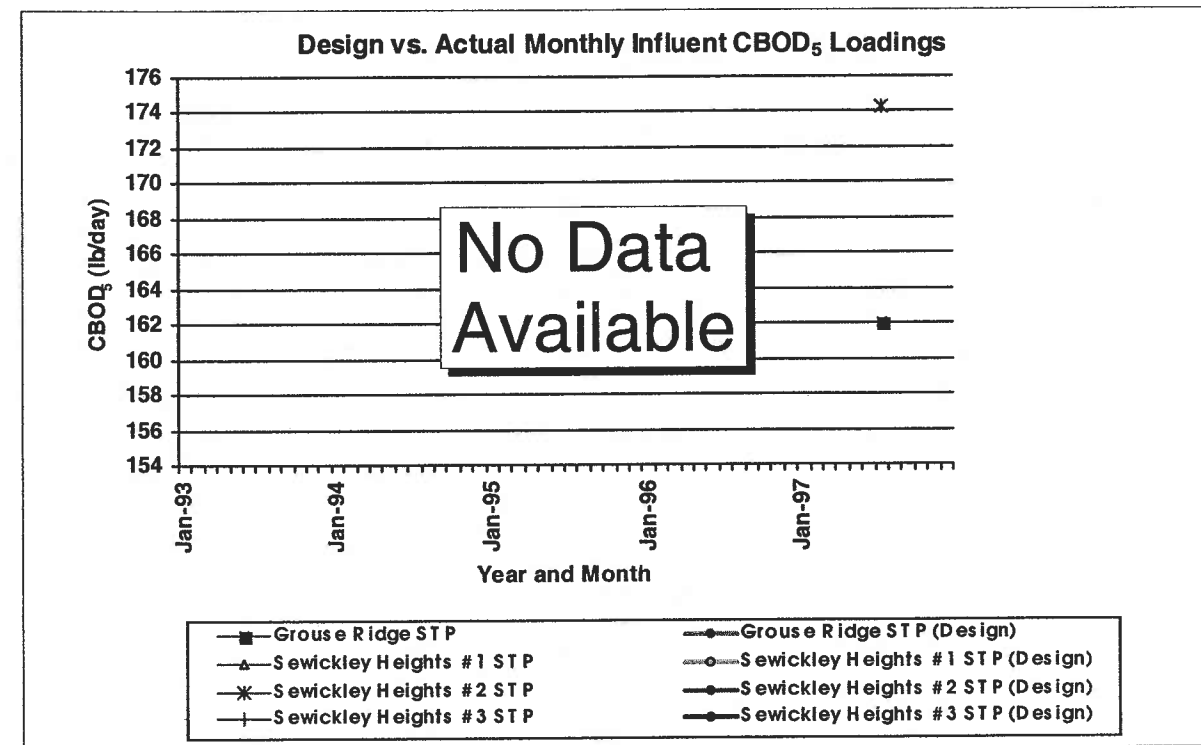
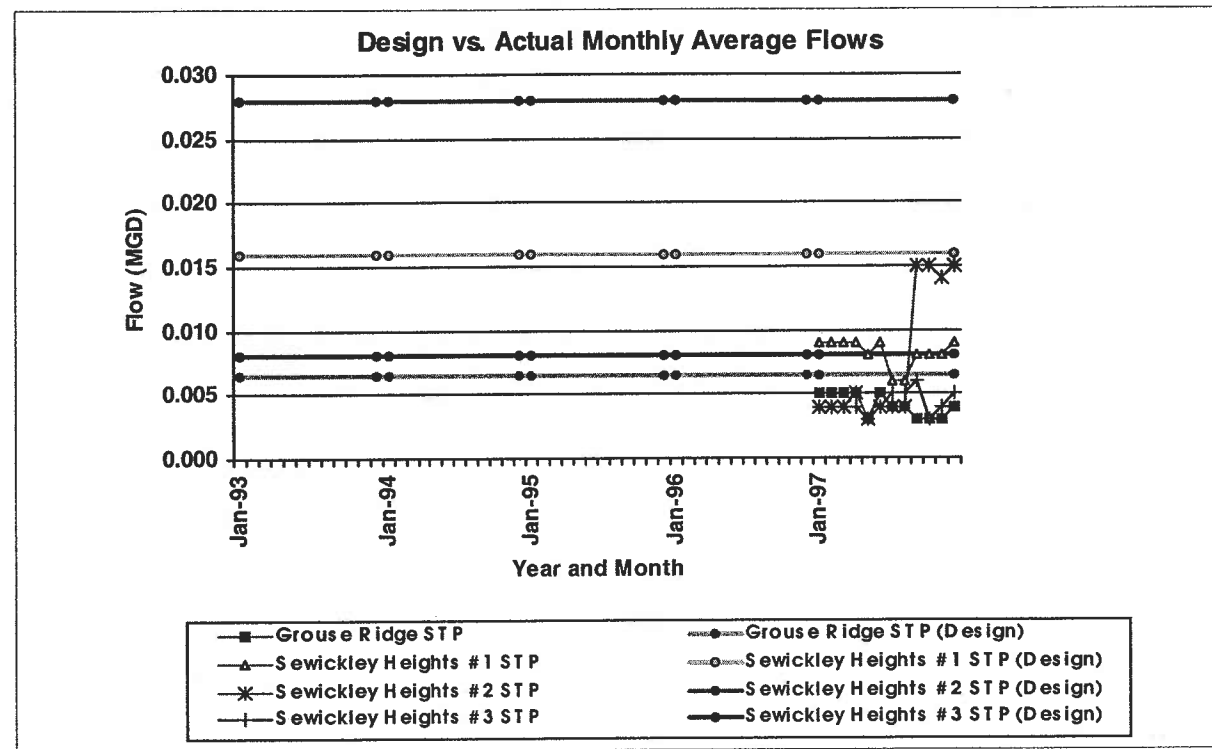


Financial Information

REVENUES		
User Charges:		\$45,239
Grants:		\$0
Other:		\$158
Total Revenues		\$45,397
EXPENSES		
Operations and Maintenance		\$32,469
Administration:		\$4,558
Debt Service:		\$0
Other:		\$6,929
Total Expenses		\$43,956
Surplus(Deficit):		\$1,441
<i>Debt Service Coverage Ratio</i>		
YEAR:	1997	Actual/ Budgeted
Information Source:		
Revenues	Statistics For Municipal Authorities in PA	Actual
Expenses	Statistics For Municipal Authorities in PA	Actual

Bell Acres Municipal Authority

Plant Loading Summary



Bell Acres Municipal Authority

Collection System Facilities

TREATMENT PLANT	Design Capacity (MGD)	Biological Treatment	Owner	Operator
Grouse Ridge STP	0.0065	Extended Aeration	BAMA	Contractor
Pump Station	Peak Capacity	Avg Daily Flow	Owner	Operator
None				
Equalization Basin	Capacity	Location	Owner	Operator
Grouse Ridge STP		At Plant	BAMA	Contractor

TREATMENT PLANT	Design Capacity (MGD)	Biological Treatment	Owner	Operator
Sewickley Heights #1 STP	0.016	Extended Aeration	BAMA	Contractor
Pump Station	Peak Capacity	Avg Daily Flow	Owner	Operator
None				
Equalization Basin	Capacity	Location	Owner	Operator
None				

TREATMENT PLANT	Design Capacity (MGD)	Biological Treatment	Owner	Operator
Sewickley Heights #2 STP	0.028	Extended Aeration	BAMA	Contractor
Pump Station	Peak Capacity	Avg Daily Flow	Owner	Operator
Bell Farms			BAMA	Contractor
Equalization Basin	Capacity	Location	Owner	Operator
None				

TREATMENT PLANT	Design Capacity (MGD)	Biological Treatment	Owner	Operator
Sewickley Heights #3 STP	0.008	Extended Aeration	BAMA	Contractor
Pump Station	Peak Capacity	Avg Daily Flow	Owner	Operator
None				
Equalization Basin	Capacity	Location	Owner	Operator
None				

Sewer Maintenance Information

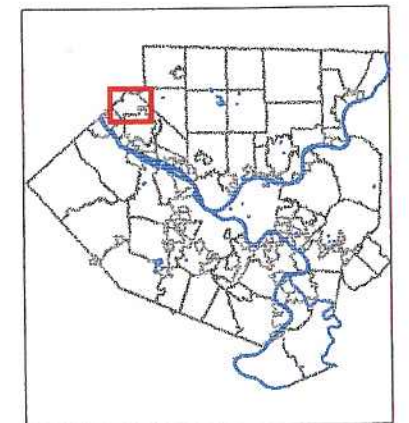
<i>Service Community</i>	<i>Maintained By:</i>	<i>Mainten. Done:</i>	<i>Equipment Source</i>	<i>I/I Removal</i>	<i>I/I Flow Monitor</i>
Bell Acres Borough	Contractor	As-needed	No Data	<input type="checkbox"/>	<input type="checkbox"/>

Bell Acres Municipal Authority

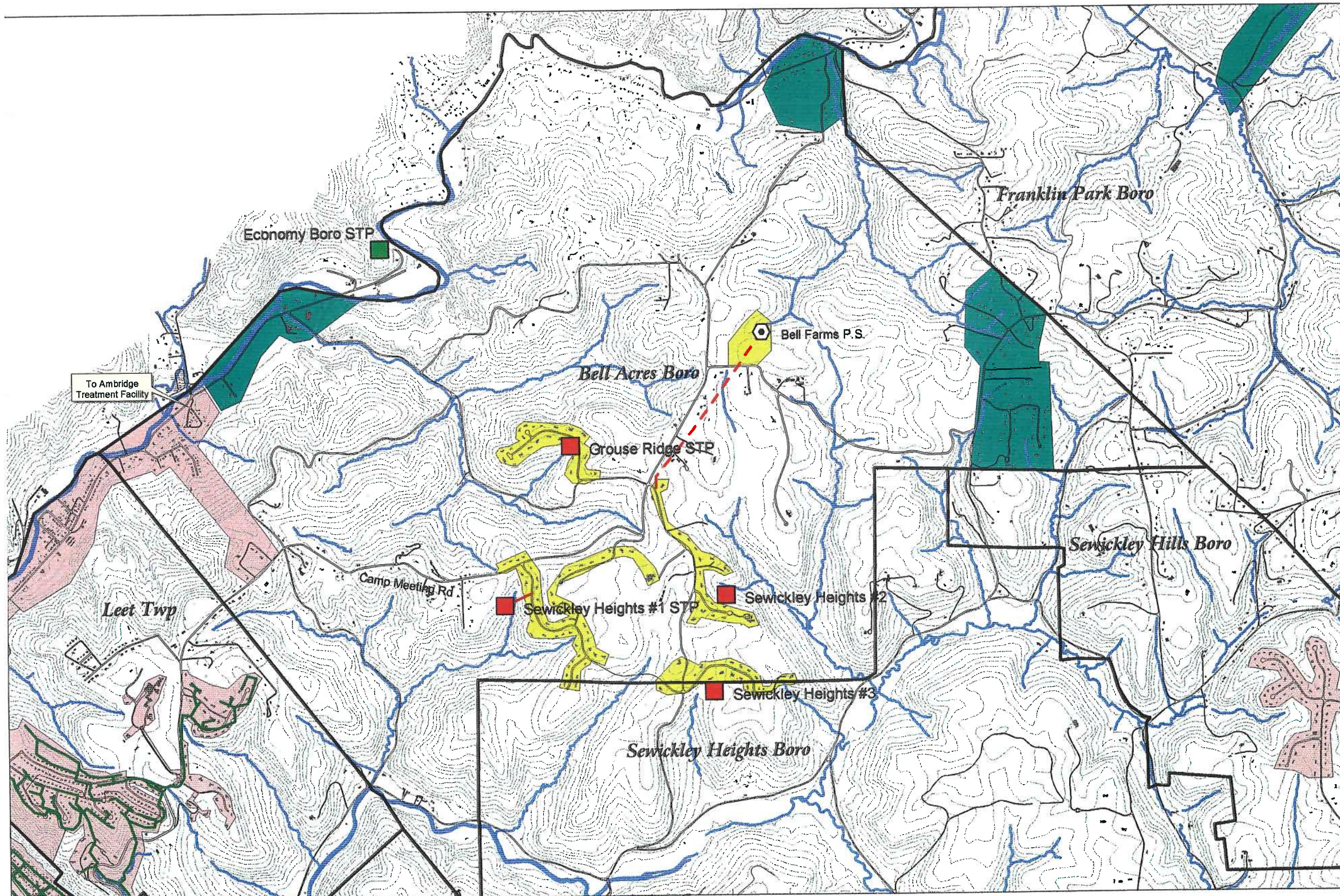
Water Pollution Control Facilities Service Areas and Collection Systems

Allegheny County
Department of Economic Development

Allegheny County, PA



500 0 500 1000 Feet



- Public Treatment Facility
 - Existing STP
 - Proposed STP
 - Pump Station
 - Municipal Boundary
 - Major Road
 - Contour
 - Hydrologic Feature
 - Building
 - Collection System
 - Separate
 - On-Lot Problem Area
 - Pipe Type
 - Collector
 - Force Main
 - Trunk
 - Neighboring Service Area
 - Neighboring Collection System
- Not Field Verified

Source: Bell Acres Municipal Authority

Bethel Park Municipal Authority

The Bethel Park Municipal Authority (BPMA) is a treatment and collection agency, serving customers from Bethel Park Borough and South Park Township. In 1997, approximately 7,506 customers from Bethel Park and approximately 2,694 customers from South Park were served by the Piney Fork Sewage Treatment Plant (STP). The treatment plant utilizes trickling filters for biological treatment and discharges to Piney Fork Creek. The BPMA board is comprised of five Bethel Park residents and two South Park residents.

The Piney Fork STP has been owned and operated by BPMA since 1960. The original facility was rated for an average daily hydraulic capacity of 2.7 mgd and utilized anaerobic sludge digestion and two-stage, high-rate biological filters. From 1978 through 1980, the plant was expanded and upgraded to the present treatment facilities and an average daily hydraulic capacity of 4.1 mgd. Modifications to the sand filters, trickling filters, grit collection unit, primary clarifier piping, and chlorination/dechlorination facilities occurred from 1995 to 1998. The plant is permitted for an organic load of 6,155 lb CBOD₅/day. The average monthly flow in 1997 was 3.3 mgd and the average monthly organic loading was approximately 4,300 lb CBOD₅/day.

In 1994, the Piney Fork STP was hydraulically overloaded and maximum three-month flow projections indicated probable overload conditions in the future. BPMA developed a Corrective Action Plan (CAP) for the Piney Fork Watershed and submitted a report to the Department of Environmental Protection (DEP) which developed a Plan of Action for implementation of capital improvements in May 1994. The Plan of Action was approved by DEP as part of a Consent Order in June 1995. Major improvement items included were expansion the Lick Run Pump Station, various improvements at the treatment plant, and the construction of a 3.0 million-gallon flow equalization facility at the treatment plant. It is anticipated that the completion of these projects will eliminate the hydraulic overloading at the STP.

The sewer system tributary to the Piney Fork STP was constructed in the 1950s. Both Bethel Park and South Park operate separate sanitary sewer systems. The combined length of these sewer systems is approximately 125 miles. Bethel Park operates and performs routine maintenance on the collector sewers and pump station located within the borough boundaries and the entire interceptor sewer system, tributary to the STP. A full-time staff person is dedicated to the sewer system maintenance and inspection program. The borough owns a mobile pressure sewer cleaner and the tools necessary for routine maintenance. Routine inspection and cleaning is performed on sections of sewer line with a slope of less than one percent. As part of the CAP, all manholes in the watershed will be inspected to identify sources of extraneous flow. The original Bethel Park collection system contained three pump stations. Presently, one pump station is in operation, the Lick Run Pump Station. The Lick Run Pump Station was upgraded in the fall of 1998 to eliminate a sanitary sewer overflow (SSO). An emergency bypass remains at the Piney Fork STP flow equalization basin.

The remaining portions of Bethel Park are served by ALCOSAN. Bethel Park Borough and Upper St. Clair Township are discussing the addition of a 4.0 million-gallon flow equalization facility in the McLaughlin Run Watershed, which falls in the ALCOSAN service area.

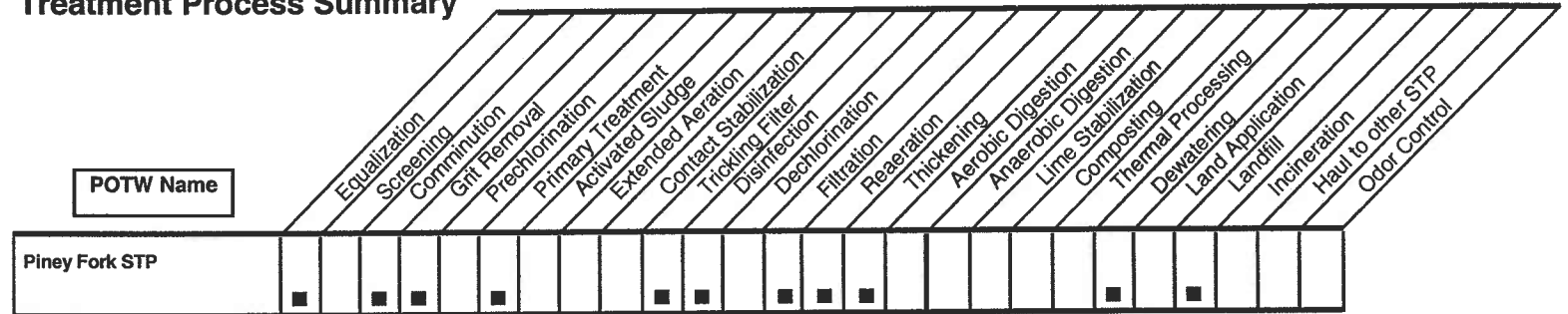
South Park is responsible for the operation and routine maintenance of the collector sewers located within the township boundaries. South Park is also under the CAP and has implemented a manhole inspection and rehabilitation program. South Park has a dedicated sewer maintenance crew. Flow monitoring equipment, internal televising equipment, and trucks and excavation equipment from the township street department, are available for routine maintenance. South Park is a member of the South Hills Area Council of Governments (SHACOG). The township utilizes SHACOG equipment for sewer cleaning.

The Piney Fork STP service area population of approximately 27,856 is projected to increase to approximately 33,400 by 2015. Based on the 2015 population increase, the hydraulic and organic loadings to the treatment plant are expected to increase by 20 percent. The hydraulic loading is projected to increase to approximately 3.9 mgd, and the organic loading is projected to increase to approximately 5,100 lb CBOD₅/day. The hydraulic and organic loading capacities of the plant appear to be adequate for projected average daily flow and loading conditions in 2015.

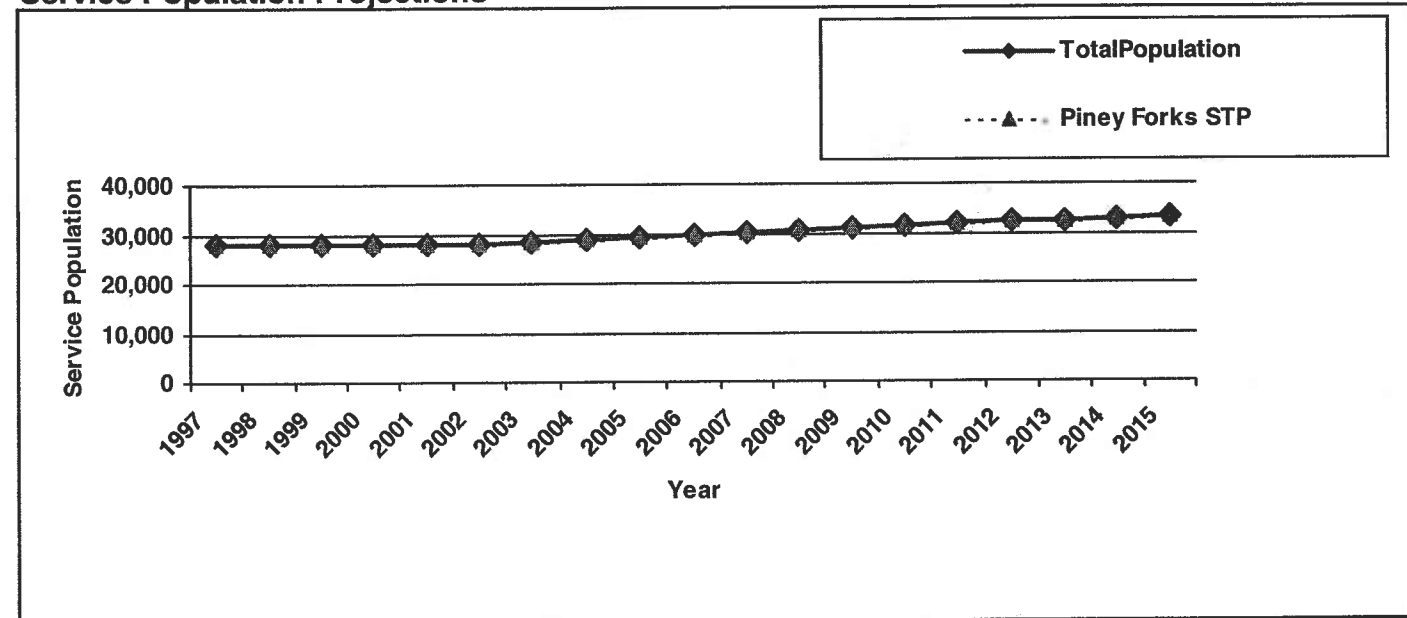
Service Area Summary

POTW Name	1997 Service Population	2015 Service Population	Municipality	Type Of Sewer System
Piney Forks STP	27856	33433	Bethel Park Borough South Park Township	Separate Separate

Treatment Process Summary



Service Population Projections

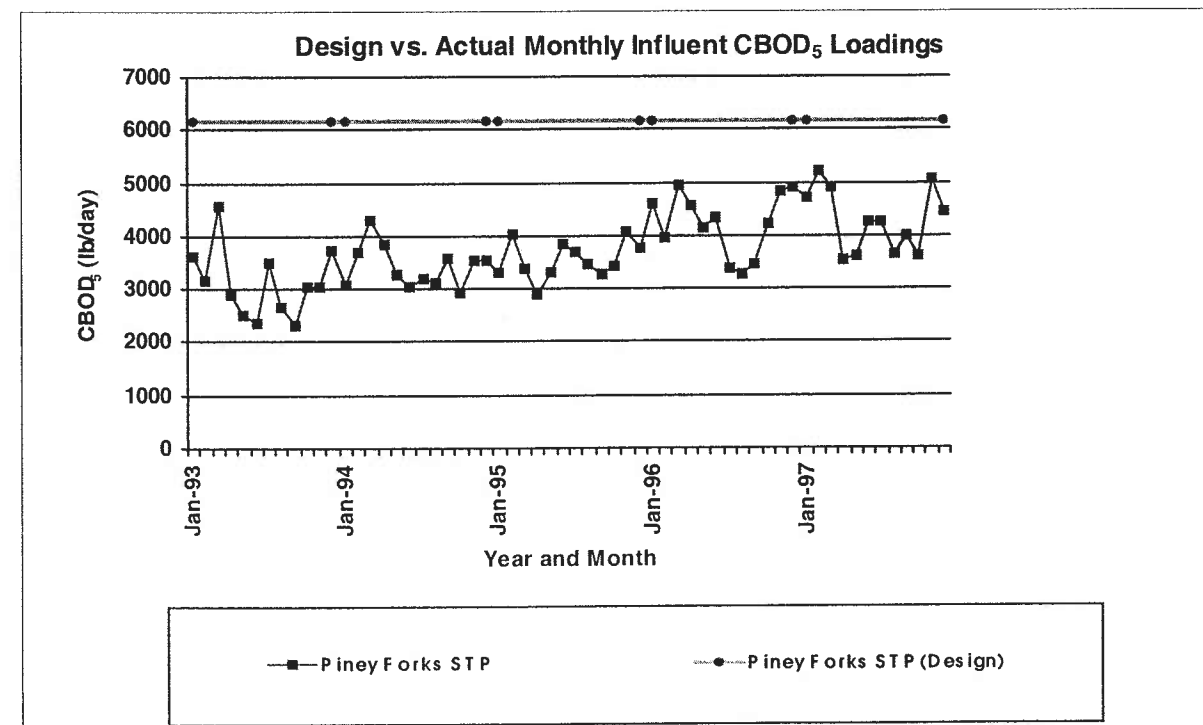
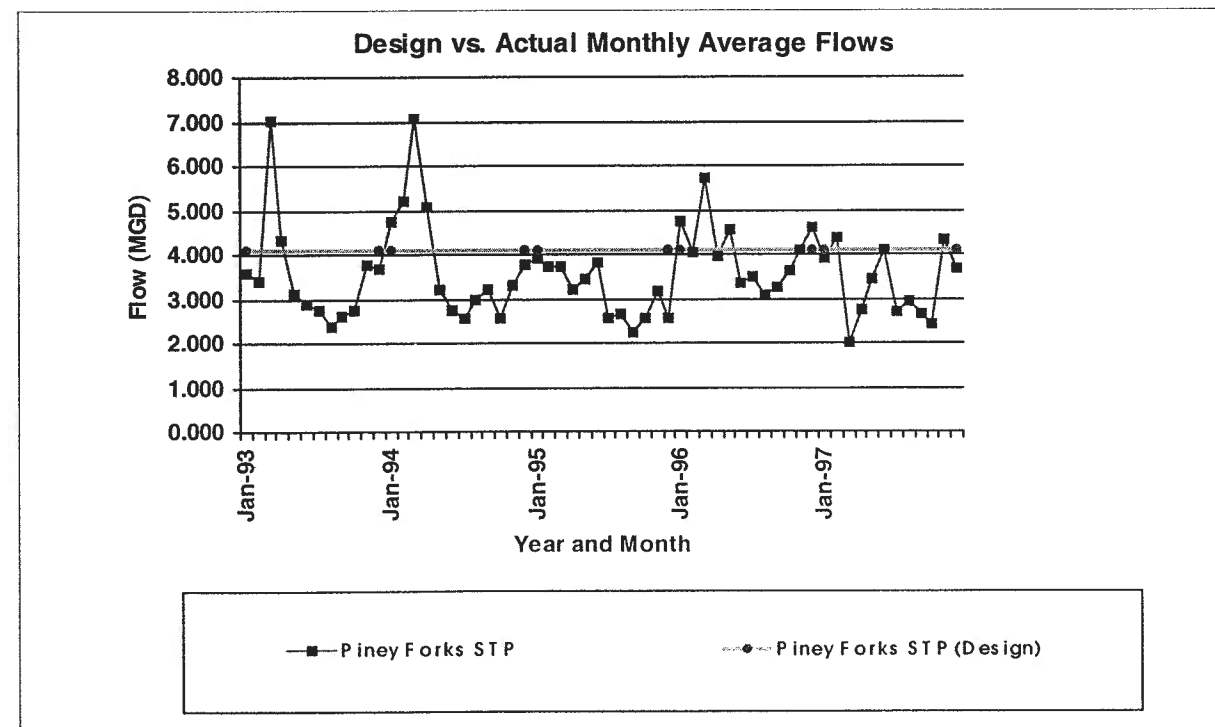


Bethel Park Municipal Authority

1997 Plant Performance

Piney Forks STP	Average Daily Flow (mgd)			CBOD ₅ (lb/Day)			TSS (lb/Day) Effluent			Effluent Ammonia Nitrogen (mg/l)			Effluent Coliform (Col./100ml)		
	Monthly	Summer	Winter	Average Effluent	Summer	Winter	Average	Summer	Winter	Average	Summer	Winter	Average Daily	Summer	Winter
January	3.90			282			520			2.7			2		
February	4.30			341			624			3.7			2		
March	5.00			333			819			3.6			1		
April	2.70			155			288			2.2			2		
May	3.40			159			260			1.0			2		
June	4.10			229			344			1.1			2		
July	2.70			139			184			0.9			2		
August	2.90			159			166			2.0			2		
September	2.60			106			126			1.7			1		
October	2.40			123			110			1.6			2		
November	4.30			172			280			1.3			2		
December	3.70			212			302			2.6			3		
Maximum	5.00	4.10	4.10	341	342	342	819	855	855	3.7	2.0	4.0	3	200	2000
Max as % Limit	122%			100%			96%			185%			2%		
Average	3.50			201			335			2.0			2		
3 Month > Limit?	No														

Plant Loading Summary



Bethel Park Municipal Authority

Intermunicipal Agreements

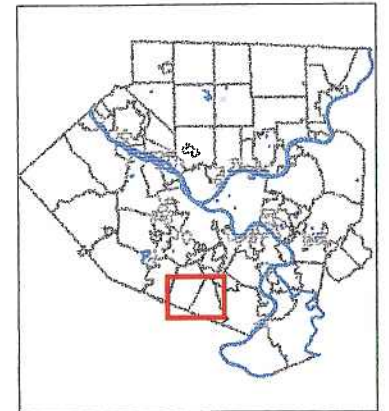
Agreement With	Date Enacted	Agreement Description	Expiration Date	Flow Limits (mgd)	Rate and Surcharge Provisions	Sampling Provisions	Flow Monitoring Provisions	Dispute Resol. Procedure	Basis of Cost Allocation
City of Pittsburgh		Allegheny County Sanitary Authority (ALCOSAN), City of Pittsburgh, and Bethel Park Municipal Authority for sewage treatment at ALCOSAN		None	None	None	None	No	72% allocated to Bethel Park based on % of customers
South Park Township	Agreement not available	BPMA will provide sewage treatment services to portion of South Park Township tributary to Piney Fork STP		None	None	None	None	No	28% allocated to South Park based on % of customers

Bethel Park Municipal Authority

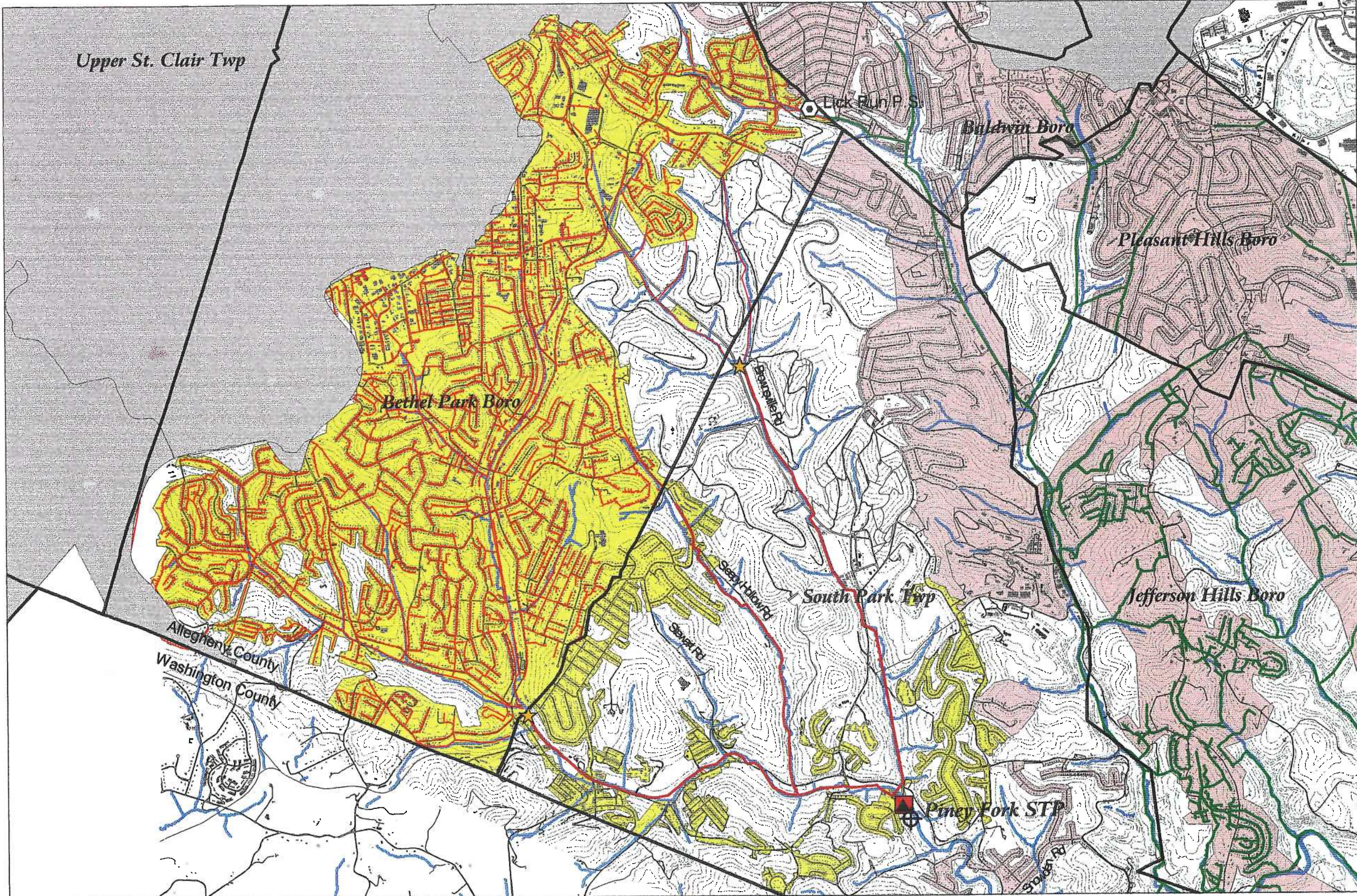
Water Pollution Control Facility
Service Area and Collection
System

Allegheny County
Department of Economic Development

Allegheny County, PA



800 0 800 1600 Feet



- Public Treatment Facility
- Existing STP
- Sanitary Sewer Overflow
- Municipal Boundary
- Major Road
- Contour
- Hydrologic Feature
- Building Collection System
- Separate
- Pipe Type
- Collector
- Force Main
- Trunk
- Neighboring Service Area
- Neighboring Collection System
- ALCOSAN Service Area



Not Field Verified

Source: Sanitary Sewer Map of Twp. of South Park
The Gateway Engineers, Inc.
Bethel Park Municipal Authority Digital Sewer Lines

Clairton Municipal Authority

The Clairton Municipal Authority (CMA) is a treatment authority. A five member Board manages CMA. CMA serves approximately 9,764 customers from the City of Clairton, portions of Jefferson Hills Borough and South Park Township, and the Peters Creek Sanitary Authority (PCSA). The PCSA serves Washington County customers from the Borough of Finleyville, and the Townships of North Strabane, Nottingham, Peters and Union. CMA renders sewage bills to the four collection agencies based on actual sewage flows. CMA does not own or maintain any sewage collection or transmission facilities. The Clairton Sewage Treatment Plant (STP) is a 6.0-mgd, extended aeration treatment facility, which discharges to the Monongahela River. The permitted organic loading capacity for the treatment plant is 10,000 lb CBOD₅/day.

The STP was constructed in 1962-1963 as a 2.0-mgd primary treatment facility. In 1977-1978, the plant was upgraded to an activated sludge treatment process, capable of treating 6.0 mgd. In 1995, variable frequency drives (VFDs) were installed in the influent pump station. The combined nature of the collection system in City of Clairton causes fluctuations in flow to the plant, during wet weather. The VFDs have enabled better flow control and resulted in less bypassing of sewage, at the plant. The average monthly flow to the Clairton STP was 3.6 mgd in 1997, and the average monthly organic loading was 3,200 lb CBOD₅/day in 1997.

The collection system for the City of Clairton is approximately 75 percent combined sewers and 25 percent sanitary sewers. The Public Works Department (PWD) for the City is responsible for maintenance and repair of the entire City collection system. This includes all combined and sanitary sewer lines, five-combined sewer regulator structures, and two pump stations. The City owns the CSO structures, but they are listed on CMA's NPDES permit. As part of the Nine Minimum Controls Standards implemented by the City and CMA, CMA is responsible for inspection of the combined sewer regulator structures. The City of Clairton and CMA have developed a long term CSO plan. The City is continuing its efforts to maximize the collection system storage capacity by separating storm sewers from sanitary sewers whenever new street construction or sewer reconstruction efforts occur.

Jefferson Hills Borough performs routine maintenance on the sanitary sewer system with local municipal forces. In 1997, the Borough completed an internal television inspection project, which included the inspection, root cutting, and cleaning of approximately 11,000 feet of eight-inch sewer line in the watershed tributary to Clairton STP.

The Township of South Park has a full time sewer maintenance staff to handle any problems arising in the watershed tributary to Clairton STP. The Township has televising and flow monitoring equipment as well as access to the Township PWD personnel and equipment to address sewer problems. The Township utilizes outside contractors for point repair projects requiring equipment beyond available resources.

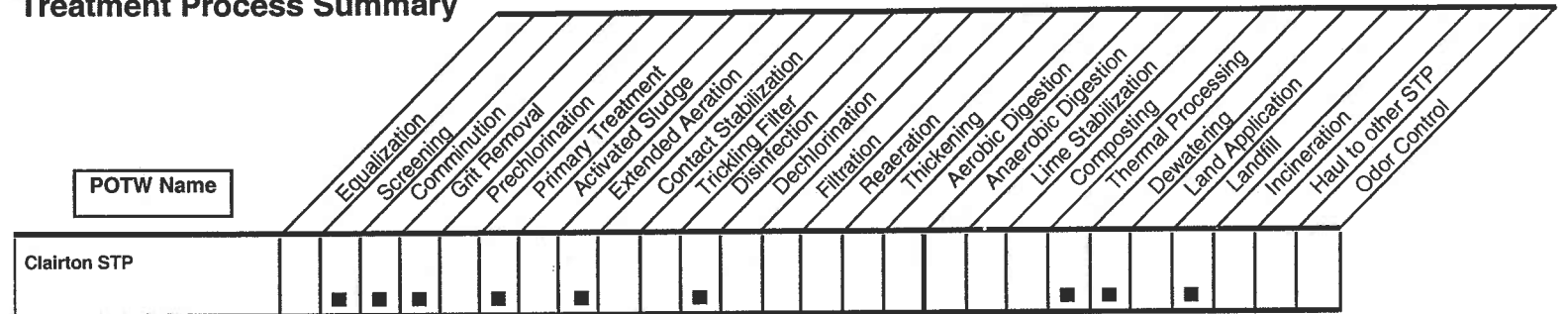
PCSA personnel perform inspections and routine maintenance on the sanitary collection system on an on-going basis to spot repair potential problems. Outside contractors are utilized for large-scale maintenance and repair work and cleaning. Dye testing was conducted at homes in Union Township. A violation rate of approximately six-percent was discovered. PCSA personnel inspect repairs made by the homeowners. PCSA owns and operates one sewage booster pump station tributary to the sewage treatment plant.

The Clairton service area population of approximately 28,600 is projected to increase to approximately 35,900 by 2015. Based on the 2015 population increase, the hydraulic and organic loadings to the treatment plant are expected to increase by 25 percent. The hydraulic loading is projected to increase to approximately 4.9 mgd, and the organic loading is projected to increase to approximately 4,100 lb CBOD₅/day. The hydraulic and organic loading capacities of the plant appear to be adequate for projected average daily flow and loading conditions in 2015.

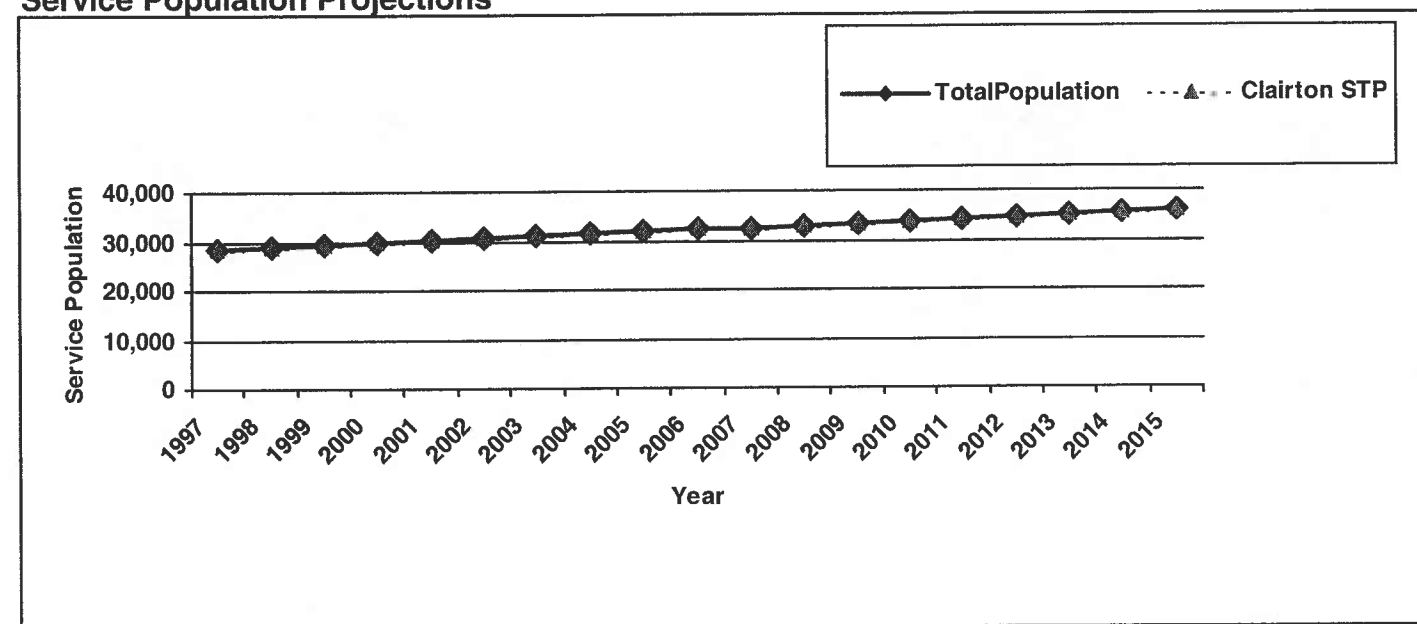
Service Area Summary

POTW Name	1997 Service Population	2015 Service Population	Municipality	Type Of Sewer System
Clairton STP	28626	35886	Clairton, City of	Combined / Separate
			Finleyville Borough	Separate
			Jefferson Hills Borough	Separate
			North Strabane Township	Separate
			Nottingham Township	Separate
			Peters Township	Separate
			South Park Township	Separate
			Union Township	Separate

Treatment Process Summary



Service Population Projections



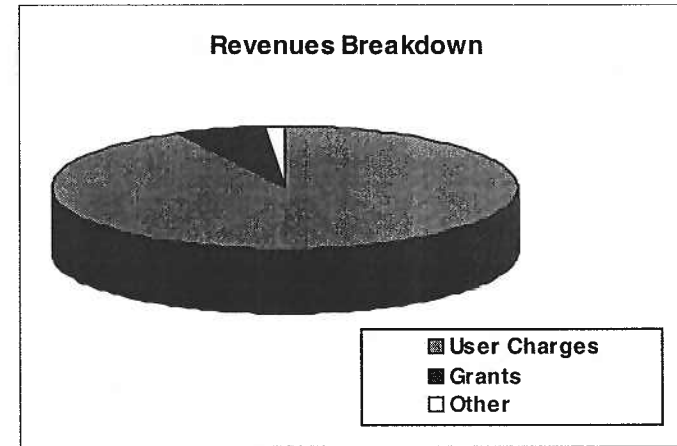
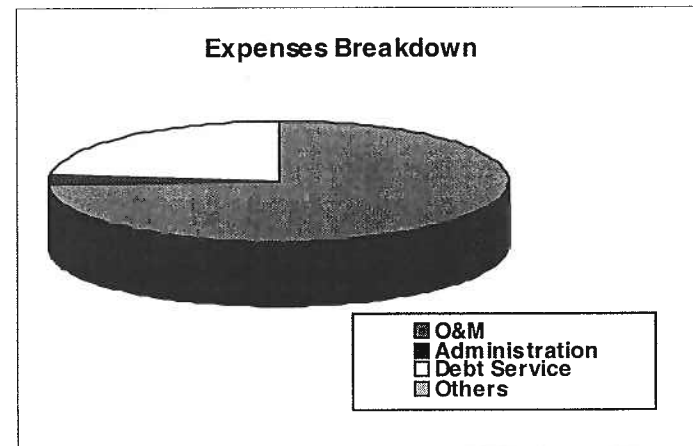
Clairton Municipal Authority

Sewer Use Ordinances

Municipality	Corrective Action Plan	Grease Trap Requirement	Industrial Pretreatment Program	Illicit Connection Inspection At Sale	Surcharge
Clairton, City of	No	No	No	No	No
Finleyville Borough	No				
Jefferson Hills Borough	Yes, for West Eliz. & Pleas. Hills STP service areas	Yes	Yes	Yes	No
North Stabane Township	No	Yes	Yes	Yes, dye testing	Yes
Nottingham Township	No	Yes	Yes	Yes, dye testing	Yes
Peters Township	No	Yes	Yes	Yes, dye testing	Yes
South Park Township	Yes, for Piney Fork and Lick Run Watersheds	No	No industrial customers	Yes	
Union Township	No	Yes	Yes	Yes, dye testing	Yes

Financial Information

REVENUES		
User Charges:		\$1,316,600
Grants:		\$91,700
Other:		\$20,000
Total Revenues		\$1,428,300
EXPENSES		
Operations and Maintenance		\$1,017,200
Administration:		\$42,400
Debt Service:		\$310,596
Other:		\$0
Total Expenses		\$1,370,196
Surplus(Deficit):		\$58,104
Debt Service Coverage Ratio		1.19
Information Source:	YEAR: 1998	Actual/Budgeted
Revenues	Clairton Annual Report (Bankson Eng.)	Budgeted
Expenses	Clairton Annual Report (Bankson Eng.)	Budgeted

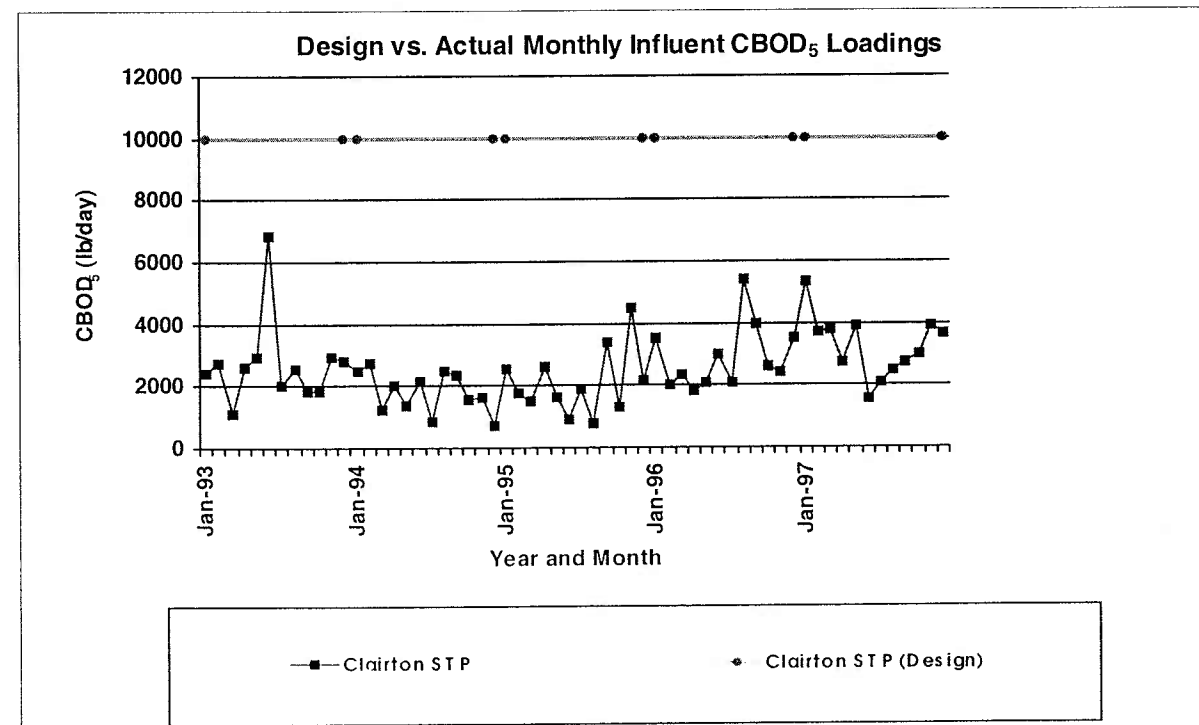
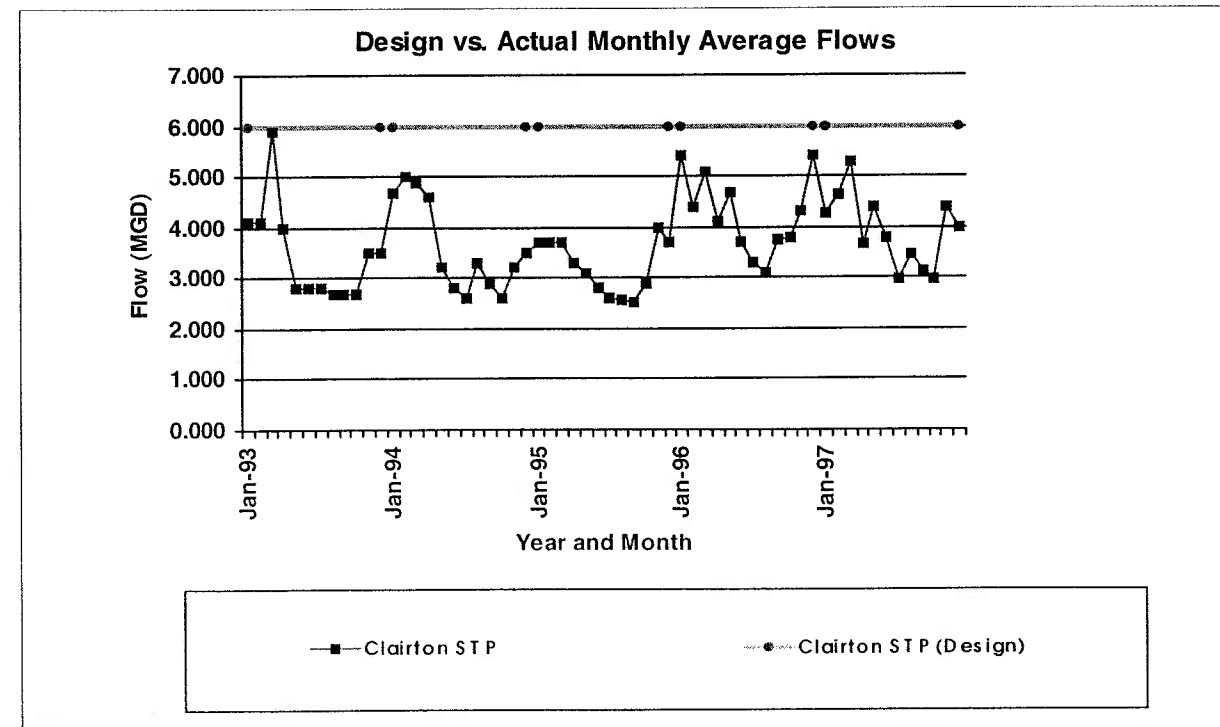


Clairton Municipal Authority

1997 Plant Performance

Clairton STP	Average Daily Flow (mgd)			CBOD ₅ (lb/Day)			Permit Limits			TSS (lb/Day) Effluent			Permit Limits			Effluent Coliform (Col/100ml)			Permit Limits		
	Monthly	Summer	Winter	Monthly Influent	Average Effluent	% Removal	Summer	Winter	Average	Summer	Winter	Average Daily	Summer	Winter							
January	4.30			5,338	201	96%			650			47									
February	4.60			3,742	204	95%			511			58									
March	5.30			3,786	291	92%			770			20									
April	3.65			2,718	165	94%			341			nd									
May	4.40			3,943	216	95%			619			40									
June	3.80			1,585	212	87%			783			24									
July	3.00			2,057	127	94%			287			61									
August	3.50			2,486	148	94%			345			35									
September	3.20			2,714	117	96%			327			48									
October	3.00			3,002	109	96%			252			17									
November	4.40			3,896	312	92%			580			48									
December	4.00			3,654	289	92%			400			36									
Maximum	5.3	6.0	6.0		312		1,251	1,251	783	1,501	1,501	61	200	2000							
Max as % Limit	88%				25%				52%			31%									
Average	3.9				199				489			39									
3 Month > Limit?	No																				

Plant Loading Summary



Clairton Municipal Authority

Collection System Facilities

TREATMENT PLANT	Design Capacity (MGD)	Biological Treatment	Owner	Operator
Clairton STP	6	Extended Aeration	CMA	CMA
<u>Pump Station</u>	<u>Peak Capacity</u>	<u>Avg Daily Flow</u>	<u>Owner</u>	<u>Operator</u>
Miller Avenue	85 gpm	not metered	City of Clairton	City of Clairton
Pleasant View	61,250 gpd	17,500 gpd	PCSA	PCSA
State Street North	300 gpm	not metered	City of Clairton	City of Clairton
<u>Equalization Basin</u>	<u>Capacity</u>	<u>Location</u>	<u>Owner</u>	<u>Operator</u>
None				

Sewer Maintenance Information

<i>Service Community</i>	<i>Maintained By:</i>	<i>Mainten. Done:</i>	<i>Equipment Source</i>	<i>I/I Removal</i>	<i>I/I Flow Monitor</i>
Clairton, City of	Public Works Dept.	As-needed	Public Works Dept.	<input type="checkbox"/>	<input type="checkbox"/>
Jefferson Borough	Local Forces	Routine	COG	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Peters Creek Sanitary Auth	PCSA, Contractor	Routine	Contractor	<input type="checkbox"/>	<input type="checkbox"/>
South Park Township	Sewer Maintenance Staff	As-needed	Sewer Maint., PWD, COG	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Clairton Municipal Authority

Intermunicipal Agreements

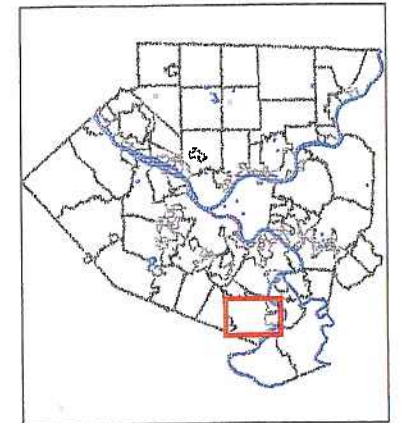
Agreement With	Date Enacted	Agreement Description	Expiration Date	Flow Limits (mgd)	Rate and Surcharge Provisions	Sampling Provisions	Flow Monitoring Provisions	Dispute Resol. Procedure	Basis of Cost Allocation
Borough of Jefferson	Agreement not available	Agreement between Clairton Municipal Authority and Borough of Jefferson for treatment of sewage and acceptable industrial waste at Clairton STP and billing shall be based on actual sewage flow.		None	\$0.99/1,000 gallons. No charge for excessive flows.	The Authority has the right to require sampling.	Flow meters installed in the collection system.	Arbitration	Metered volume
City of Clairton	Agreement not available	Agreement between Clairton Municipal Authority and City of Clairton for treatment of sewage and acceptable industrial waste at Clairton STP and billing shall be based on actual sewage flow.		None	\$0.99/1,000 gallons less 20% to account for combined flow. No charge for excessive flows.	The Authority has the right to require sampling.	Flow meters installed in the collection system.	Arbitration	Metered volume
City of Clairton	03/01/76	Agreement between Clairton Municipal Authority, City of Clairton, Peters Township, and Peters Creek Sanitary Authority that treatment of their sewage and acceptable industrial waste be accomplished by CMA's plant rather than constructing a separate facility				The Authority has the right to require sampling.	Flow meters installed in the collection system	Arbitration	City of Clairton accounts for 37% of the system flows
City of Dravosburg	Agreement not available	Clairton STP will accept and process liquid waste activated sludge from the Dravosburg STP.	Annually	None		Activated sludge sample analyzed annually.	N/A		Gallons of sludge
Peters Creek Sanitary Authority	Agreement not available	Agreement between Clairton Municipal Authority and Peters Creek Sanitary Authority for treatment of sewage and acceptable industrial waste at Clairton STP and billing shall be based on actual sewage flow.		None	\$0.99/1,000 gallons. No charge for excessive flows.	The Authority has the right to require sampling.	Flow meters installed in the collection system.	Arbitration	Metered volume
Peters Creek Sanitary Authority	03/01/76	Agreement between Clairton Municipal Authority, City of Clairton, Peters Township, and Peters Creek Sanitary Authority that treatment of their sewage and acceptable industrial waste be accomplished by CMA's plant rather than constructing a separate facility		None		The Authority has the right to require sampling.	Flow meters installed in the collection system	Arbitration	Peters Township Sanitary Authority accounts for 29% of the system flows
Peters Township	03/01/76	Agreement between Clairton Municipal Authority, City of Clairton, Peters Township, and Peters Creek Sanitary Authority that treatment of their sewage and acceptable industrial waste be accomplished by CMA's plant rather than constructing a separate facility				The Authority has the right to require sampling.	Flow meters installed in the collection system	Arbitration	Peters Township Sanitary Authority accounts for 29% of the system flows
South Park Township	Agreement not available	Agreement between Clairton Municipal Authority and South Park Township for treatment of sewage and acceptable industrial waste at Clairton STP and billing shall be based on actual sewage flow.		None	\$0.99/1,000 gallons. No charge for excessive flows.	The Authority has the right to require sampling.	Flow meters installed in the collection system.	Arbitration	Metered volume

Clairton Municipal Authority

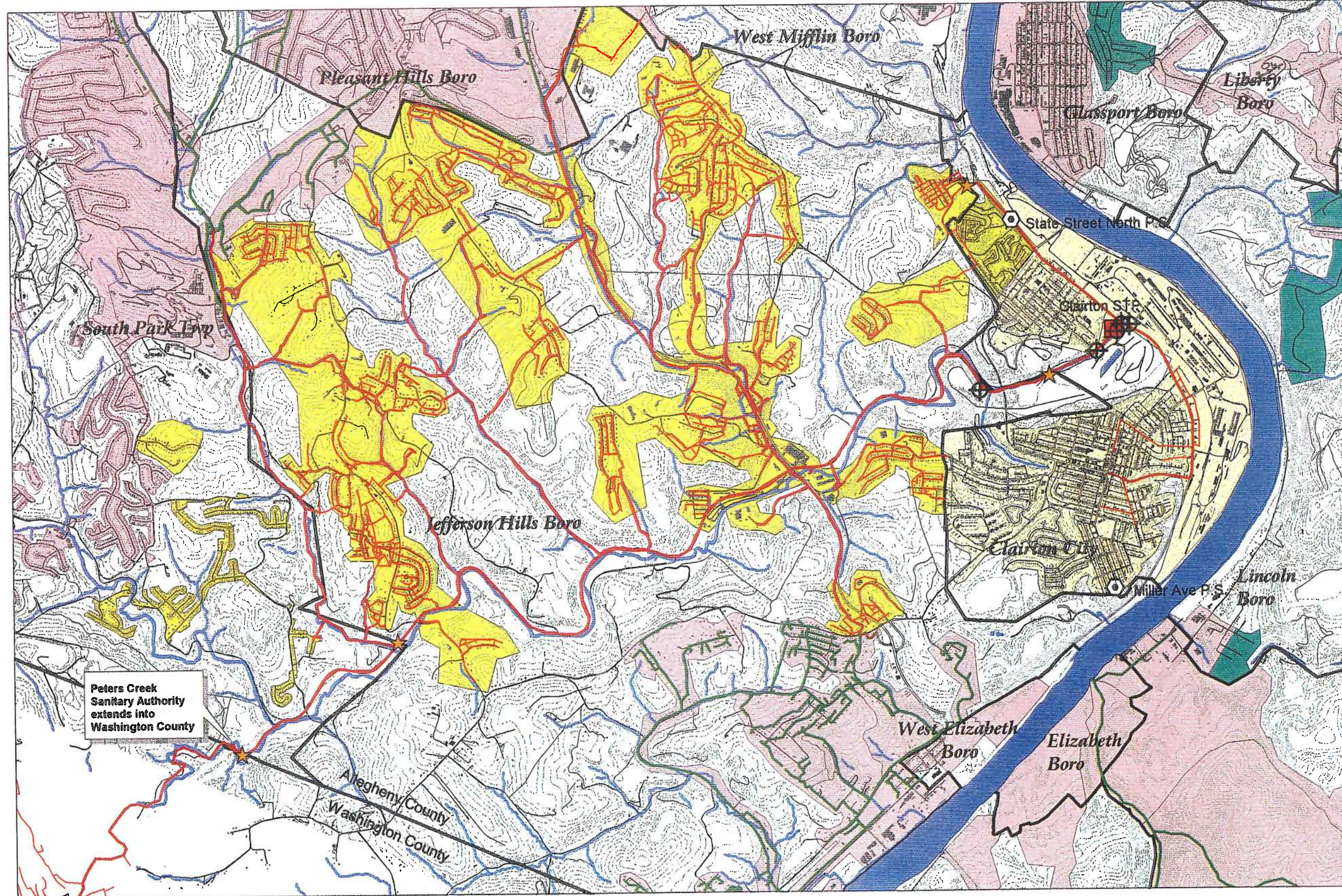
Water Pollution Control Facility Service Area and Collection System

Allegheny County
Department of Economic Development

Allegheny County, PA



800 0 800 1600 Feet



Peters Creek Sanitary Authority extends into Washington County

- Public Treatment Facility
- Existing STP
- Pump Station
- Combined Sewer Outfall
- Intermunicipal Connection
- Municipal Boundary
- Major Road
- Contour
- Hydrologic Feature
- Building
- Collection System
- Combined
- Separate
- On - Lot Problem Area
- Pipe Type
- Collector
- Force Main
- Trunk
- Neighboring Service Area
- Neighboring Collection System
- Not Field Verified

Source: City of Clairton Zoning Map
Jefferson Borough Digital Sewer Lines

Coraopolis Municipal Sanitary Authority

The Coraopolis Municipal Sanitary Authority (CMSA) is a treatment and collection authority serving approximately 6,500 customers in the Borough of Coraopolis and portions of the townships of Moon and Robinson. The five-member Board of Directors is comprised of Coraopolis Borough residents. The Coraopolis Water Pollution Control Facility (WPCF) is jointly owned by the Coraopolis Municipal Sanitary Authority and the Moon Township Municipal Authority. In 1999, Coraopolis Borough and Moon Township created the Riverview Sanitary Authority (RSA) to manage and operate the Coraopolis WPCF. RSA operates this 4.34-mgd extended aeration plant, which discharges to the Ohio River. The permitted organic capacity for the plant is 5,808 lb CBOD₅/day. There are 13 pump stations located in the collection system tributary to the treatment plant – three in Coraopolis Borough, eight in Moon Township, and two in Robinson Township.

The treatment plant hydraulic capacity was expanded and upgraded in 1995 from 3.0 mgd to 4.34 mgd to alleviate hydraulic overloading. An aeration tank and final clarifier were added. The average monthly flow to the Coraopolis WPCF in 1997 was 3.25 mgd, and the average monthly organic loading was 3,271 lb CBOD₅/day.

CMSA leases the Coraopolis combined sewer collection system to Coraopolis Borough. There are seven, permitted combined sewer regulators on the system, which are monitored during wet-weather events. To support the combined sewer system, CMSA has completed and submitted a CSO System Inventory and Characterization Report, a System Hydraulic Characterization Report, and the documentation of implementation of the Nine Minimum Controls. Draft work on the Long Term Control Plan for the Authority began in 1998.

The Public Works Department (PWD) of Coraopolis Borough performs maintenance on the collection system and pump stations within the borough limits on an as-needed basis. Coraopolis Borough is a member of the Char-West Council of Governments (CWCOG), and the PWD has utilized the CWCOG televising equipment and sewer vactor truck for system maintenance. The PWD inspects all sewer extension projects and confirms that no new storm sewers are connected to the sewage collection system. The Borough has been ordered by the Allegheny County Health Department to locate sources of sewage entering storm sewers, which ultimately discharges to the Ohio River.

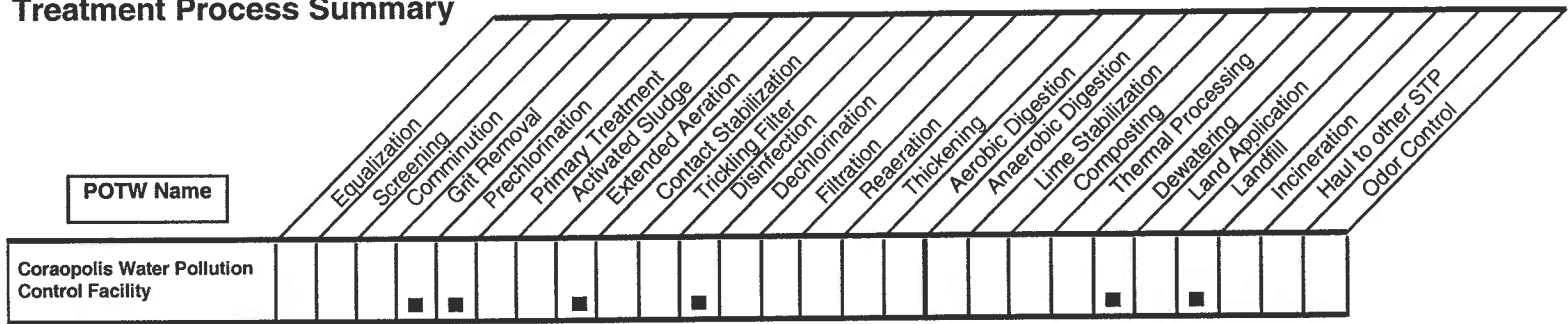
The contributing sewers from Moon Township and Robinson Township are separate sewers. The Moon Township Municipal Authority maintains and operates the collection system and pump stations located within the Moon Township municipal boundaries. Similarly, the Municipal Authority of the Township of Robinson maintains and operates the collection system and pump stations in Robinson Township.

The Coraopolis service area population of approximately 17,000 is projected to increase to approximately 23,700 by 2015. Based on the 2015 population increase, the hydraulic and organic loadings to the treatment plant are expected to increase by 39 percent. The average daily flow is projected to increase to approximately 4.5 mgd, and the organic loading is projected to increase to approximately 4,600 lb CBOD₅/day. The current organic loading capacity of the plant appears to be adequate for the loading conditions in 2015. However, based on SPRPC's projections, the projected hydraulic loading exceeds the current plant hydraulic.

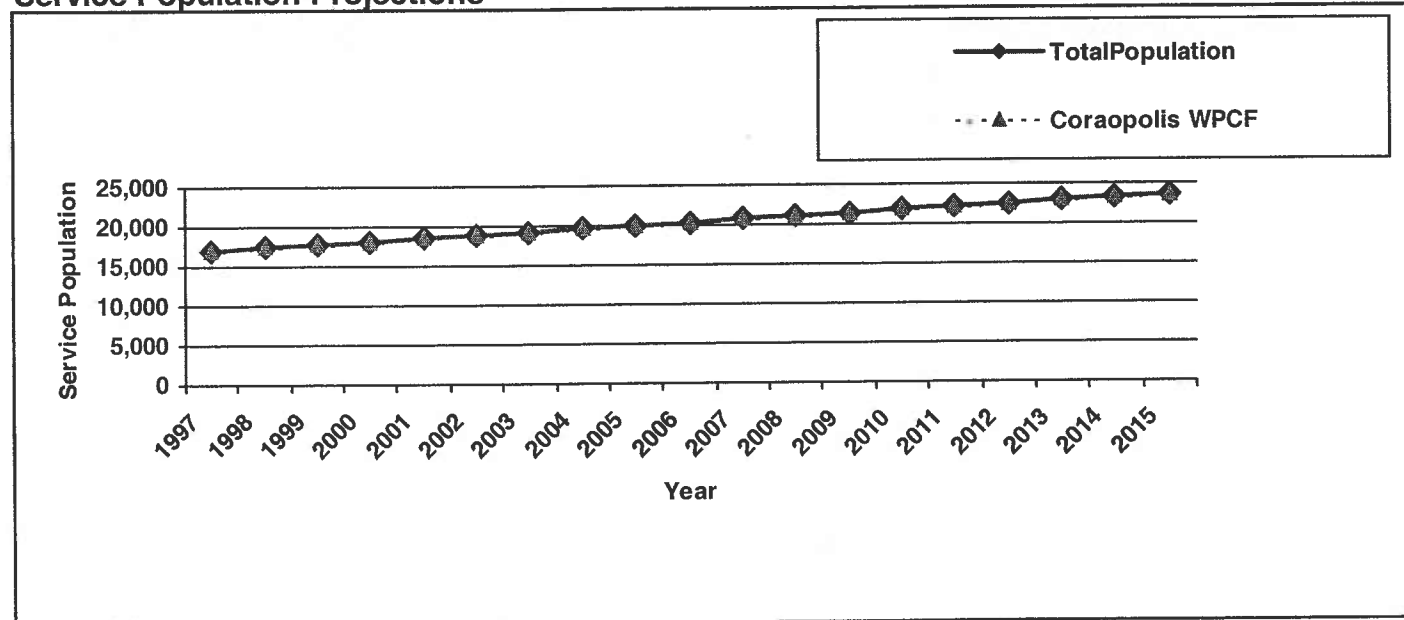
Service Area Summary

POTW Name	1997 Service Population	2015 Service Population	Municipality	Type Of Sewer System
Coraopolis WPCF	17000	23695	Coraopolis Borough	Combined/Separate
			Moon Township	Separate
			Robinson Township	Separate

Treatment Process Summary



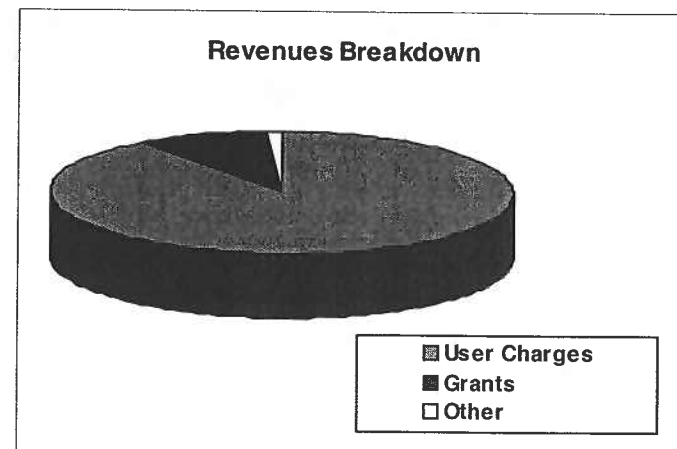
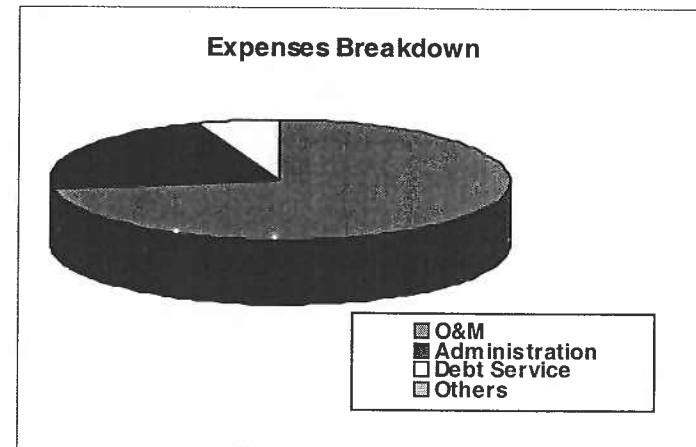
Service Population Projections



Coraopolis Municipal Sanitary Authority

Sewer Use Ordinances

Municipality	Corrective Action Plan	Grease Trap Requirement	Industrial Pretreatment Program	Illicit Connection Inspection At Sale	Surcharge
Coraopolis Borough	No	No	Voluntary	No	No
Moon Township	No	Yes	Yes	Yes	No
Robinson Township	No	Yes	Yes, adopted MTMA's pretreatment ordinance	Yes	No



Financial Information

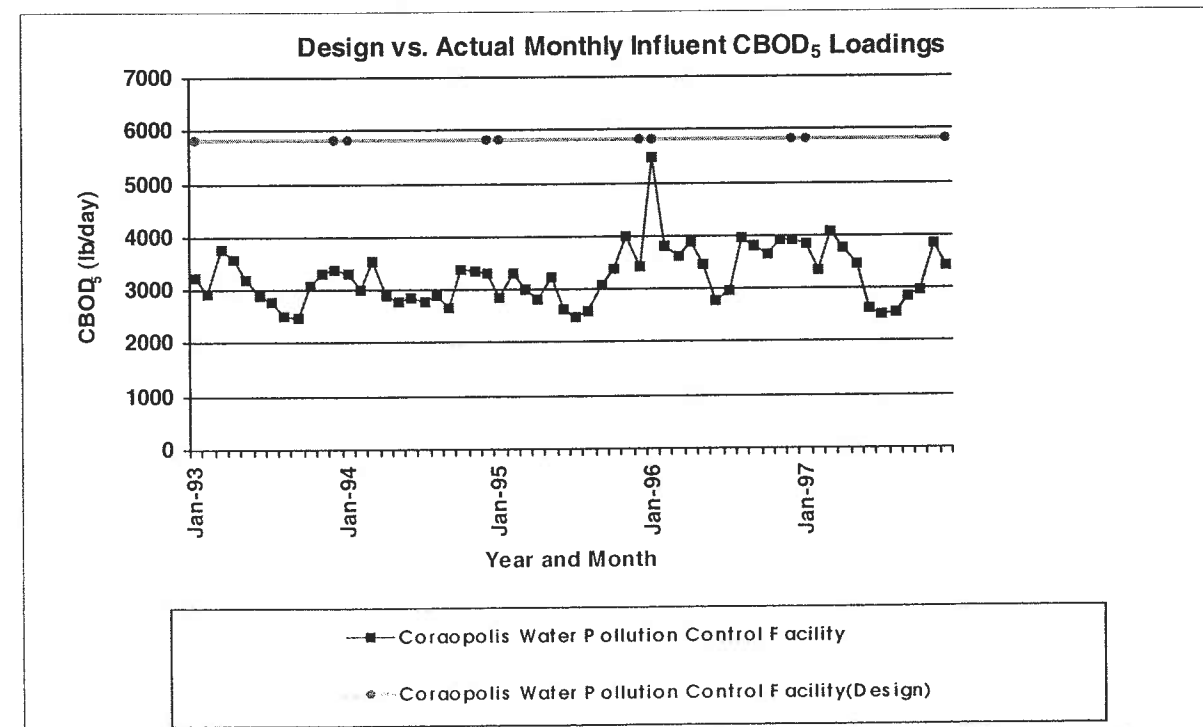
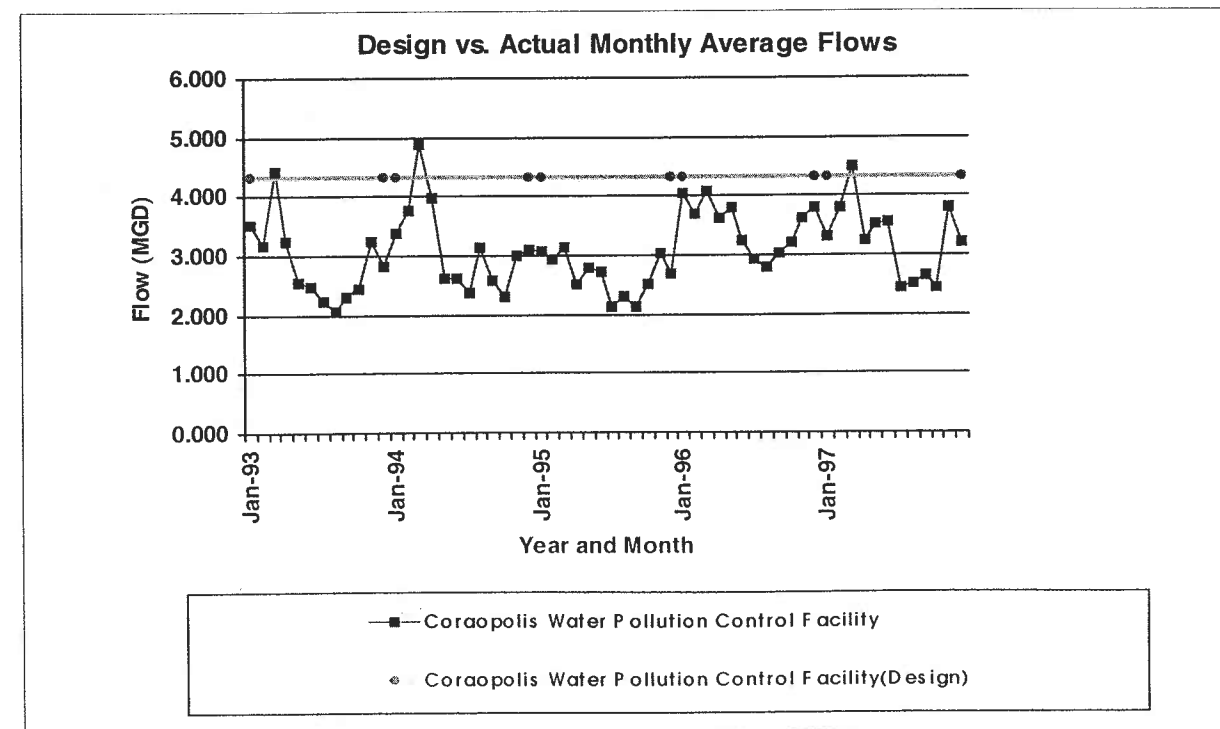
REVENUES		
User Charges:		\$953,546
Grants:		\$96,771
Other:		\$12,000
Total Revenues		\$1,062,317
EXPENSES		
Operations and Maintenance		\$749,315
Administration:		\$225,800
Debt Service:		\$61,767
Other:		\$0
Total Expenses		\$1,036,882
Surplus(Deficit):		\$25,435
Debt Service Coverage Ratio		1.41
Information Source:	YEAR: 1998	Actual/Budgeted
Revenues	Coraopolis Proposed Budget - Exhibit I	Budgeted
Expenses	Coraopolis Proposed Budget - Exhibit I	Budgeted

Coraopolis Municipal Sanitary Authority

1997 Plant Performance

Coraopolis WPCF	Average Daily Flow (mgd)			CBOD ₅ (lb/Day)			Permit Limits			TSS (lb/Day) Effluent	Permit Limits			Effluent Coliform (Col/100ml)	Permit Limits		
	Monthly	Summer	Winter	Monthly Influent	Average Effluent	% Removal	Summer	Winter	Average		Summer	Winter	Average Daily		Summer	Winter	
January	3.320			3,837	222	94%			692			384					
February	3.789			3,337	273	92%			922 E			229					
March	4.494			4,062	216	95%			1004 E			506					
April	3.254			3,774	217	94%			624			330					
May	3.527			3,455	212	94%			783 E			155					
June	3.542			2,642	195	93%			764 E			142					
July	2.455			2,494	21	99%			389			41					
August	2.528			2,549	84	97%			211			135					
September	2.647			2,867	88	97%			419			200					
October	2.436			2,972	81	97%			223			92					
November	3.797			3,851	158	96%			633			927					
December	3.211			3,410	161	95%			536			385					
Maximum	4.49	3.00	3.00		273		626	626	1004	751	751	927	200	2000			
Max as % Limit	150%				44%				134%			46%					
Average	3.25				161				600			294					
3 Month > Limit?	No																

Plant Loading Summary



Coraopolis Municipal Sanitary Authority

Collection System Facilities

TREATMENT PLANT	Design Capacity (MGD)	Biological Treatment	Owner	Operator
Coraopolis WPCF	4.34	Extended Aeration	CMSA	CMSA
<u>Pump Station</u>	<u>Peak Capacity</u>	<u>Avg Daily Flow</u>	<u>Owner</u>	<u>Operator</u>
5-A (Stoops Ferry)	2,100 gpm	2,000 gpm	MTMA	MTMA
Canterbury Commons	175 gpm	40 gpm	MTMA	MTMA
Fourth Avenue Ejector	100 gpm	22.1 gpm	CMSA	CMSA
Lewis Ave.	400 gpm		MATR	MATR
Montour Run	400 gpm	157 gpm	CMSA	CMSA
Parkridge Village	175 gpm	30 gpm	MTMA	MTMA
Pittsburgh Ave.	500 gpm		MATR	MATR
Pococen Drive	60 gpm	60 gpm	MTMA	MTMA
RB & W (Blaw Knox)	300 gpm	200 gpm	MTMA	MTMA
Sunnyhill	100 gpm	30 gpm	MTMA	MTMA
Watt Street	3,000 gpm	1,014 gpm	CMSA	CMSA
West Hills	200 gpm	50 gpm	MTMA	MTMA
Woodland Ridge	100 gpm	30 gpm	MTMA	MTMA
<u>Equalization Basin</u>	<u>Capacity</u>	<u>Location</u>	<u>Owner</u>	<u>Operator</u>
None				

Sewer Maintenance Information

<i>Service Community</i>	<i>Maintained By:</i>	<i>Mainten. Done:</i>	<i>Equipment Source</i>	<i>I/I Removal</i>	<i>I/I Flow Monitor</i>
Coraopolis Borough	Coraopolis Borough	As-needed	Authority, COG	<input type="checkbox"/>	<input type="checkbox"/>
Moon Township	MTMA	Routine	COG	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Robinson Township	MATR, Contractor	Routine	Authority	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Coraopolis Municipal Sanitary Authority

Intermunicipal Agreements

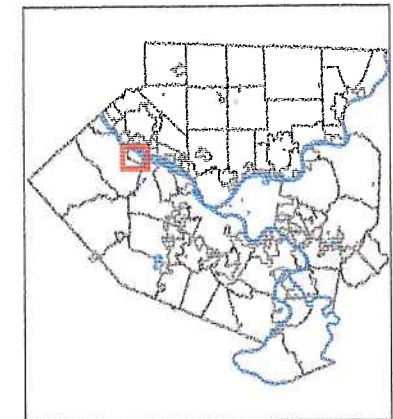
Agreement With	Date Enacted	Agreement Description	Expiration Date	Flow Limits (mgd)	Rate and Surcharge Provisions	Sampling Provisions	Flow Monitoring Provisions	Dispute Resol. Procedure	Basis of Cost Allocation
Coraopolis, Borough of	08/01/58	Coraopolis Municipal Sanitary Authority leases collection system to Borough of Coraopolis							
Coraopolis, Borough of	07/19/71	Borough of Coraopolis, Coraopolis Municipal Sanitary Authority, and Moon Township Municipal Authority to extend service to expand the treatment plant from 1.2 mgd to 3.0 mgd		1.2 mgd for Coraopolis Borough and 1.8 mgd for Moon Township	>1.2 mgd, Cora. credits Moon (excess flow ratio*30% annual costs/exp); >1.8 mgd, Moon pays Cora. (excess flow ratio*70% annual costs/exp)				Metered
Coraopolis, Borough of	02/21/96	Moon Township Municipal Authority, Borough of Coraopolis, and Coraopolis Municipal Sanitary Authority for Waste Solids Disposal	So long as the Moon Township Authority's Water Filtration Plant is operational						Sludge disposal fees for ~65 ton/mo., one added sludge hauling trip/wk., polymer consumption of 14 lb/day, dewatering labor of 3.5 hr/wk., electric consumption for dewatering at 14 hr/wk.
Coraopolis, Borough of	12/12/67	Borough of Coraopolis, Coraopolis Municipal Sanitary Authority, and Moon Township Municipal Authority to extend service to McCabe Hollow							Transport and treatment for this line based on flow metering
Coraopolis, Borough of	11/19/59	Coraopolis Municipal Sanitary Authority provides treatment to Borough of Coraopolis and Moon Township Municipal Authority	At the time and immediately prior to the first Capitol Addition to the treatment plant unless ordered by the Commonwealth	None		None		Arbitration	Percentage of domestic users for metered plant flow for transport, treatment, and plant O&M costs
Coraopolis, Borough of	11/14/81	Coraopolis Municipal Sanitary Authority, Borough of Coraopolis, Municipal Authority of the Township of Robinson, and the Township of Robinson for transport and treatment of the Groveton area							Metered at the Montour Pump Station
Moon Township Municipal Authority	07/19/71	Borough of Coraopolis, Coraopolis Municipal Sanitary Authority, and Moon Township Municipal Authority to extend service to expand the treatment plant from 1.2 mgd to 3.0 mgd		1.2 mgd for Coraopolis Borough and 1.8 mgd for Moon Township	>1.2 mgd, Cora. credits Moon (excess flow ratio*30% annual costs/exp); >1.8 mgd, Moon pays Cora. (excess flow ratio*70% annual costs/exp)				Metered
Moon Township Municipal Authority	02/21/96	Moon Township Municipal Authority, Borough of Coraopolis, and Coraopolis Municipal Sanitary Authority for Waste Solids Disposal	So long as the Moon Township Authority's Water Filtration Plant is operational						Sludge disposal fees for ~65 ton/mo., one added sludge hauling trip/wk., polymer consumption of 14 lb/day, dewatering labor of 3.5 hr/wk., electric consumption for dewatering at 14 hr/wk.
Moon Township Municipal Authority	12/12/67	Borough of Coraopolis, Coraopolis Municipal Sanitary Authority, and Moon Township Municipal Authority to extend service to McCabe Hollow							Transport and treatment for this line based on flow metering
Moon Township Municipal Authority	11/19/59	Coraopolis Municipal Sanitary Authority provides treatment to Borough of Coraopolis and Moon Township Municipal Authority	At the time and immediately prior to the first Capitol Addition to the treatment plant, unless ordered by the Commonwealth	None		None		Arbitration	Percentage of domestic users and metered plant flow for transport, treatment, and plant O&M costs
Municipal Authority of the Twp. Of Robinson	11/14/81	Coraopolis Municipal Sanitary Authority, Borough of Coraopolis, Municipal Authority of the Township of Robinson, and the Township of Robinson for transport and treatment of the Groveton area							Metered at the Montour Pump Station
Robinson, Township of	11/14/81	Coraopolis Municipal Sanitary Authority, Borough of Coraopolis, Municipal Authority of the Township of Robinson, and the Township of Robinson for transport and treatment of the Groveton area							Metered at the Montour Pump Station

Coraopolis Municipal Sanitary Authority

Water Pollution Control Facility
Service Area and Collection
System

Allegheny County
Department of Economic Development

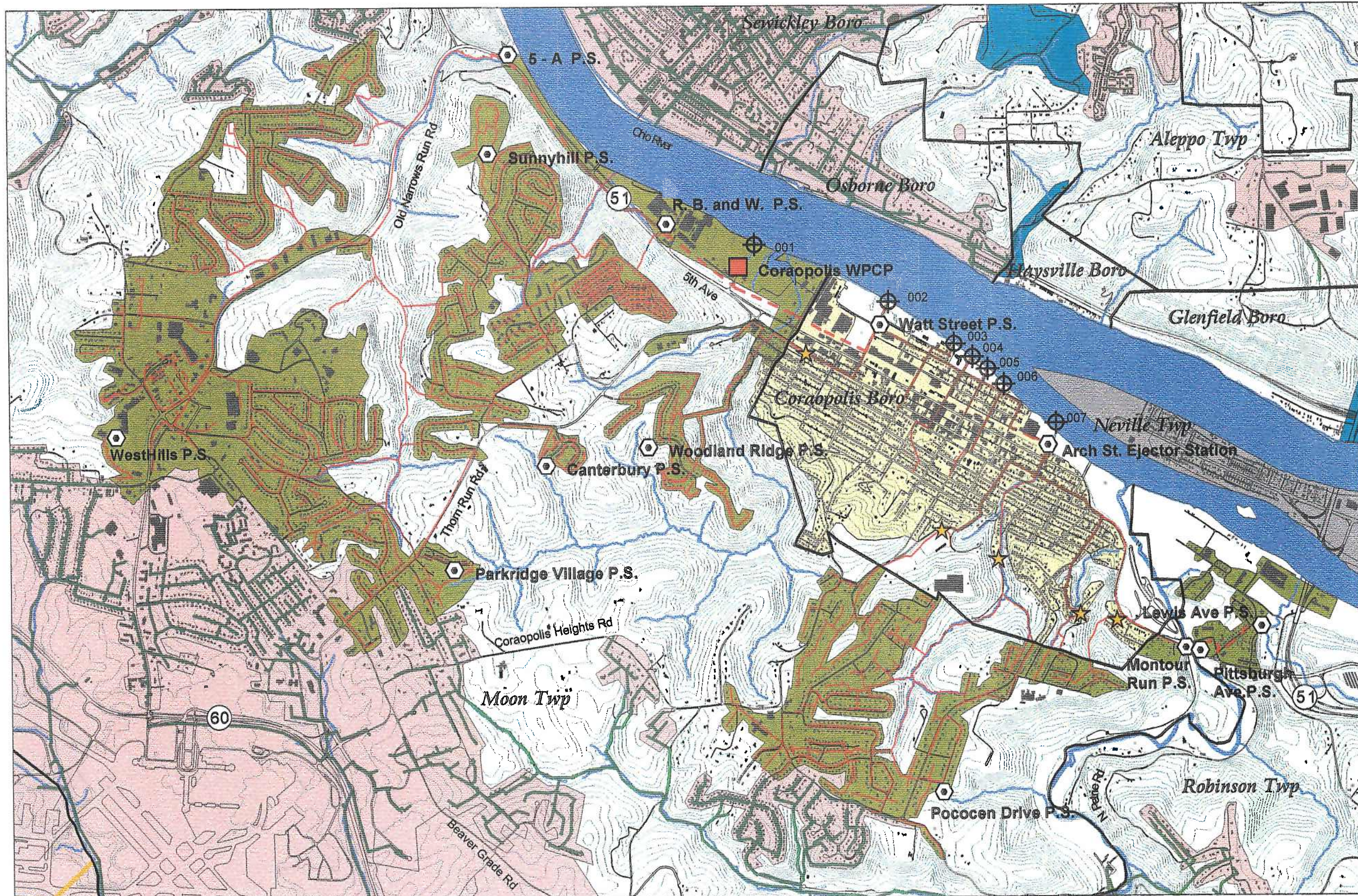
Allegheny County, PA



600 0 600 1200 Feet

- Public Treatment Facility
- Existing STP
- Pump Station
- Combined Sewer Outfall
- Intermunicipal Connection
- Municipal Boundary
- Major Road
- Contour
- Hydrologic Feature
- Building
- Collection System
- Combined
- Separate
- On - Lot Problem Area
- Pipe Type
- Collector
- Force Main
- Trunk
- Neighboring Service Area
- Neighboring Collection System
- Department of Aviation Collection System
- ALCOSAN Service Area
- Not Field Verified

Source: Boro. of Coraopolis Sewer System Map; 1962
Moon Twp. Municipal Authority Digital Sewer Lines



Crescent South Heights Municipal Authority

The Crescent-South Heights Municipal Authority (CSHMA) provides sanitary sewage collection, conveyance, and treatment for approximately 1,600 customers in Crescent Township and South Heights Borough, the northwestern portion of Moon Township, and a small section of Hopewell Township (Beaver County). CSHMA owns and operates a 0.396-mgd conventional activated sludge facility. The permitted organic loading capacity for the treatment plant is 565 lb CBOD₅/day. The CSHMA WWTP is located in Crescent, PA (Crescent Township), and discharges into the Ohio River.

The treatment plant was constructed in 1963 with a hydraulic capacity of 0.2 mgd. In 1976, the plant was upgraded to handle an average permitted daily flow of 0.396 mgd and a maximum allowable flow rate of 0.99 mgd. The plant's treatment process includes a channel monster (located at the Glenwillard L.S.), three conventional activated sludge aeration tanks, two secondary settling tanks, and two chlorine contact tanks. The average monthly flow to the plant in 1997 was 0.359 mgd. The average monthly organic loading was 463 lb CBOD₅/day.

The wastewater treatment plant is operated by at least one person, seven days per week. Contract services are used when special assistance is needed.

The CSHMA WWTP is hydraulically overloaded as the average daily flows for three consecutive months exceeded the permitted capacity of 0.396 mgd in 1993, 1994, and 1996. As a result of the hydraulic overloading in these years, an evaluation is being conducted to locate, identify, and remove sources of infiltration and inflow (I/I). Monthly average flows did not exceed the permitted upper limit for three consecutive months in 1997. However, the average monthly flows did exceed the permitted average monthly flows in five non-consecutive months. This work is being done pursuant to a consent order and agreement with PaDEP. Under the agreement, the hydraulic overload conditions must be corrected by July 1, 2001 through sewer remediation. Should these efforts fail, CSHMA will be required to construct flow equalization and expanded treatment facilities. The Bocktown watershed in Crescent Township, which contributes approximately 40 percent of the system sewerage, has been identified as the major contributor of I/I in the system.

CSHMA monitors, maintains, and repairs all sewer lines in Crescent Township and South Heights Borough with the exception of 2,600 LF of sewer located in Crescent Township near the Crescent / Moon Township border. These lines are maintained and operated by the Moon Township Municipal Authority. Also, approximately 1,000 LF of sewer lines located along Hopewell Heights Road in Hopewell Township are maintained and operated by the Hopewell Township Sewer Authority.

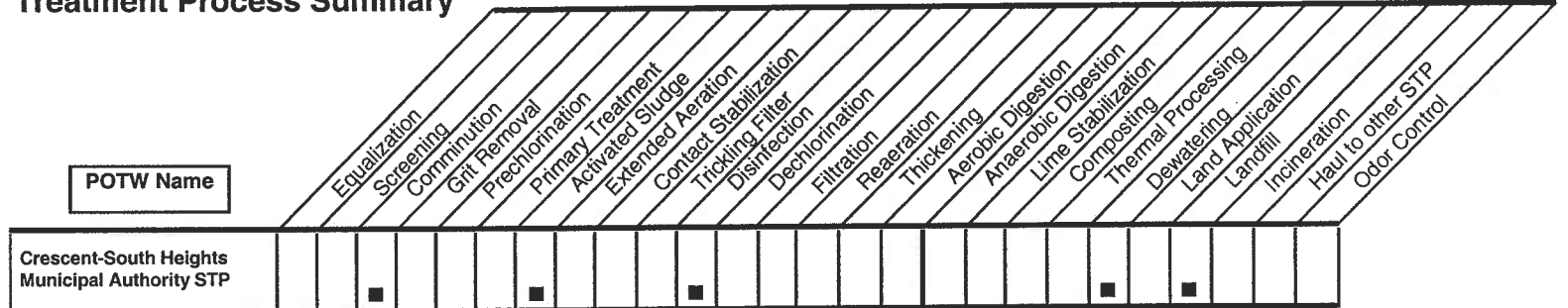
Approximately twenty percent of the sewer system is inspected once a year. The inspection consists of visual manhole inspections at the time of the annual sewer line cleaning. CSHMA utilizes a vector sewer cleaning truck from the Char-West Council of Government to perform sewer line flushing. In addition, CSHMA has an ongoing program of installing plastic sewer guards in their system manholes. There are four lift stations in the Authority's collection system: Wireton, South Heights, Bocktown, and Glenwillard Lift Stations.

The Crescent-South Heights service area population of approximately 3,848 is projected to increase to approximately 5,000 by 2015. Based on the 2015 population increase, the hydraulic and organic loadings to the treatment plant are expected to increase by 29 percent. The hydraulic loading is projected to increase to approximately 0.46 mgd, and the organic loading is projected to increase to approximately 600 lb CBOD₅/day. The projected hydraulic and organic loading of the plant exceeds current average daily flow and loading capacities in 2015.

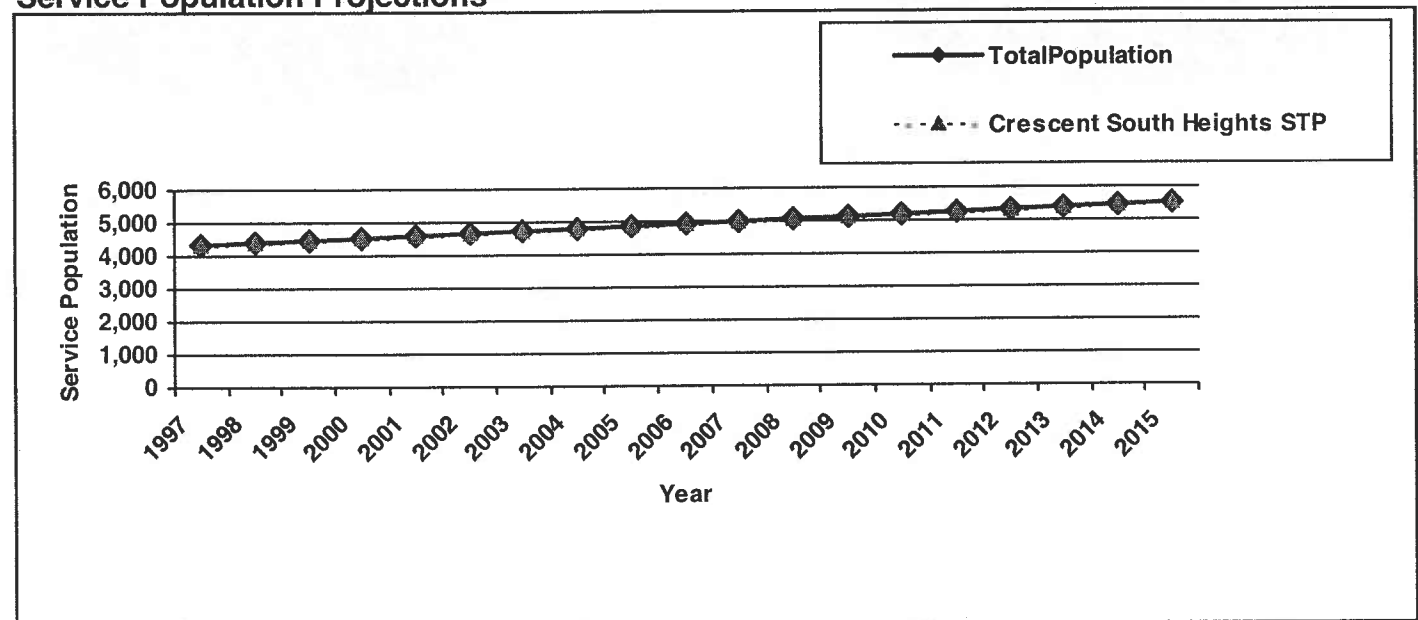
Service Area Summary

POTW Name	1997 Service Population	2015 Service Population	Municipality	Type Of Sewer System
Crescent South Heights STP	4304	5536	Crescent Township	Separate
			Hopewell Borough	Separate
			Moon Township	Separate
			South Heights Borough	Separate

Treatment Process Summary



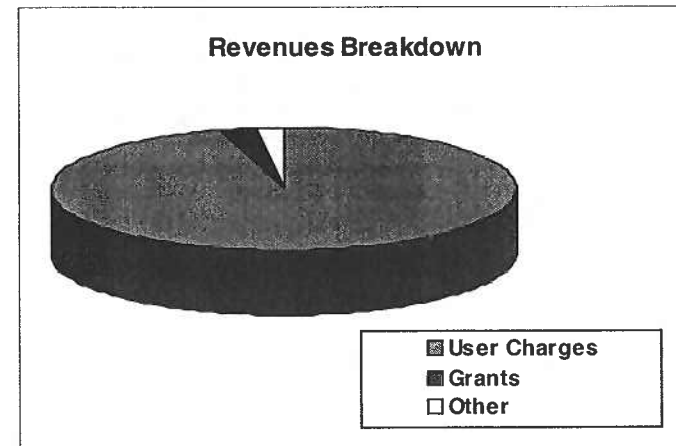
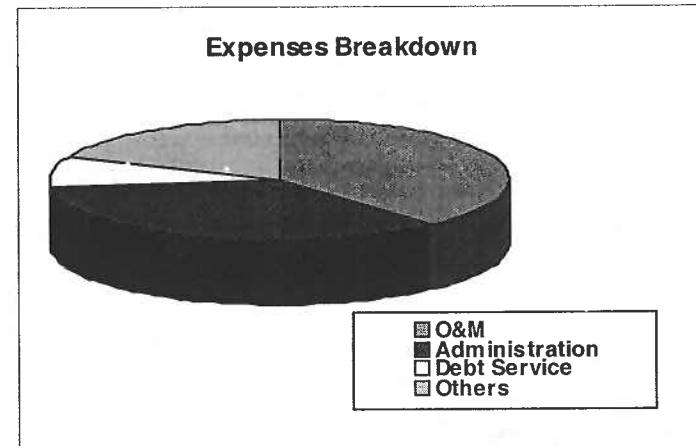
Service Population Projections



Crescent South Heights Municipal Authority

Sewer Use Ordinances

Municipality	Corrective Action Plan	Grease Trap Requirement	Industrial Pretreatment Program	Illicit Connection Inspection At Sale	Surcharge
Crescent Township	Yes	No	No	No	No
Hopewell Borough	No data	No data	No data		No data
Moon Township	No	Yes	Yes	Yes	No
South Heights Borough	Yes	No	No	No	No



Financial Information

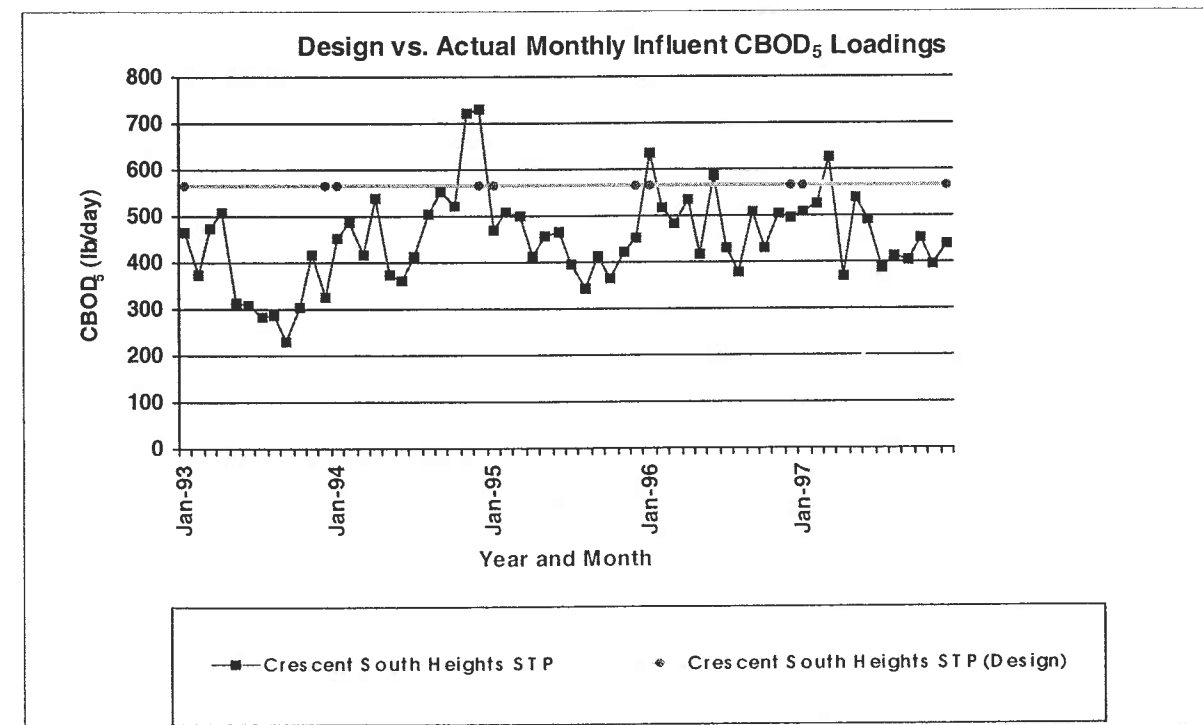
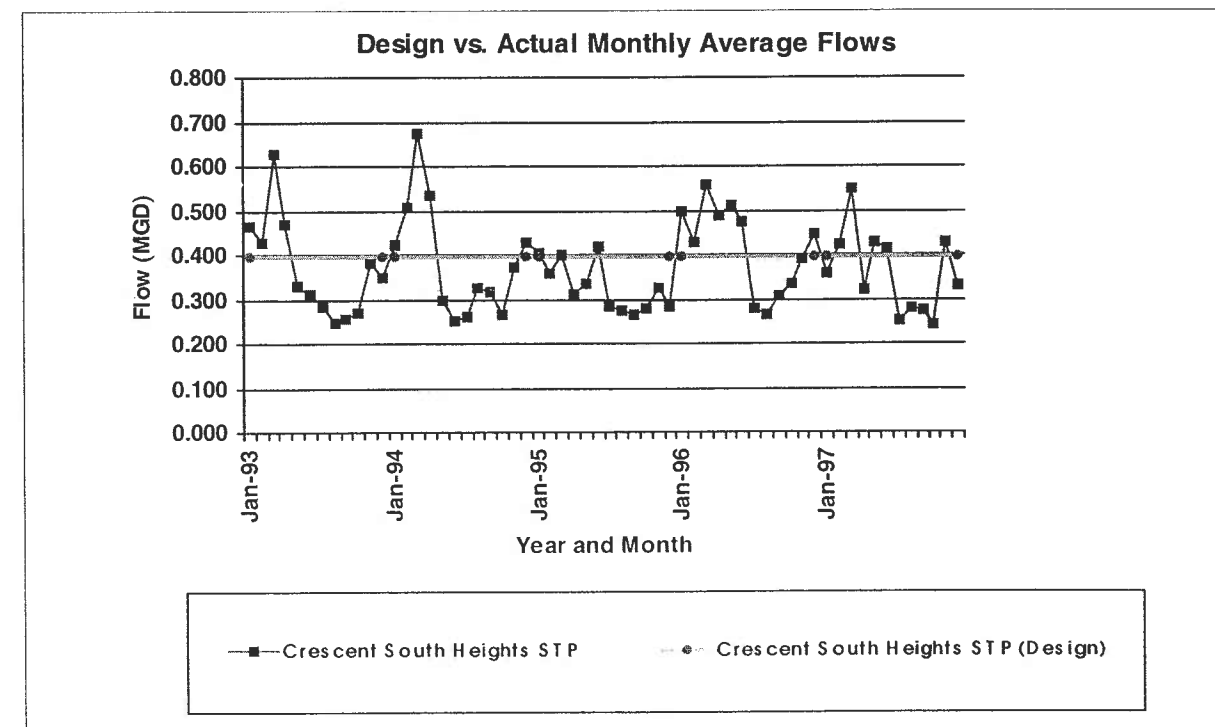
REVENUES		
User Charges:		\$471,700
Grants:		\$12,100
Other:		\$9,500
Total Revenues		\$493,300
EXPENSES		
Operations and Maintenance		\$185,850
Administration:		\$166,900
Debt Service:		\$40,148
Other:		\$88,350
Total Expenses		\$481,248
Surplus(Deficit):		\$12,052
Debt Service Coverage Ratio		1.30
YEAR:	1998	Actual/ Budgeted
Information Source:		
Revenues	Crescent South Heights Proposed Budget	Budgeted
Expenses	Crescent South Heights Proposed Budget	Budgeted

Crescent South Heights Municipal Authority

1997 Plant Performance

Crescent South Heights STP	Average Daily Flow (mgd)			CBOD ₅ (lb/Day)			TSS (lb/Day) Effluent			Effluent Coliform (Col./100ml)		
	Monthly	Summer	Winter	Average Effluent	Summer	Winter	Average	Summer	Winter	Average Daily	Summer	Winter
January	0.358			23.6			10.0			11		
February	0.425			24.7			18.9			6		
March	0.549			25.5			13.1			15		
April	0.322			20.2			11.7			32		
May	0.430			13.9			11.6			9		
June	0.415			13.3			9.4			3		
July	0.253			11.6			7.3			10		
August	0.280			11.2			7.8			7		
September	0.276			10.1			8.5			8		
October	0.242			8.5			4.2			15		
November	0.428			29.6			41.9			24		
December	0.332			14.1			24.5			8		
Maximum	0.549	0.396	0.396	29.6	83.0	83.0	41.9	99	99	32	200	2000
Max as % Limit	139%			36%			42%			16%		
Average	0.359			17.2			14.1			12		
3 Month > Limit?	No											

Plant Loading Summary



Crescent South Heights Municipal Authority

Collection System Facilities

TREATMENT PLANT	Design Capacity (MGD)	Biological Treatment	Owner	Operator
Crescent South Heights STP	0.396	Activated Sludge	CSHMA	CSHMA
Pump Station	Peak Capacity	Avg Daily Flow	Owner	Operator
Bocktown L.S.	216,000 gpd	135,000 gpd	CSHMA	CSHMA
Glenwillard L.S.	1,500,000 gpd	359,000 gpd	CSHMA	CSHMA
South Heights L.S.	144,000 gpd	58,000 gpd	CSHMA	CSHMA
Wireton L.S.	72,000 gpd	12,000 gpd	CSHMA	CSHMA
Equalization Basin	Capacity	Location	Owner	Operator
None				

Sewer Maintenance Information

Service Community	Maintained By:	Mainten. Done:	Equipment Source	I/I Removal	I/I Flow Monitor
Crescent Township	CSHMA	Routine	Authority, COG	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Hopewell Township	HTSA	No Data	No Data	<input type="checkbox"/>	<input type="checkbox"/>
Moon Township	MTMA	Routine	COG	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
South Heights Township	CSHMA	Routine	Authority, COG	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Crescent South Heights Municipal Authority

Intermunicipal Agreements

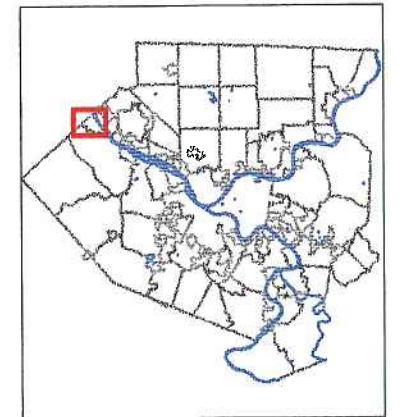
Agreement With	Date Enacted	Agreement Description	Expiration Date	Flow Limits (mgd)	Rate and Surcharge Provisions	Sampling Provisions	Flow Monitoring Provisions	Dispute Resol. Procedure	Basis of Cost Allocation
Moon Township Municipal Authority	09/09/64	Agreement between CSHMA and MTMA allowed Bocktown Hollow Sewer to pick up the Bon Meade section of Moon estimated to require 50% of Bocktown Hollow Sewer capacity and 20% of the STP's capacity	2004	No way to know if limits are being exceeded		No, all domestic		No, but there will be in the next one	One bill based on water usage. MTMA is using 24.5% of existing capacity, but, essentially, Moon could keep growing. MTMA has been contributing to make improvements to Bocktown P.S. and is contributing to capital items
Moon Township Municipal Authority	07/17/76	Addendum to September 9, 1964 agreement. Set aside 27.5% or 109,000 gpd of total capacity for the Moon service area due to STP increasing from 200,000 to 396,000 gpd							

Crescent-South Heights Municipal Authority

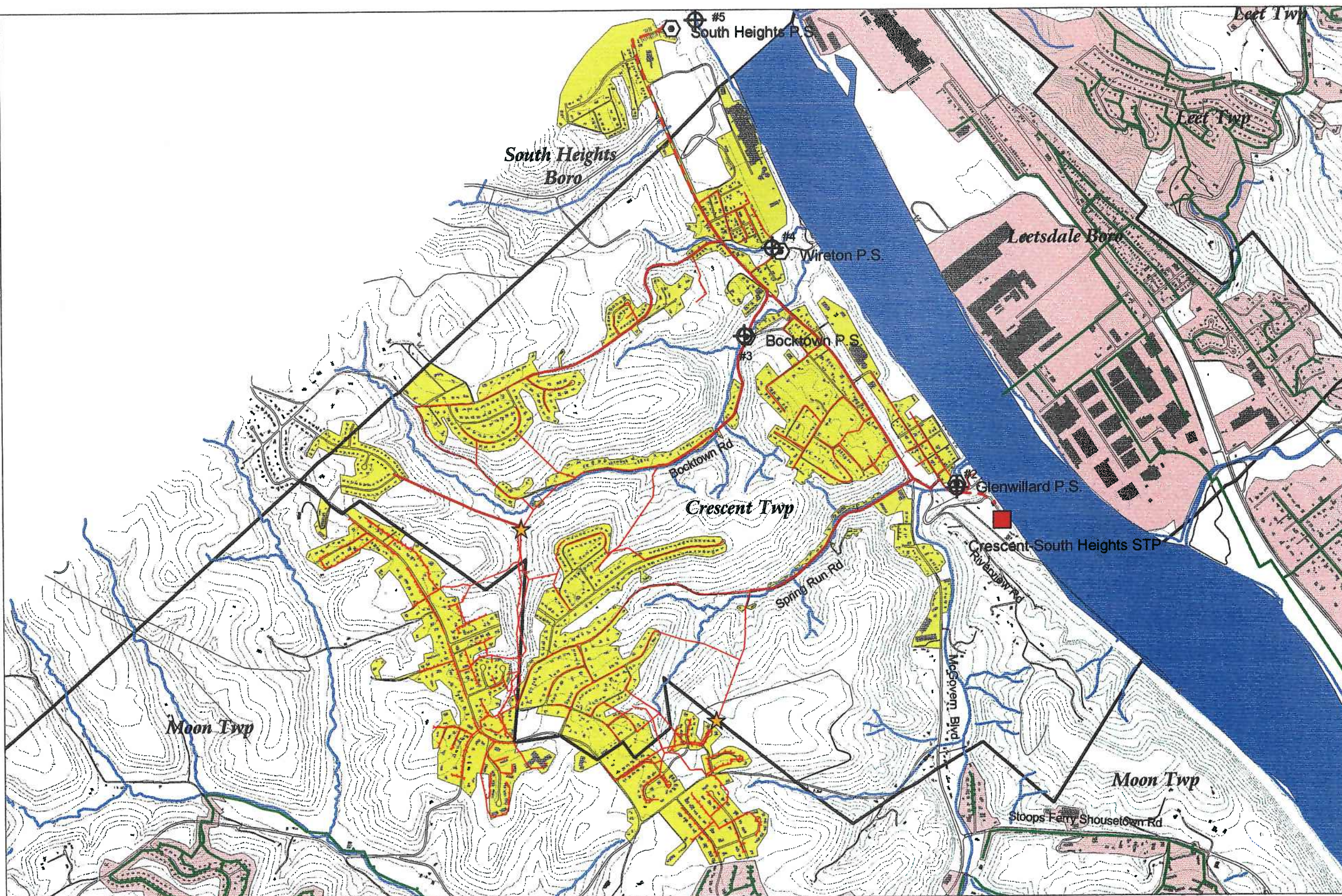
Water Pollution Control Facility
Service Area and Collection
System

Allegheny County
Department of Economic Development

Allegheny County, PA



400 0 400 800 Feet



- Public Treatment Facility
- Existing STP
- Pump Station
- Sanitary Sewer Outfall
- Intermunicipal Connection
- Municipal Boundary
- Major Road
- Contour
- Hydrologic Feature
- Building
- Collection System
- Separate
- Pipe Type
- Collector
- Force Main
- Trunk
- Neighboring Service Area
- Neighboring Collection System
- Not Field Verified

Source: (Sanitary Sewer System Map (Plate 1);
Michael Baker Jr. Inc.

Deer Creek Drainage Basin Authority

The Deer Creek Drainage Basin Authority (DCDBA) is a wastewater collection, conveyance and treatment authority in northeastern Allegheny County. The DCDBA owns and maintains a wastewater collection system, which conveys sewage from Indiana, West Deer, Richland, Hampton and Harmar Townships to the Allegheny Valley Joint Sanitary Authority's (AVJSA) Wastewater Treatment Plant (WWTP). It also owns and operates a small wastewater treatment facility, Hampshire Estates STP. The DCDBA has a 9-member board with representatives from West Deer and Indiana Townships. The DCDBA is not represented on the AVJSA board.

The DCDBA Hampshire Estates WWTP serves a 24-unit apartment complex. It receives flows equal to only one-fourth of its available capacity. Sludge is removed and hauled to AVJSA for treatment by a commercial hauler once every two years. The DCDBA views the available capacity of this facility as an opportunity for development on the surrounding available land.

In the last decade, the DCDBA permitted Richland Township to tie into its lines for transport to the Allegheny Valley Joint Sewage Authority plant and financed a 1.5-mgd expansion project at the 3.6-mgd AVJSA plant. By agreement, Richland may connect up to 1,054 Equivalent Dwelling Units (EDUs) to the DCDBA system. Further connections will require payment of a \$1,300 tap-in fee per EDU until capacity is reached. In 1993, Richland constructed the West Branch Deer Creek Interceptor and tied into the DCDBA system. Richland Township has ownership and maintenance responsibility for the West Branch Deer Creek Interceptor up to the point of intermunicipal connection in West Deer. In 1998, DCDBA agreed to permit Richland Township to extend service in the Bakerstown area, which lies within the Little Deer Creek, drainage area. To connect into the DCDBA system, Richland will need to construct an interconnecting sewer line in West Deer Township in the DCDBA service area. Richland will own this line in West Deer Township until the time when there are 132 connections from West Deer customers. At that time, Richland will transfer ownership and maintenance responsibilities for the West Deer portion of the line to the DCDBA. A flow meter will monitor flows in the Bakerstown line at the point of connection with DCDBA's interceptor.

The DCDBA owns and operates four pump stations. The Rich Hill Pump Station (PS), located at the confluence of Little Deer Creek and Deer Creek, pumps all wastewater generated within the system to the AVJSA plant. The pump station has a peak capacity of 14.26 mgd, but it bypasses at the influent manhole. In a March 1999 Notice of Violation to the DCDBA, the ACHD ordered the authority to submit a plan and schedule for corrective action. The DCDBA plans to upgrade the pump station and construct a 1 million-gallon equalization basin to eliminate this problem. The Bigler Road PS and tributary sewer system was recently constructed to permit development in the Harts Run and Saxonburg Boulevard corridor in Indiana Township. Flow received at the Bigler Road PS is pumped to the Hartwood Estates PS. The Hartwood Estates PS, with a capacity of 650,000 gpd, then, pumps to the Blue Run Interceptor. The DCDBA Grouse Run PS will be abandoned when the gravity sewers are constructed in 1999 to serve the Steeplechase development. DCDBA meters flows at the Rich Hill PS and the Bigler Road PS.

The DCDBA proposes to build a 100,000 gpd pump station to serve the Deer Run Golf Community and unsewered homes near proposed development. The pump station will be sized to permit future development. Additional areas in Indiana Township could also be served by the DCDBA; however, a prior service agreement with Etna Borough must be resolved before this can be accomplished.

DCDBA has an infiltration and inflow reduction program. A Corrective Action Plan was completed for the pump station and main interceptors to minimize inflow to the system during heavy precipitation events. DCDBA has been able to reduce wet weather flows in the main interceptor by rehabilitating all the submersible lids on the main interceptor. DCDBA installed flow meters to monitor the capacity in its sewer system and has done some isolation flow monitoring during wet weather. Extensive line rehabilitation will be performed in the Orchard Park area of Richland Township as part of the Bakerstown expansion project. The DCDBA performs all maintenance in Indiana, West Deer and Harmar Townships, and employs a foreman and four laborers and an administrative staff of 3.5 persons.

With the exception of the service area to the Hampshire Estate plant, the majority of the wastewater generated within the DCDBA service area will be treated by the AVJSA treatment plant. The AVJSA treatment facilities and the Rich Hill PS must be capable of handling the projected flows and loadings from the DCDBA service area by the year 2015. For a discussion of the AVJSA future service area population and plant flows and loadings, see the Allegheny Valley Joint Sewer Authority treatment agency description.

Deer Creek Drainage Basin Authority

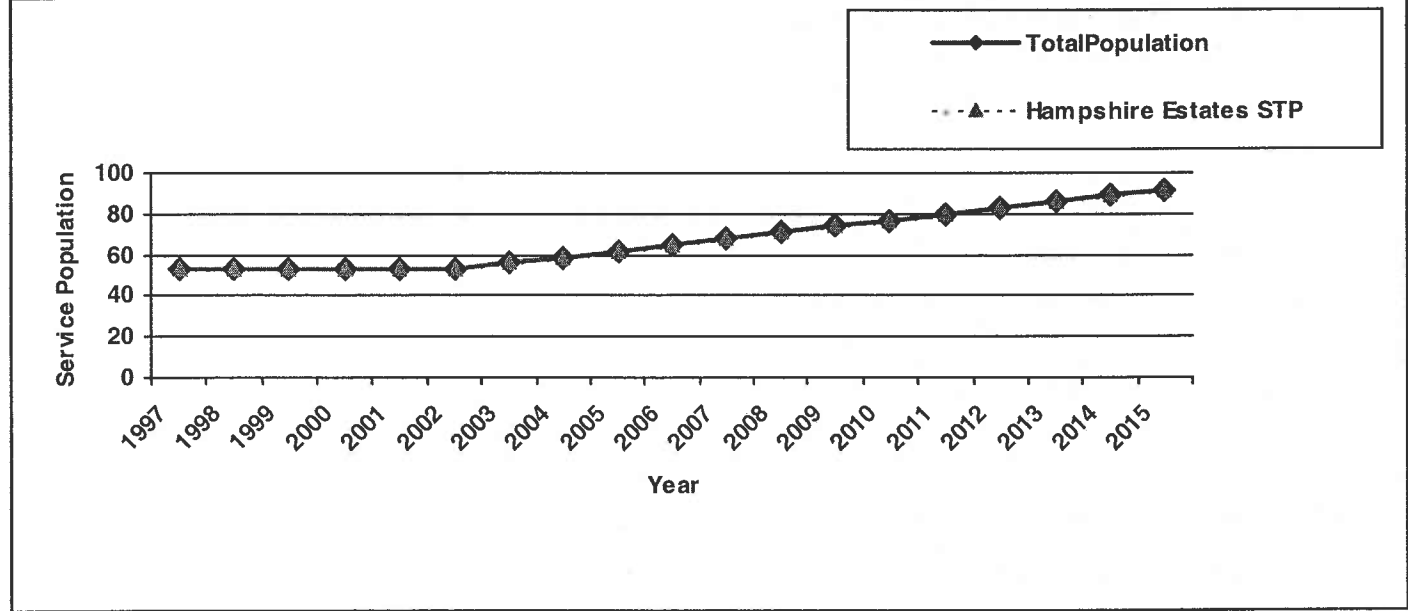
Service Area Summary

POTW Name	1997 Service Population	2015 Service Population	Municipality	Type Of Sewer System
Hampshire Estates STP	53	92	West Deer Township	Separate

Treatment Process Summary

POTW Name	Equalization	Screening	Comminution	Grit Removal	Prechlorination	Primary Treatment	Activated Sludge	Extended Aeration	Contact Stabilization	Trickling Filter	Disinfection	Dechlorination	Filtration	Reaeration	Thickening	Aerobic Digestion	Anaerobic Digestion	Lime Stabilization	Composting	Thermal Processing	Dewatering	Land Application	Landfill	Incineration	Haul to other STP	Odor Control
Hampshire Estates STP							■																			■

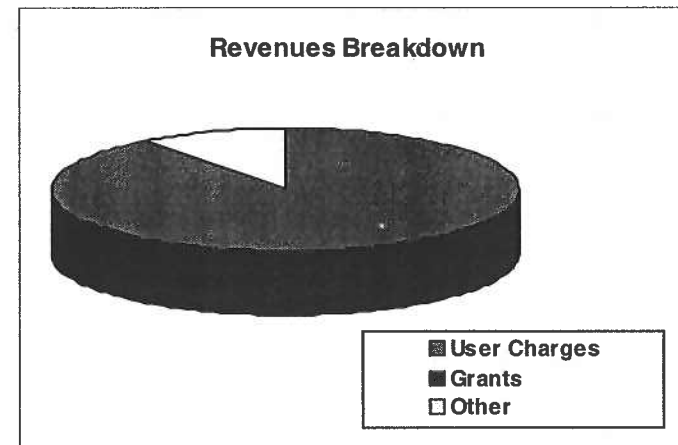
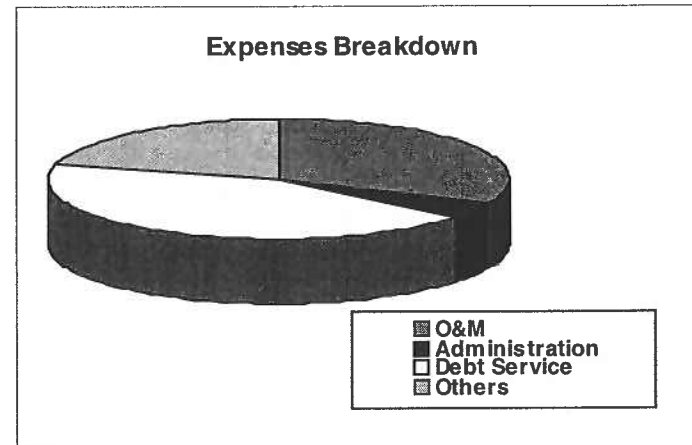
Service Population Projections



Deer Creek Drainage Basin Authority

Sewer Use Ordinances

Municipality	Corrective Action Plan	Grease Trap Requirement	Industrial Pretreatment Program	Illicit Connection Inspection At Sale	Surcharge
West Deer Township			AVJSA Sewer Use Ordinance		



Financial Information

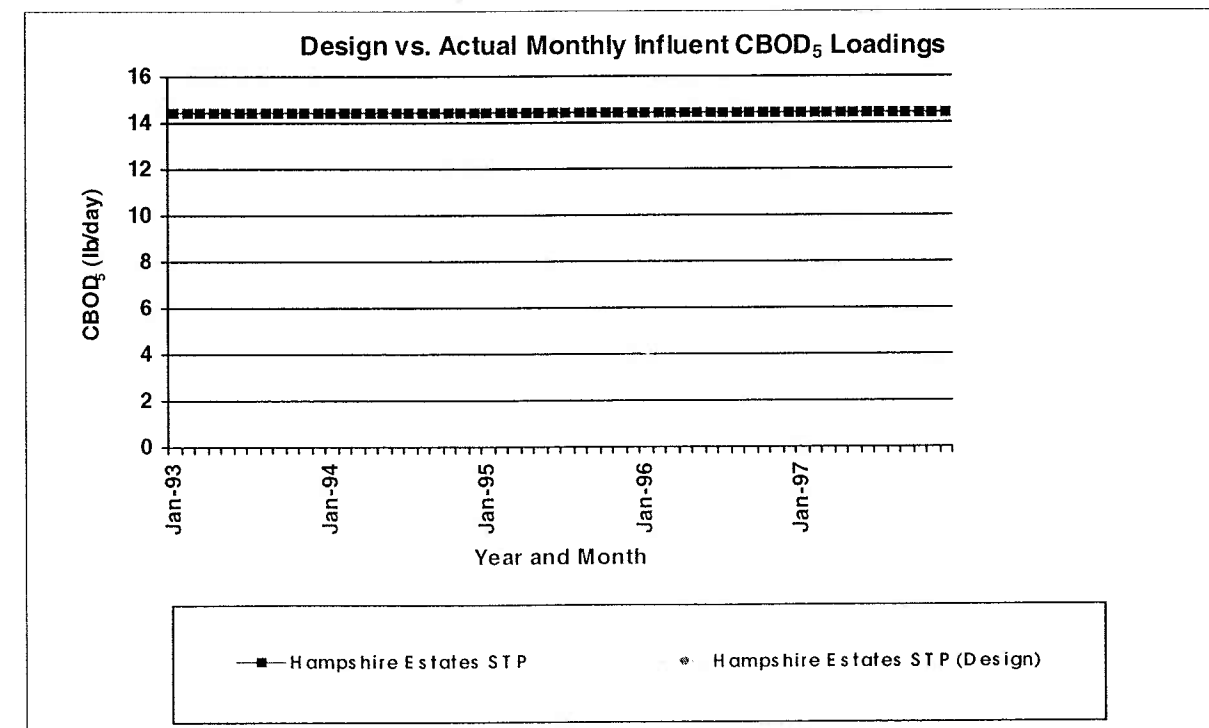
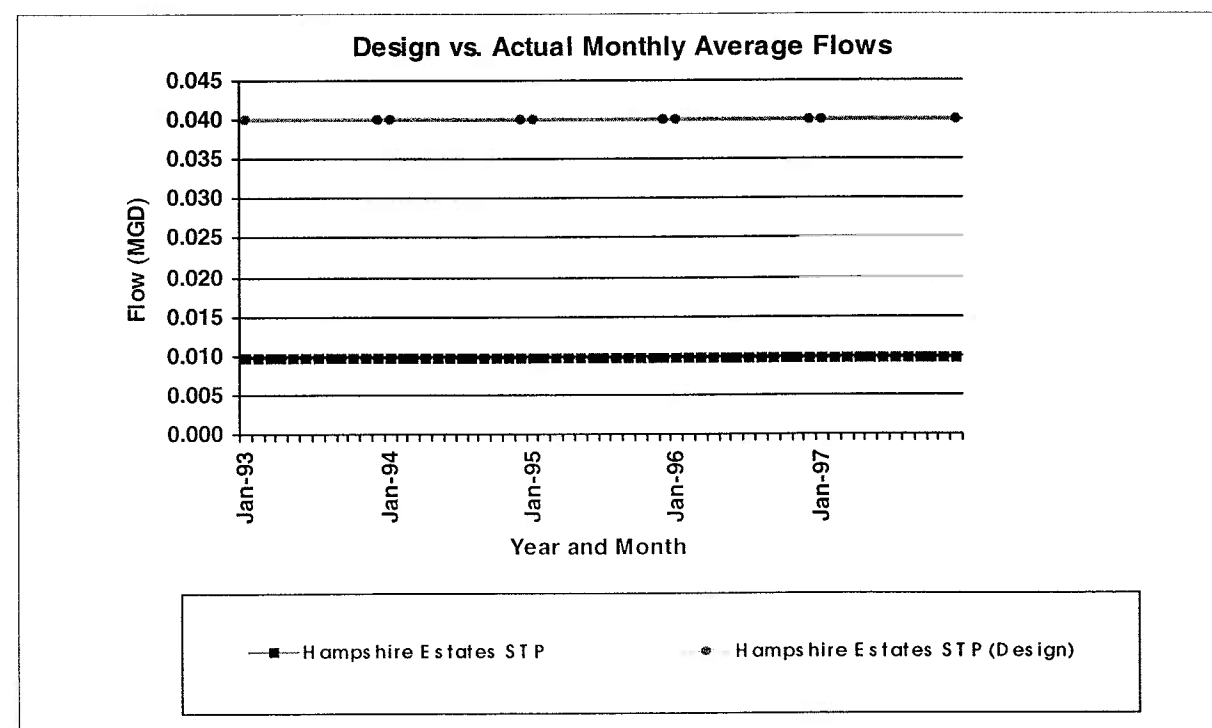
REVENUES		
User Charges:		\$1,611,300
Grants:		\$4,000
Other:		\$183,700
Total Revenues		\$1,799,000
EXPENSES		
Operations and Maintenance		\$564,100
Administration:		\$78,100
Debt Service:		\$755,000
Other:		\$375,000
Total Expenses		\$1,772,200
Surplus(Deficit):		\$26,800
Debt Service Coverage Ratio		1.04
	YEAR:	1999
		Actual/ Budgeted
Information Source:		
Revenues	DCDBA Annual Report (Gibson-Thomas Eng.)	Budgeted
Expenses	DCDBA Annual Report (Gibson-Thomas Eng.)	Budgeted

Deer Creek Drainage Basin Authority

1997 Plant Performance

Hampshire Estates STP	Average Daily Flow (mgd)			CBOD ₅ (lb/Day)					TSS (lb/Day) Effluent			Effluent Ammonia Nitrogen (mg/l)			Effluent Coliform (Col./100ml)			
	Monthly	Summer	Winter	Monthly Influent	Average Effluent	% Removal	Summer	Winter	Average	Summer	Winter	Average	Summer	Winter	Average Daily	Summer	Winter	
January	0.0023			14.4	0.06	99.6%			0.5			8.0	E		1			
February	0.0023			14.4	0.04	99.7%			0.5			5.9	E		2			
March	0.0023			14.4	0.06	99.6%			0.7			0.5			2			
April	nd			14.4	nd	nd			nd			nd			nd			
May	0.0023			14.4	0.04	99.7%			0.4			0.3			4			
June	nd			14.4	nd	nd			nd			nd			nd			
July	nd			14.4	nd	nd			nd			nd			nd			
August	0.0023			14.4	0.02	99.9%			0.1			0.2			2			
September	0.0023			14.4	0.02	99.9%			0.1			0.3			9			
October	0.0023			14.4	0.02	99.9%			0.2			4.8	E		1			
November	0.0023			14.4	0.04	99.7%			0.3			0.2			1			
December	nd			14.4	nd	nd			nd			nd			nd			
Maximum	0.0023	0.04	0.04		0.06		8	8	0.69	10	10	8.0		2.5	5.0	9	200	2000
Max as % Limit	6%				1%				7%			160%			0%			
Average	0.0023				0.04				0.35			2.5			3			
3 Month > Limit?	No																	

Plant Loading Summary



Deer Creek Drainage Basin Authority

Collection System Facilities

TREATMENT PLANT	Design Capacity (MGD)	Biological Treatment	Owner	Operator
Hampshire Estates STP	0.04	Extended Aeration	DCDBA	DCDBA

Pump Station	Peak Capacity	Avg Daily Flow	Owner	Operator
Bigler Rd.	70,000 gpd		DCDBA	DCDBA
Grouse Run	24,000 gpd		DCDBA	DCDBA
Hartwood Estates	650,000 gpd		DCDBA	DCDBA
Rich Hill	14.26 mgd	1.925	DCDBA	DCDBA

Equalization Basin	Capacity	Location	Owner	Operator
Rich Hill P.S. (proposed)	1 million-gallons	In-Line	DCDBA	DCDBA

Sewer Maintenance Information

<i>Service Community</i>	<i>Maintained By:</i>	<i>Mainten. Done:</i>	<i>Equipment Source</i>	<i>I/I Removal</i>	<i>I/I Flow Monitor</i>
West Deer Township	DCDBA	Routine	Authority, Contractor, COG	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Deer Creek Drainage Basin Authority

Intermunicipal Agreements

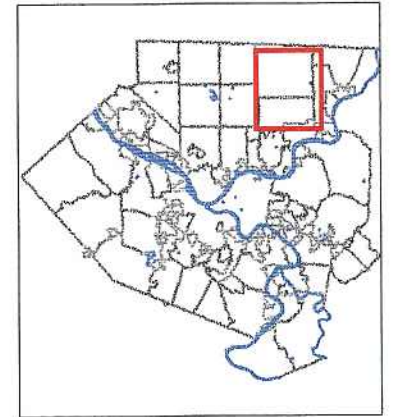
Agreement With	Date Enacted	Agreement Description	Expiration Date	Flow Limits (mgd)	Rate and Surcharge Provisions	Sampling Provisions	Flow Monitoring Provisions	Dispute Resol. Procedure	Basis of Cost Allocation
Allegheny Valley Joint Sewage Authority	07/05/88	DCDBA will pay the entire cost of the first 1.5 MGD expansion to the AVJSA treatment plant to extend its rated capacity to 5.1 MGD. Further necessary expansion will be shared by AVJSA and DCDBA							
Allegheny Valley Joint Sewage Authority	01/01/76	The AVJSA is in agreement for transporting, treating, and disposing of sanitary sewage from the Contracting Municipalities	The latest maturity date of any sewer revenue bond or 99 years				Flow meters at connection points	Arbitration	A sewage service charge equal to 100% of Deer Creek Users' share of the operating expenses of Allegheny Valley Authority not paid from governmental contributions plus an additional service charge equal to 120% of Deer Creek Users' share of the average annual debt service
Richland, Township of	09/09/98	Amendment to 12/15/90 agreement states Richland will extend service to Bakerstown to be treated by the AVJSA treatment facilities							For each customer, DCDBA shall pay \$700.00 to Richland. After connection, Richland shall pay to DCDBA a tap-in-fee of \$1,300.00 per EDU
Richland, Township of	12/15/90	Amendment of agreement to enable Richland to extend service to Bakerstown which lies in the Little Deer Creek drainage area of Richland. Richland will design and install the line and also pay for a flow meter at the point of connection to the Bakerstown line.							Any customer that taps into Richland's line from West Deer will need to pay \$700 to Richland
Richland, Township of	12/15/90	Agreement makes Richland a contract customer of DCDBA in order to transport sewage via the DCDBA interceptor line.	As long as the Richland Township Collection System is connected to both the DCDBA Interceptor Lines and the AVJSA Sewer System	Richland permit to connect 1,054 EDU's. If >, Richland must conduct SSES in 6 mo. to identify action to reduce infiltration by 50%.	Any connections over and above 1,054 EDU's, must pay a tap-in-fee of \$1,300 per EDU			3rd party arbitration, then court	Based on water consumption. Transportation fee = 6% of total DCDBA costs for operation, maintenance, administrative, and debt service excluding AVJSA treatment costs.

Deer Creek Drainage Basin Authority

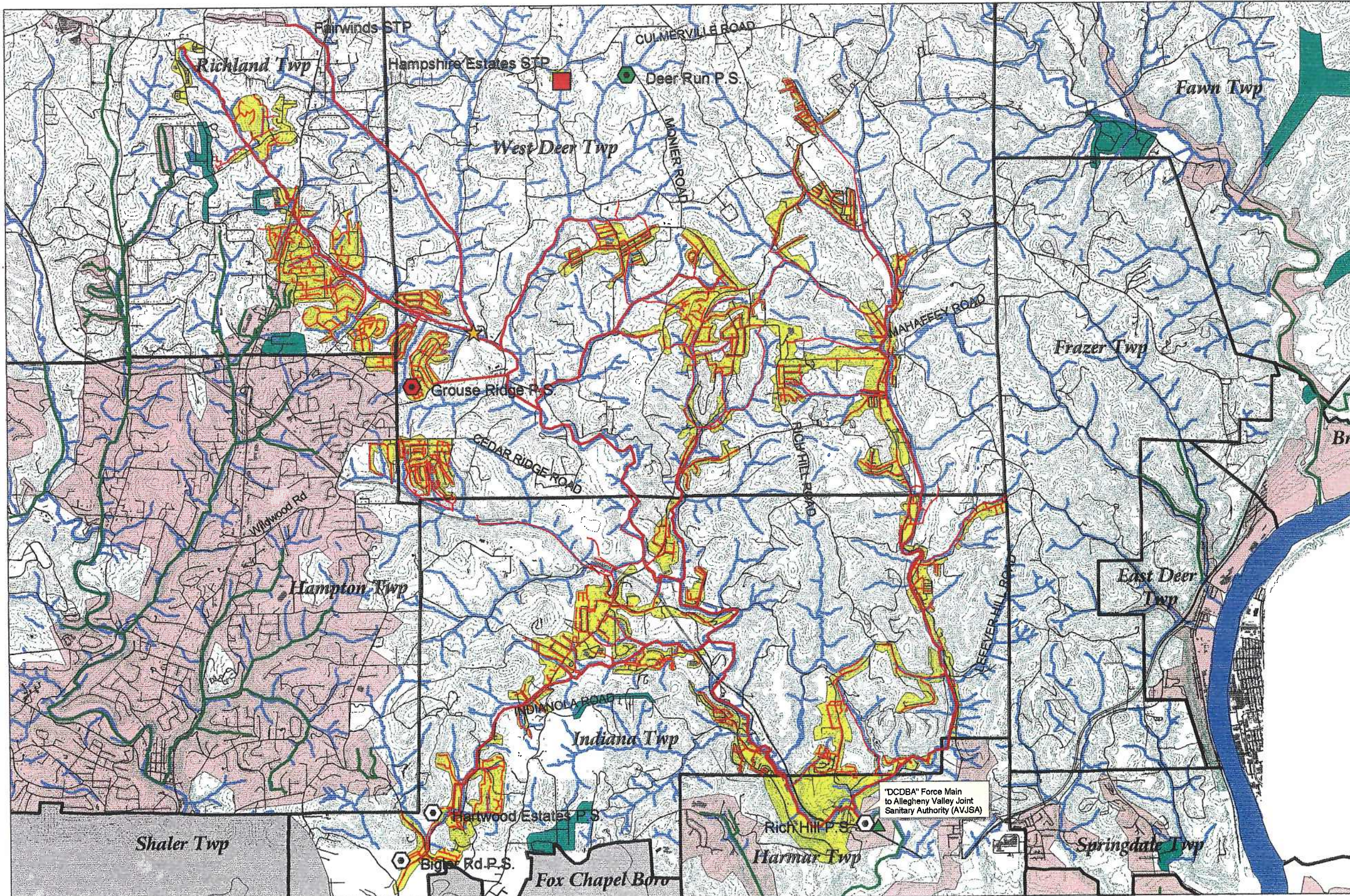
Water Pollution Control Facility Service Area and Collection System

Allegheny County
Department of Economic Development

Allegheny County, PA



2000 0 2000 4000 Feet



- Public Treatment Facility
 - Existing STP
 - STP to be Abandoned
 - Pump Station
 - Existing
 - Proposed
 - To Be Abandoned
 - Intermunicipal Connection
 - Future Equalization Basin
 - Municipal Boundary
 - Major Road
 - Contour
 - Hydrologic Feature
 - Building
 - Collection System
 - Separate
 - On - Lot Problem Area
 - Pipe Type
 - Collector
 - Force Main
 - Trunk
 - Neighboring Service Area
 - Neighboring Collection System
 - ALCOSAN Service Area
- Not Field Verified

Source: Gibson - Thomas Engineering Company, Inc.
Deer Creek Drainage Basin Authority Digital Sewer Lines

Dravosburg Borough

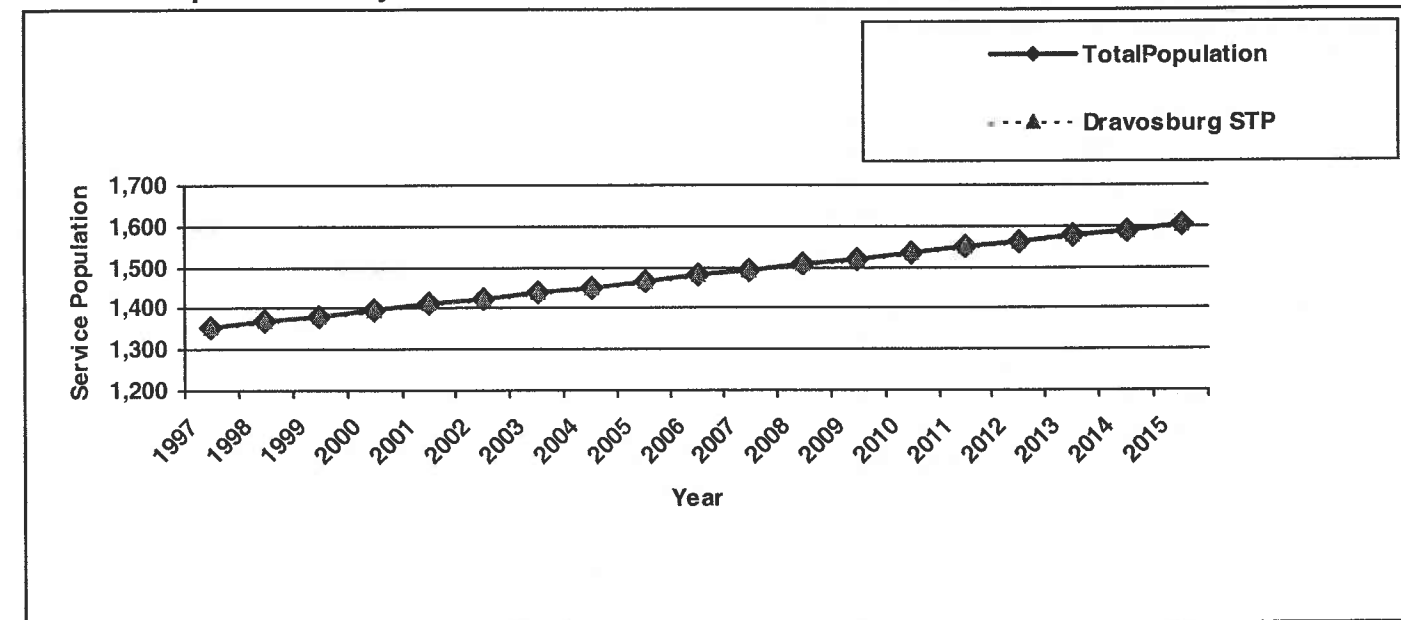
Service Area Summary

POTW Name	1997 Service Population	2015 Service Population	Municipality	Type Of Sewer System
Dravosburg STP	1356	1604	Dravosburg Borough	Combined / Separate

Treatment Process Summary

POTW Name	Equalization	Screening	Comminution	Grit Removal	Prechlorination	Primary Treatment	Activated Sludge	Extended Aeration	Contact Stabilization	Trickling Filter	Disinfection	Dechlorination	Filtration	Reaeration	Thickening	Aerobic Digestion	Anaerobic Digestion	Line Stabilization	Composting	Thermal Processing	Dewatering	Land Application	Landfill	Incineration	Haul to other STP	Odor Control
Dravosburg STP		■	■	■			■							■												■

Service Population Projections



Dravosburg Borough

The Borough of Dravosburg operates the Dravosburg Sewage Treatment Plant (STP) serving approximately 600 customers in Dravosburg. Dravosburg operates a 0.48-mgd extended aeration type activated sludge treatment plant (secondary treatment), which discharges to the Monongahela River. The permitted organic loading capacity of the treatment plant is 2,780 lb CBOD₅/day. The average monthly flow at the Dravosburg STP in 1997 was 0.408 mgd. However, according to a representative of the Dravosburg STP, the average monthly flow has declined since Dravosburg removed mine drainage from the collection system and put in a storm sewer using PennVest funds. The reported average monthly organic loading in 1997 was 90.9 lb CBOD₅/day.

In 1961, a permit was issued to the Borough to construct a STP to provide intermediate treatment with discharge to the Monongahela River. At the same time, a combined sewage collection system was built. The Richland and North Hills sanitary sewer collection areas were built at a later date. In 1968, Dravosburg was ordered to provide secondary treatment. At the same time, a regulator station with a tide gate to separate stormwater was also approved. The plant has flow bypasses for each treatment process. The bypasses were built into the plant to provide alternative flow patterns around tanks and for equipment maintenance, cleaning, repairs, or replacement.

The service area is divided into two sanitary sewer areas, known as the Richland and North Hills areas, and one separate sanitary sewer area tributary to Bettis Road P.S., which is pumped into a combined system. The remainder is served by a combined system. U.S. Army Corps of Engineer's proposed Lock & Dams Project (the elimination of Lock and Dam #2, which will cause the Monongahela River elevation to rise five feet) will back flood the inlet into the combined sewer regulator. Plans are being prepared to change the main combination sewer line because of this project. This will divert more flow to the plant, which is sanitary only and does not flow through the regulator. Upon completion (2001) adjustments will be made to the regulator to maximize flow for treatment. Currently, the Bettis Road pump station has an emergency overflow.

On August 15, 1996, PaDEP and ACHD issued a consent order and agreement (CO&A) to the Borough of Dravosburg. Specific violations included: improper sludge disposal procedures, non-compliant effluent sampling, bypassing due to mine drainage flows, sewage discharge to underground mines, and failure to provide adequate collection and treatment facilities for current and future sewage disposal needs. Additionally, several operational and equipment deficiencies at the STP were noted.

According to the CO&A, capital improvements to the STP and sanitary sewer system were due by June 30, 1998. Alternatively, sanitary sewage flows could have been conveyed to another POTW by January 31, 1999. According to the 1997 Chapter 94 Report, the following STP and collection system improvements have occurred in Dravosburg. A small sludge tank is used to collect sludge, and an aboveground tank is being utilized for additional sludge thickening and decanting prior removal. The Borough will enter a five-year, sludge-hauling contract in 1998 to provide for sludge disposal. Permanent tanks for sludge collection prior to hauling are planned for the future. Staffing additions in have helped with operations at the STP. According to the discharge monitoring reports, the STP functioned within the NPDES design parameters in 1997.

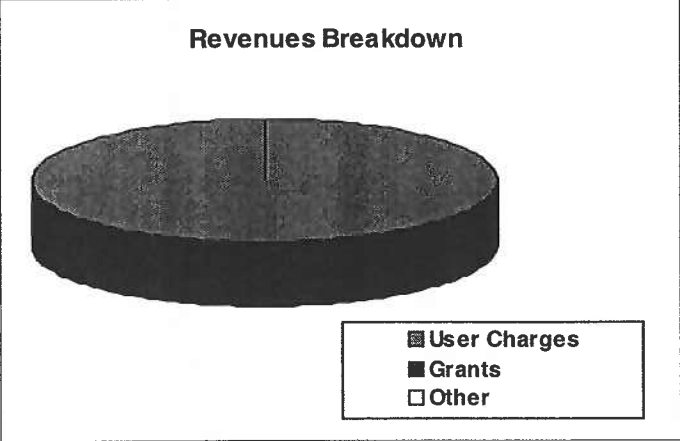
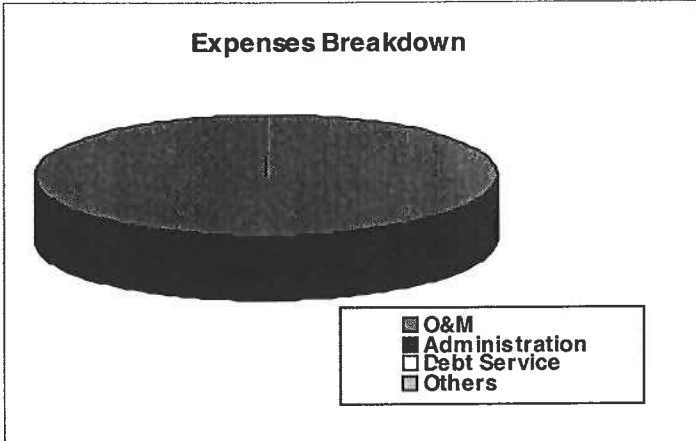
The Borough of Dravosburg owns and maintains the sewer collection and conveyance system tributary to the Dravosburg STP. A two-person crew through the Dravosburg Public Works Department (PWD) completes maintenance on an as-needed basis except for a modest amount of proactive cleaning, inspecting and rehabilitation. Equipment is either owned by the Borough (i.e., pick-up truck, dump truck, and backhoe) or rented through the Steel Valley Council of Governments (SVCOG) (i.e., sewer jet truck, sewer camera truck). The combined system regulator is monitored on a quarterly basis for proper operation. More sanitary flow is being taken out of the combined system (regulator) and directed to the headworks of the plant. Under the Nine Minimum Controls, Dravosburg will clean catch basins on a 4-year rotational basis.

The Dravosburg service area population of approximately 1,356 is projected to increase to approximately 1,600 by 2015. Based on the 2015 population increase, the hydraulic and organic loading to the treatment plant are expected to increase by 19 percent. The hydraulic loading is projected to increase to approximately 0.48 mgd, and the organic loading is projected to increase to approximately 110 lb CBOD₅/day. The projected average daily flow to the plant approaches the current design capacity. Actual future flow rates will need continued evaluation to allow for adequate future capacity. The organic loading capacity of the plant appears to be adequate for projected average daily organic loading conditions in 2015.

Dravosburg Borough

Sewer Use Ordinances

Municipality	Corrective Action Plan	Grease Trap Requirement	Industrial Pretreatment Program	Illicit Connection Inspection At Sale	Surcharge
Dravosburg Borough	Yes	Yes	No	No	



Financial Information

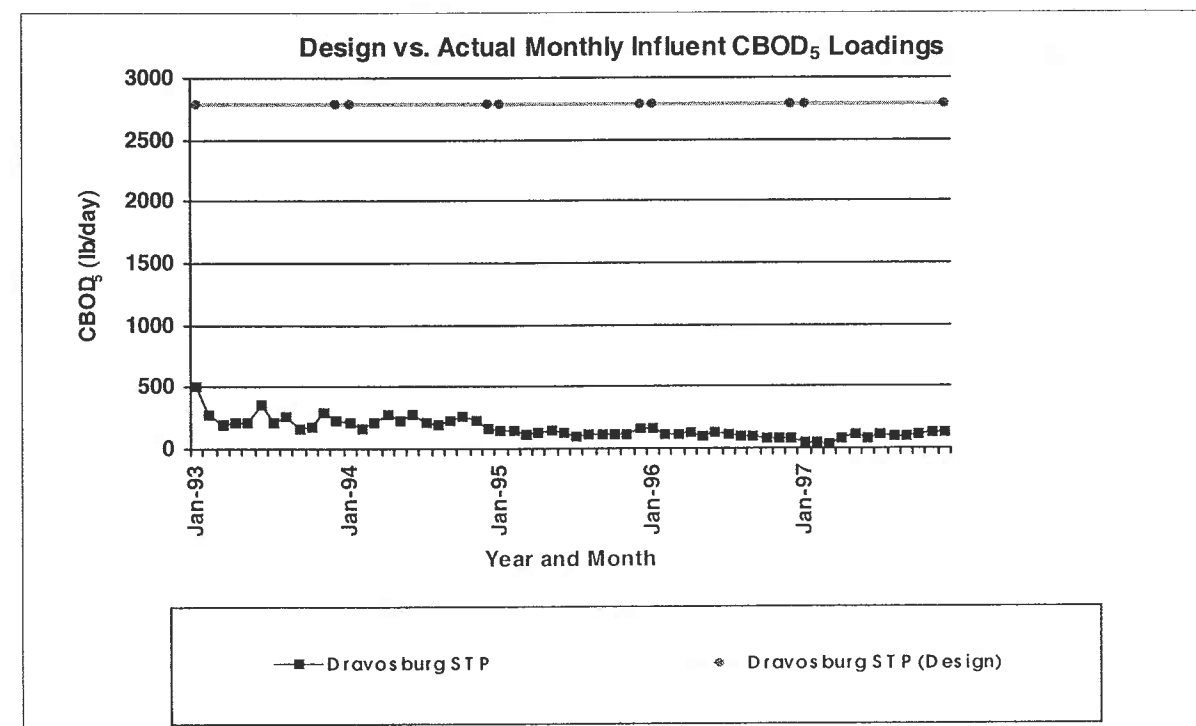
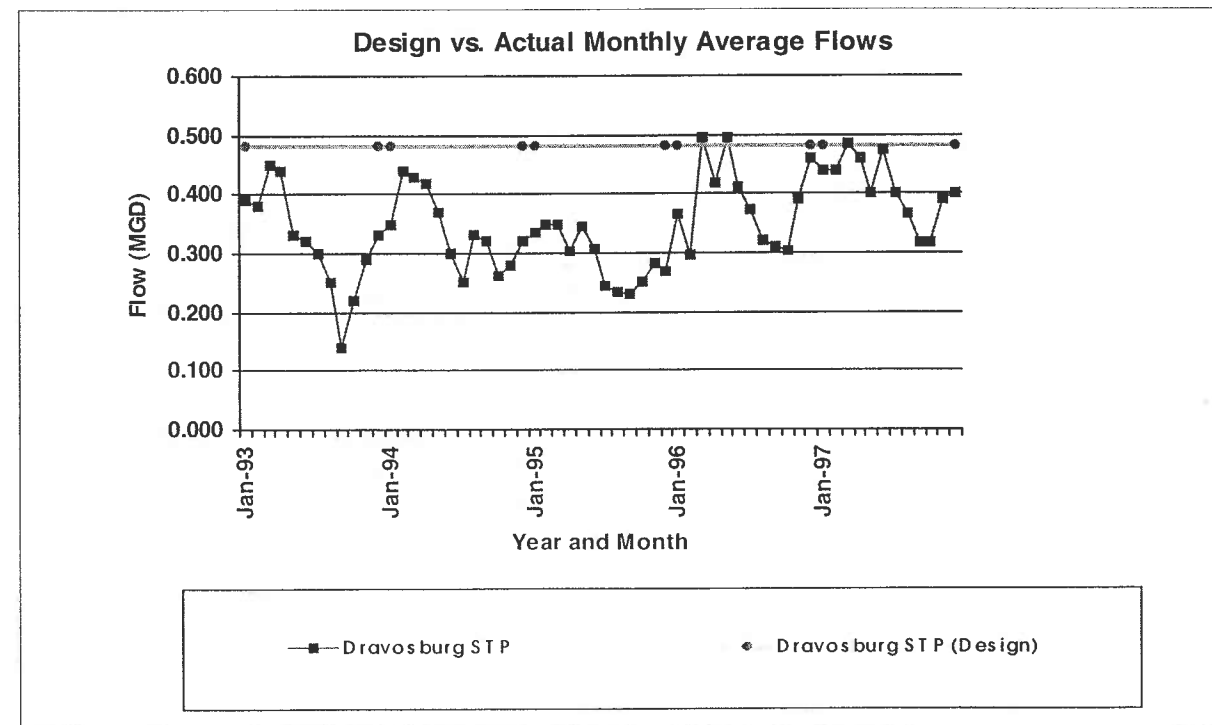
REVENUES		
User Charges:		\$278,314
Grants:		\$0
Other:		\$0
Total Revenues		\$278,314
EXPENSES		
Operations and Maintenance		\$176,538
Administration:		\$0
Debt Service:		\$0
Other:		\$0
Total Expenses		\$176,538
Surplus(Deficit):		\$101,776
Debt Service Coverage Ratio		
	YEAR:	1995
Information Source:		Actual/Budgeted
Revenues	Local Government Financial Statistics (PaDCED)	Actual
Expenses	Local Government Financial Statistics (PaDCED)	Actual

Dravosburg Borough

1997 Plant Performance

Dravosburg STP	Average Daily Flow (mgd)			CBOD ₅ (lb/Day)			TSS (lb/Day) Effluent			Effluent Coliform (Col./100ml)				
	Monthly	Summer	Winter	Monthly Influent	Average Effluent	% Removal	Summer	Winter	Average	Summer	Winter	Average Daily	Summer	Winter
January	0.44			57	nd	nd			nd			nd		
February	0.44			45	4	92%			60			78		
March	0.48			32	nd	nd			nd			nd		
April	0.46			82	6	92%			39			51		
May	0.40			107	7	93%			71			70		
June	0.48			83	6	93%			48			59		
July	0.40			112	8	93%			30			23		
August	0.37			99	8	92%			54			24		
September	0.32			98	6	94%			23			38		
October	0.32			114	6	94%			34			21		
November	0.39			128	13	90%			17			25		
December	0.40			133	22	83%			41			31		
Maximum	0.48	0.48	0.48		22.40		100	100	71	120	120	78	200	2000
Max as % Limit	101%				22%				59%			39%		
Average	0.41				9				42			42		
3 Month > Limit?	No													

Plant Loading Summary



Dravosburg Borough

Collection System Facilities

TREATMENT PLANT	Design Capacity (MGD)	Biological Treatment	Owner	Operator
Dravosburg STP	0.48	Extended Aeration	DRAV	DRAV

Pump Station	Peak Capacity	Avg Daily Flow	Owner	Operator
Bettis Rd.	0.252 mgd		DRAV	DRAV

Equalization Basin	Capacity	Location	Owner	Operator
None				

Sewer Maintenance Information

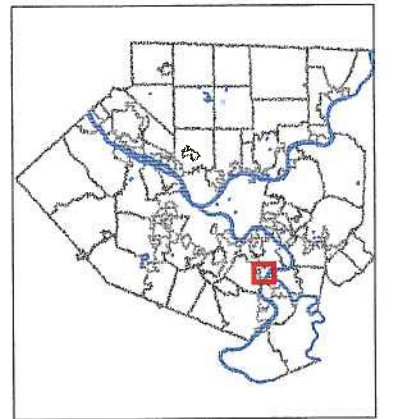
<i>Service Community</i>	<i>Maintained By:</i>	<i>Mainten. Done:</i>	<i>Equipment Source</i>	<i>I/I Removal</i>	<i>I/I Flow Monitor</i>
Dravosburg Borough	Dravosburg Borough	As-needed	Borough, COG	<input type="checkbox"/>	<input type="checkbox"/>

Dravosburg Borough

Water Pollution Control Facility Service Area and Collection System

Allegheny County
Department of Economic Development

Allegheny County, PA



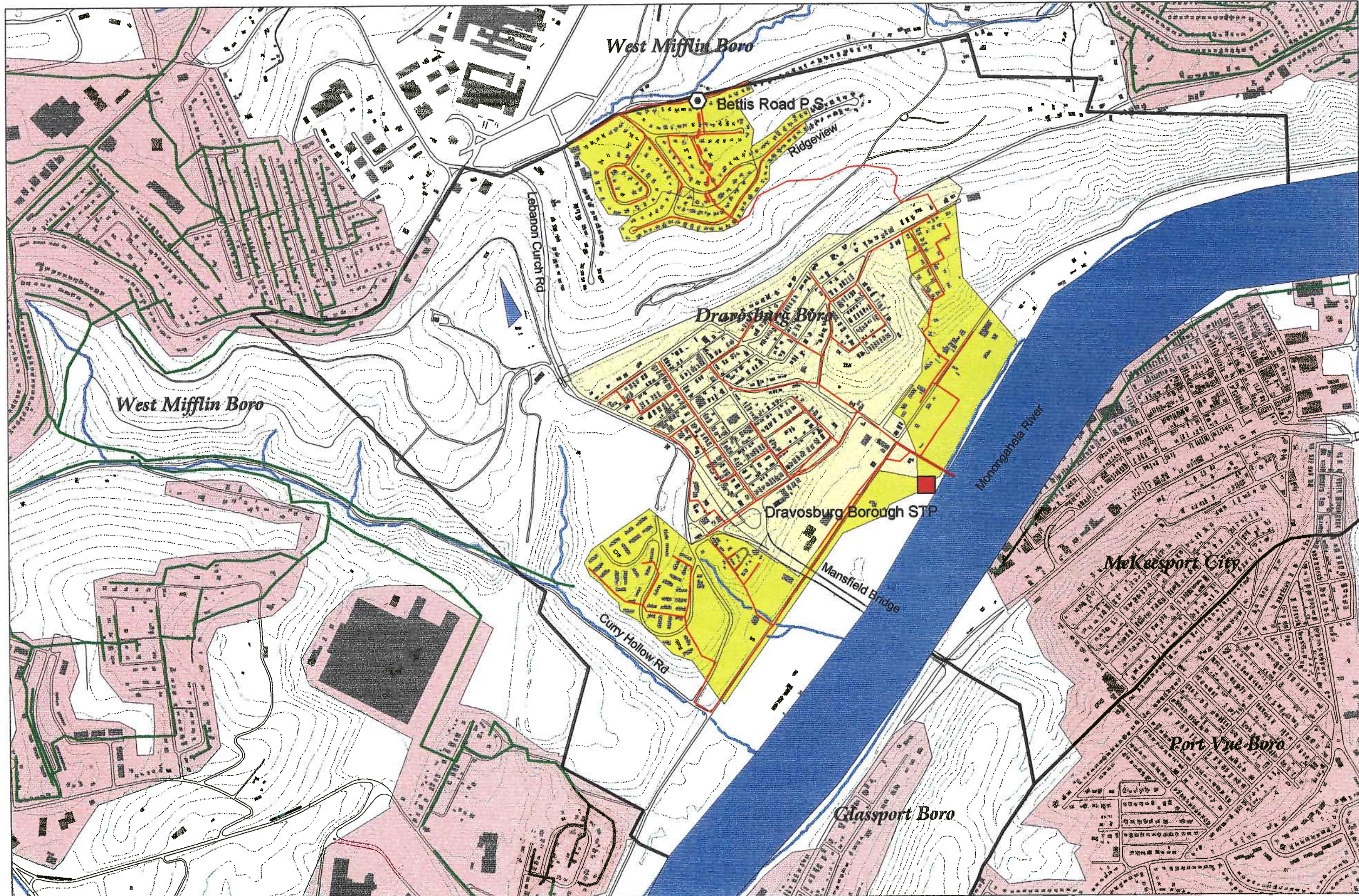
300 0 300 600 Feet

- Public Treatment Facility
- Existing STP
- Pump Station
- Municipal Boundary
- Major Road
- Contour
- Hydrologic Feature
- Building
- Collection System
- Combined
- Separate
- Pipe Type
- Collector
- Force Main
- Trunk
- Neighboring Collection System
- Neighboring Collection System

Not Field Verified

Source: Borough of Dravosburg Master Index; 1992

May, 1999



City of Duquesne

The City of Duquesne owns and operates the Duquesne Sewage Treatment Plant (STP) serving approximately 3,575 households in Duquesne. From 1963 to the early 1980s, the City of Duquesne had a sanitary sewer authority. In November 1997 the City council began to discuss reinstating the sanitary authority. The Duquesne Sanitary Authority (DSA) was reinstated in early 1999 and will act as a financial authority. To date, the City of Duquesne owns and operates the sewage treatment plant and sewage collection system.

The Duquesne STP is a 2.0-mgd activated sludge contact stabilization type plant that discharges to the Monongahela River near the mouth of Thompson Run. The permitted organic loading to the treatment plant is 2,780 lb CBOD₅/day. The average monthly flow at the Duquesne STP in 1997 was 0.67 mgd and the average monthly organic loading in 1997 was 640 lb CBOD₅/day. The entire collection system is gravity flow; there are no pump stations associated with the Duquesne STP. The STP employs two certified operators who also perform regular maintenance and a chemist who runs the on-site laboratory for all NPDES testing.

The Duquesne STP has no major problems provided the combined sewer overflow diversion structure regulators work properly. During wet weather, if regulators do not work, the plant is hydraulically overloaded. There is a possibility that the Army Corps of Engineers will relocate one of the combined sewer diversion structures to a higher elevation. Elimination of lock and dam #2 on the Monongahela River will cause the river elevation to rise five feet and therefore the Thompson Run culvert will be flooded. It is also possible that a second discharge line for the STP will be added to provide additional discharge capacity.

All of the Duquesne system is combined. There are four regulators and four combined sewer overflows (CSOs) in addition to the plant outfall on the system. The City of Duquesne owns and maintains the sewer collection and conveyance system tributary to the Duquesne STP. A modest amount of proactive cleaning, inspection and rehabilitation is performed, however, most maintenance is completed by the Duquesne Public Works Department on an as-needed basis. Equipment is either owned by the City (i.e., backhoe) or rented through the Steel Valley Council of Governments (SVCOG) (i.e., sewer truck, closed circuit TV, jet truck). Several sections of collector sewers and trunklines within the City have inadequate grade and low normal flows, or are clogged with grit due to the nature of combined sewage. Each year the jet truck is used when necessary to clean out problem lines.

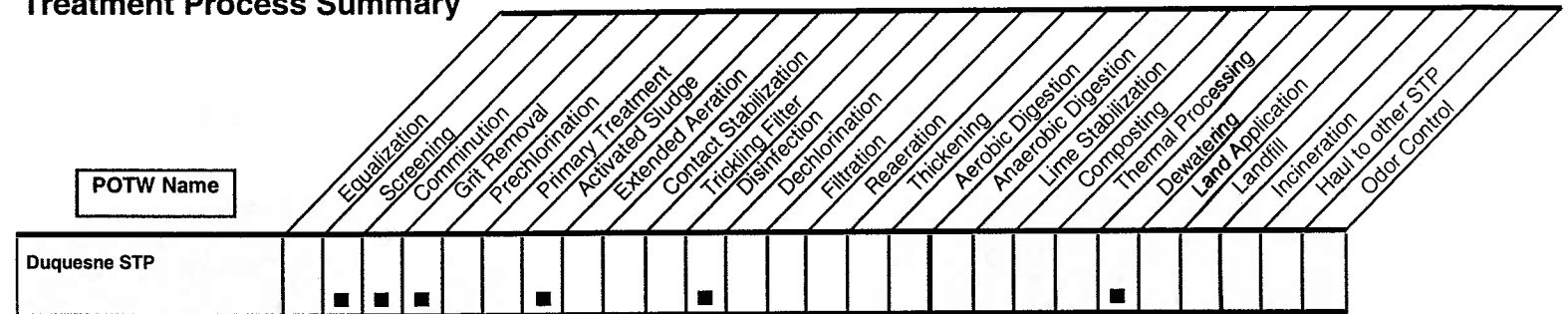
The System Inventory and Characterization, Hydraulic and Hydrologic Characterization reports have been completed as required under the National CSO Control Policy requirements of their NPDES discharge permit. As part of the Nine Minimum Controls standards implemented by Duquesne, there is a 4-year rotating sewer cleaning program and flow monitoring provisions for the regulator structures.

The City of Duquesne service area population of approximately 8,459 is projected to increase to approximately 8,500 by 2015. Based on the 2015 population increase, the hydraulic and organic loading to the treatment plant are expected to increase/decrease by 0.5 percent. The hydraulic loading is projected to increase to approximately 0.72 mgd, and the organic loading is projected to increase to approximately 640 lb CBOD₅/day. The hydraulic and organic loading capacities of the plant appear to be adequate for projected average daily flow and loading conditions in 2015.

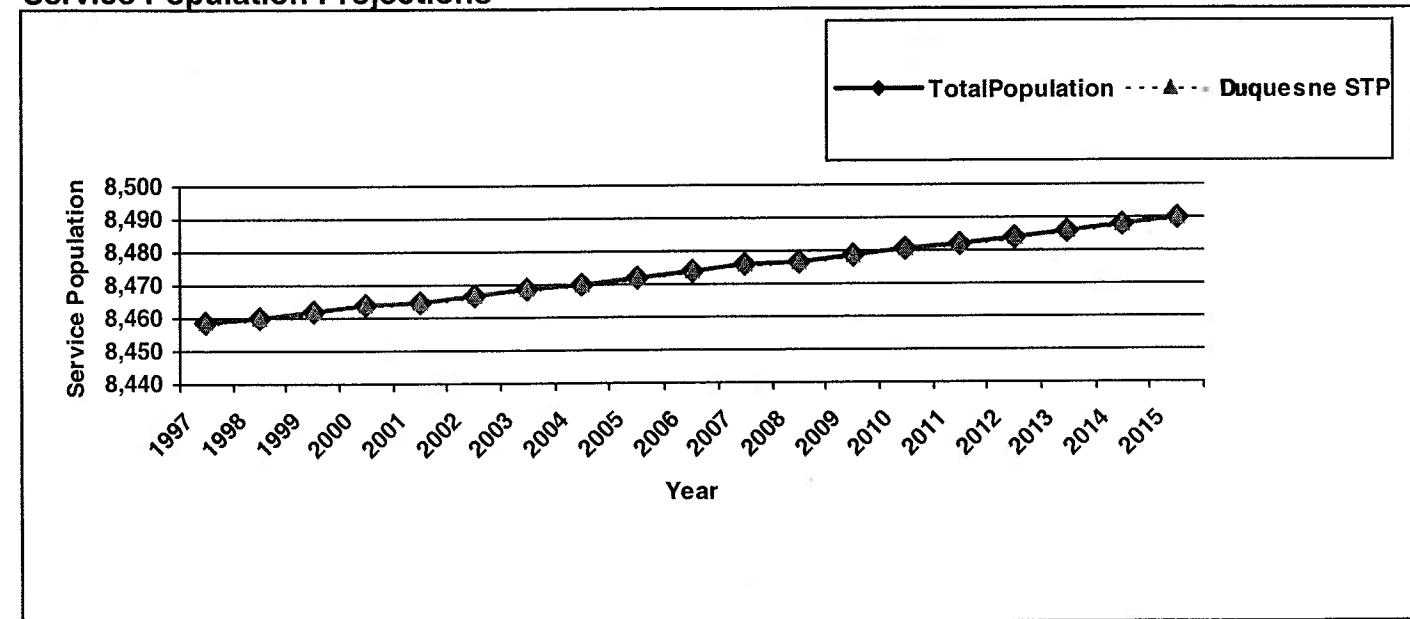
Service Area Summary

POTW Name	1997 Service Population	2015 Service Population	Municipality	Type Of Sewer System
Duquesne STP	8459	8490	Duquesne, City of	Combined

Treatment Process Summary



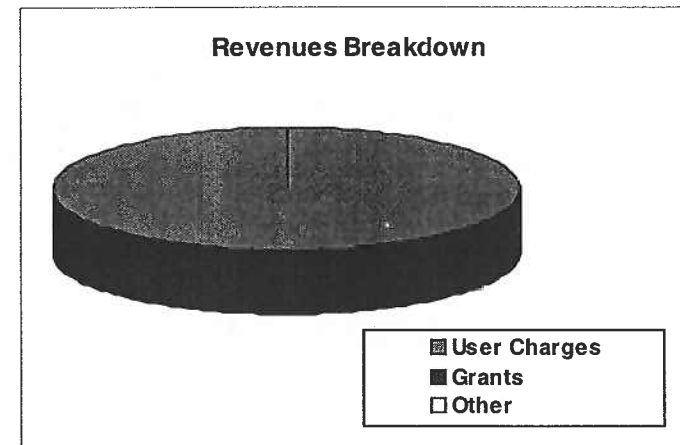
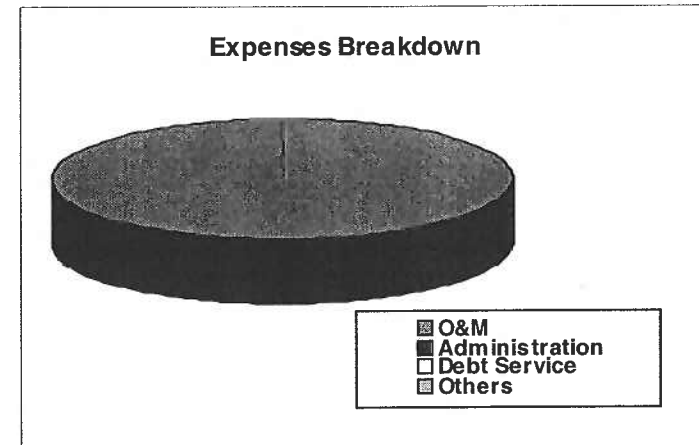
Service Population Projections



City of Duquesne

Sewer Use Ordinances

Municipality	Corrective Action Plan	Grease Trap Requirement	Industrial Pretreatment Program	Illicit Connection Inspection At Sale	Surcharge
Duquesne, City of	No	No	Yes, based on ALCOSAN's pretreatment plan	No	



Financial Information

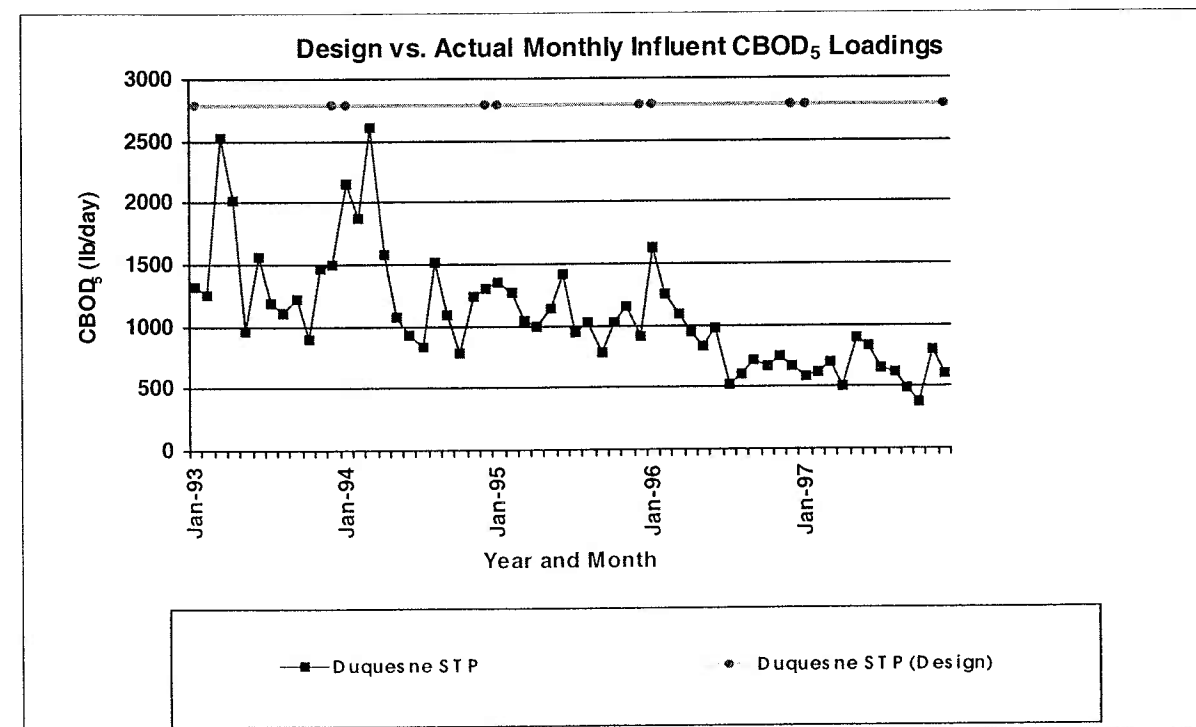
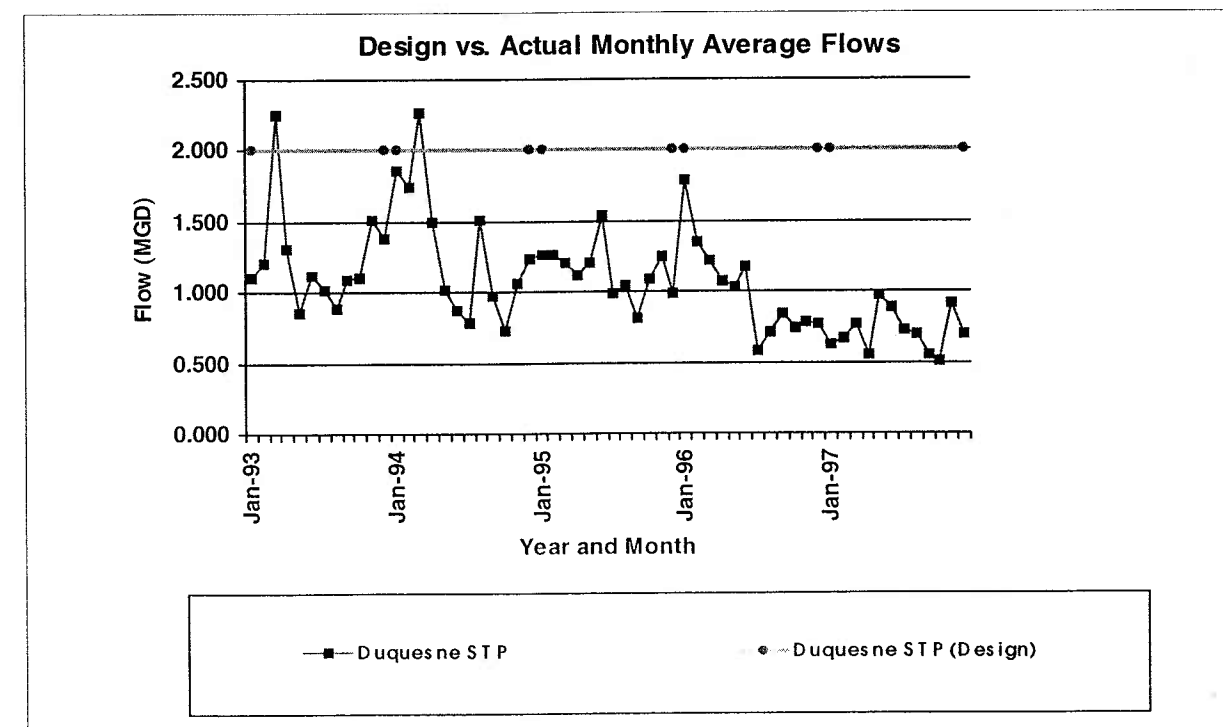
REVENUES		
User Charges:		\$360,327
Grants:		\$0
Other:		\$0
Total Revenues		\$360,327
EXPENSES		
Operations and Maintenance		\$336,003
Administration:		\$0
Debt Service:		\$0
Other:		\$0
Total Expenses		\$336,003
Surplus(Deficit):		\$24,324
<i>Debt Service Coverage Ratio</i>		
	YEAR:	1995
		Actual/ Budgeted
Information Source:		
Revenues	Local Government Financial Statistics (PaDCED)	Actual
Expenses	Local Government Financial Statistics (PaDCED)	Actual

City of Duquesne

1997 Plant Performance

Duquesne STP	Average Daily Flow (mgd)			CBOD ₅ (lb/Day)			Permit Limits			TSS (lb/Day) Effluent			Permit Limits			Effluent Coliform (Col./100ml)			Permit Limits		
	Monthly	Summer	Winter	Monthly Influent	Average Effluent	% Removal	Summer	Winter	Average	Summer	Winter	Average Daily	Summer	Winter	Average Daily	Summer	Winter				
January	0.63			581	87	85%			90			315									
February	0.67			616	103	83%			85			219									
March	0.77			695	128	82%			77			211									
April	0.55			511	90	82%			82			230									
May	0.97			897	104	88%			187			211	E								
June	0.89			836	133	84%			145			207	E								
July	0.73			657	126	81%			63			203	E								
August	0.10			612	83	86%			51			175									
September	0.56			497	87	83%			52			195									
October	0.50			381	71	81%			51			190									
November	0.91			801	114	86%			145			195									
December	0.70			607	119	80%			60			232									
Maximum	0.97	2.00	2.00		133.20		417	417	187	500	500	315	200	2000							
Max as % Limit	49%				32%				37%			157%									
Average	0.67				104				91			215									
3 Month > Limit?	No																				

Plant Loading Summary



City of Duquesne

Collection System Facilities

TREATMENT PLANT	Design Capacity (MGD)	Biological Treatment	Owner	Operator
Duquesne STP	2	Activated Sludge	DUQUC	DUQUC
<u>Pump Station</u>	<u>Peak Capacity</u>	<u>Avg Daily Flow</u>	<u>Owner</u>	<u>Operator</u>
None				
<u>Equalization Basin</u>	<u>Capacity</u>	<u>Location</u>	<u>Owner</u>	<u>Operator</u>
None				

Sewer Maintenance Information

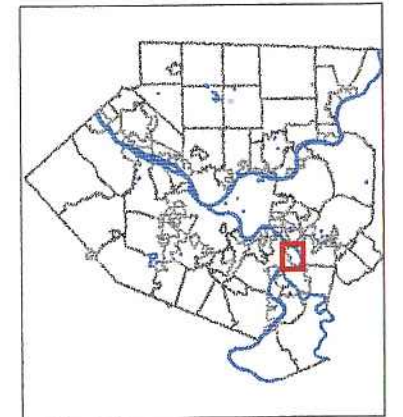
<i>Service Community</i>	<i>Maintained By:</i>	<i>Mainten. Done:</i>	<i>Equipment Source</i>	<i>I/I Removal</i>	<i>I/I Flow Monitor</i>
Duquesne, City of	City of Duquesne	As-needed	City, COG	<input type="checkbox"/>	<input type="checkbox"/>

City of Duquesne

Water Pollution Control Facility Service Area and Collection System

Allegheny County
Department of Economic Development

Allegheny County, PA

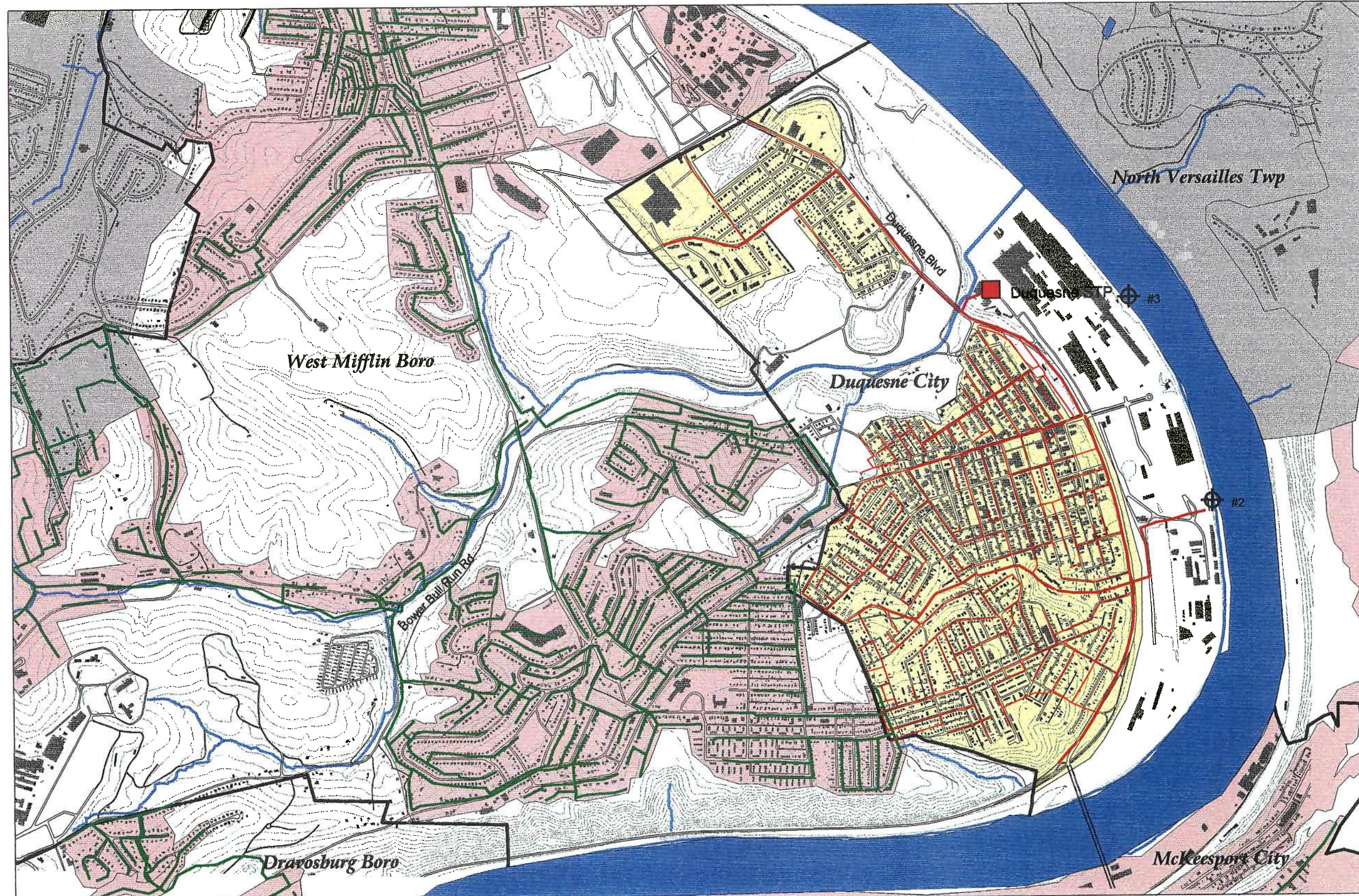


400 0 400 800 Feet

- Public Treatment Facility
- Existing STP
- Combined Sewer Outfall
- Municipal Boundary
- Major Road
- Contour
- Hydrologic Feature
- Building
- Collection System
- Combined
- Pipe Type
- Collector
- Force Main
- Trunk
- Neighboring Service Area
- ALCOSAN Service Area

Not Field Verified

Source: Duquesne Sewer System Map



Elizabeth Borough Municipal Authority

The Elizabeth Borough Municipal Authority (EBMA) is a treatment authority. A seven-member Board manages EBMA. The Elizabeth Borough Council appoints five Board members, and the Elizabeth Township Commissioners appoint two. EBMA serves approximately 1,820 customers from the Borough of Elizabeth and portions of Elizabeth Township, Forward Township, and Lincoln Borough. Leachate from the Kelly Run Landfill in Forward Township is also treated by EBMA. EBMA does not own or maintain any sewage collection facilities. The Authority is responsible for the interceptor along the Monongahela River, the Borough pumping station, and the wastewater treatment plant. The Elizabeth Borough Sewage Treatment Plant (STP) is a 1.2-mgd, activated sludge treatment facility, which discharges to the Monongahela River. Anaerobic sludge from the STP is disposed of at the McKeesport Water Pollution Control Plant.

The Elizabeth Borough STP was constructed in 1958 as a 0.6-mgd primary treatment plant. In 1968, the Sanitary Water Board of Pennsylvania ordered that the plant be upgraded to secondary treatment. The upgraded facilities were put into operation in 1972. The combined sewer system in Elizabeth Borough causes fluctuations in flow to the plant, during wet weather. Prior to 1993, the plant had been hydraulically overloaded for several years and the removal of suspended solids and fecal coliform was not adequate at high flows. In 1992 – 1993, the STP underwent a three-phase expansion to alleviate these treatment problems. New settling tanks, aeration tanks, sludge handling facilities, influent chamber, and comminutor, as well as a properly sized chlorine contact tank were added to the treatment plant process. With the completion of the plant expansion in 1993, overload conditions ceased. The STP was re-rated at a hydraulic capacity of 1.2 mgd in 1995. The permitted organic loading is 1,100 lb CBOD₅/day. The average monthly flow to the Elizabeth Borough STP was 0.918 mgd in 1997, and the reported average monthly organic loading was 338 lb CBOD₅/day in 1997.

EBMA maintains the 2,700 feet of interceptor located along the Monongahela River. Diversion chambers are installed on the Elizabeth Borough lines at six locations. At high river elevations, the interceptor is submerged and subject to inflow. A proposal to replace and relocate this interceptor at a higher elevation is being reviewed by the Army Corp of Engineers. The proposal will be a part of the project to eliminate the Lock and Dam #2 on the Monongahela River. The increase in river pool elevation will in turn increase the pool near the pump station. EBMA maintains the pump station and approximately 800 feet of force main, which convey raw sewage to the treatment plant from Elizabeth Borough, Forward Township, and portions of Elizabeth Township. This pump station is considered a part of the treatment plant and was upgraded during the 1992 – 1993 treatment plant expansion.

The respective municipality maintains the sewage collection system for each service area municipality. The municipalities rent the vactor truck from the Twin Rivers Council of Governments (TRCOG) to clean the sewer systems. Additionally, the Elizabeth Township Sanitary Authority (ETSA) has secured a high-pressure sewer cleaner on a lease purchase basis. ETSA also maintains the Wylie Pump Station, which conveys raw sewage from portions of Elizabeth Township and Lincoln Borough to the treatment plant. A detailed corrective action plan was prepared by EBMA in December 1984 for Elizabeth Borough and the contributing portions of Elizabeth Township and Forward Township. On-going and completed activities include sewer cleaning, internal sewer inspection, and manhole sealing.

EBMA service area population of approximately 5,129 is projected to increase to approximately 5,600 by 2015. Based on the 2015 population increase, the hydraulic and organic loadings to the treatment plant are expected to increase by nine percent. The hydraulic loading is projected to increase to approximately 1.0 mgd, and the organic loading is projected to increase to approximately 370 lb CBOD₅/day. The hydraulic and organic loading capacities of the plant appear to be adequate for projected average daily flow and loading conditions in 2015.

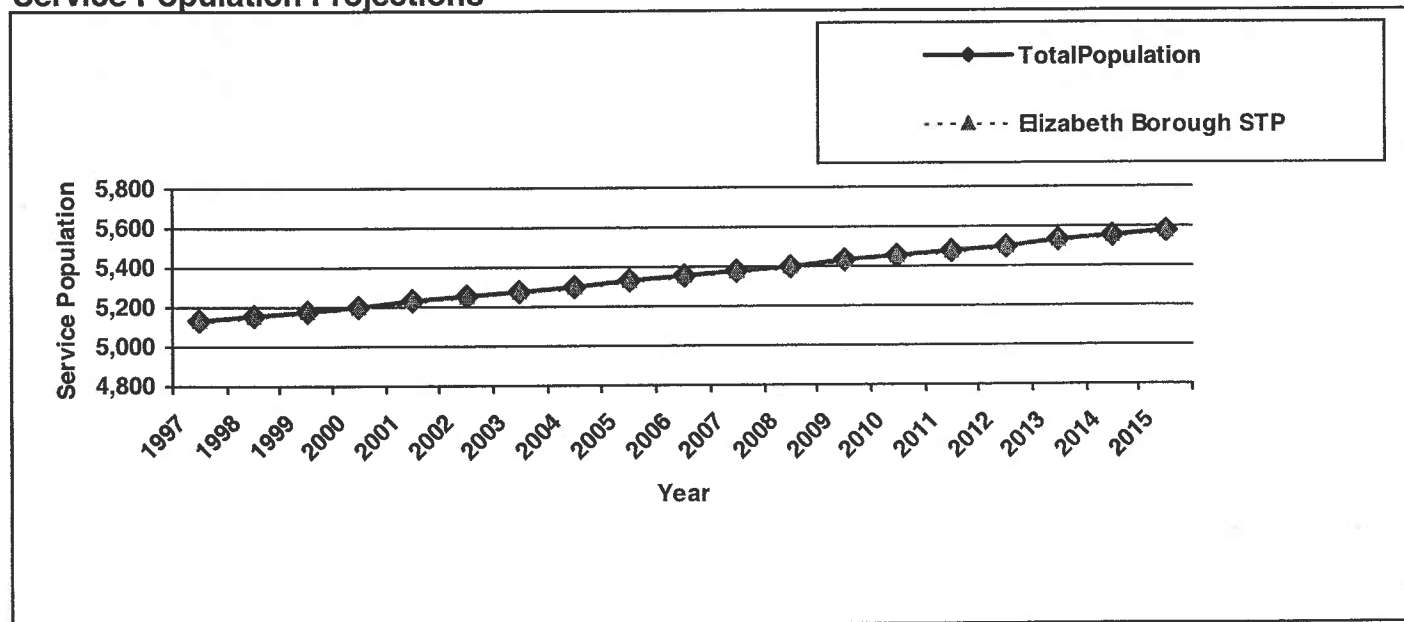
Service Area Summary

POTW Name	1997 Service Population	2015 Service Population	Municipality	Type Of Sewer System
Elizabeth Borough STP	5129	5580	Elizabeth Borough	Combined
			Elizabeth Township	Separate
			Forward Township	Separate
			Lincoln Borough	Separate

Treatment Process Summary

POTW Name	Equalization	Screening	Comminution	Grit Removal	Prechlorination	Primary Treatment	Activated Sludge	Extended Aeration	Contact Stabilization	Trickling Filter	Disinfection	Dechlorination	Filtration	Reaeration	Thickening	Aerobic Digestion	Anaerobic Digestion	Line Stabilization	Composting	Thermal Processing	Dewatering	Land Application	Landfill	Incineration	Haul to other STP	Odor Control
Elizabeth Borough STP	■	■	■			■			■						■				■	■		■				

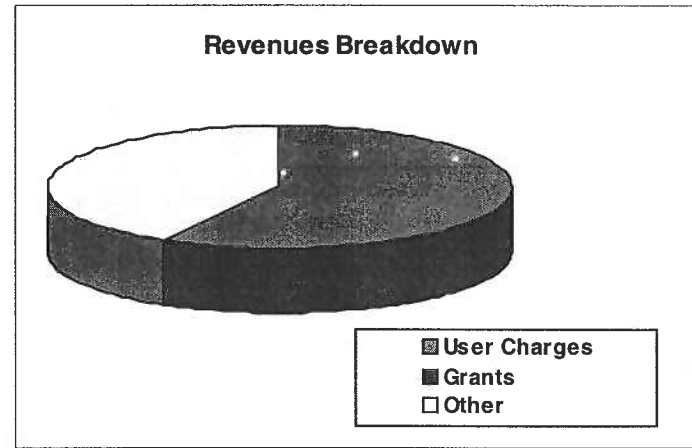
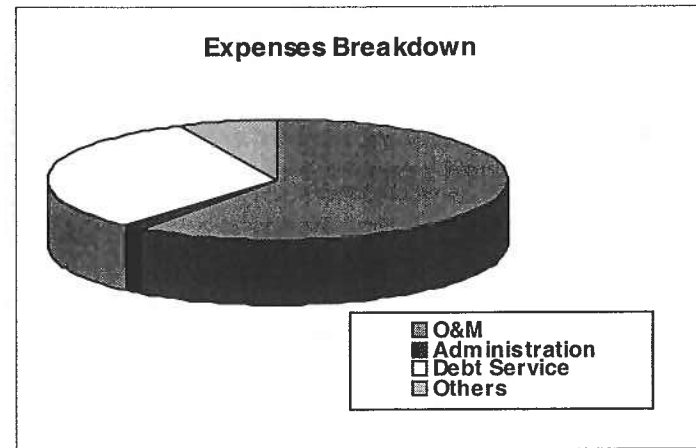
Service Population Projections



Elizabeth Borough Municipal Authority

Sewer Use Ordinances

Municipality	Corrective Action Plan	Grease Trap Requirement	Industrial Pretreatment Program	Illicit Connection Inspection At Sale	Surcharge
Elizabeth Borough	Yes	No	No	No	
Elizabeth Township	Yes, for Eliz. Boro. STP		Yes, McKeesport Auth. pretreatment program	No	
Forward Township	Yes	No	No	No	
Lincoln Borough	Yes for Eliz. Borough STP service area	No	No	No	No



Financial Information

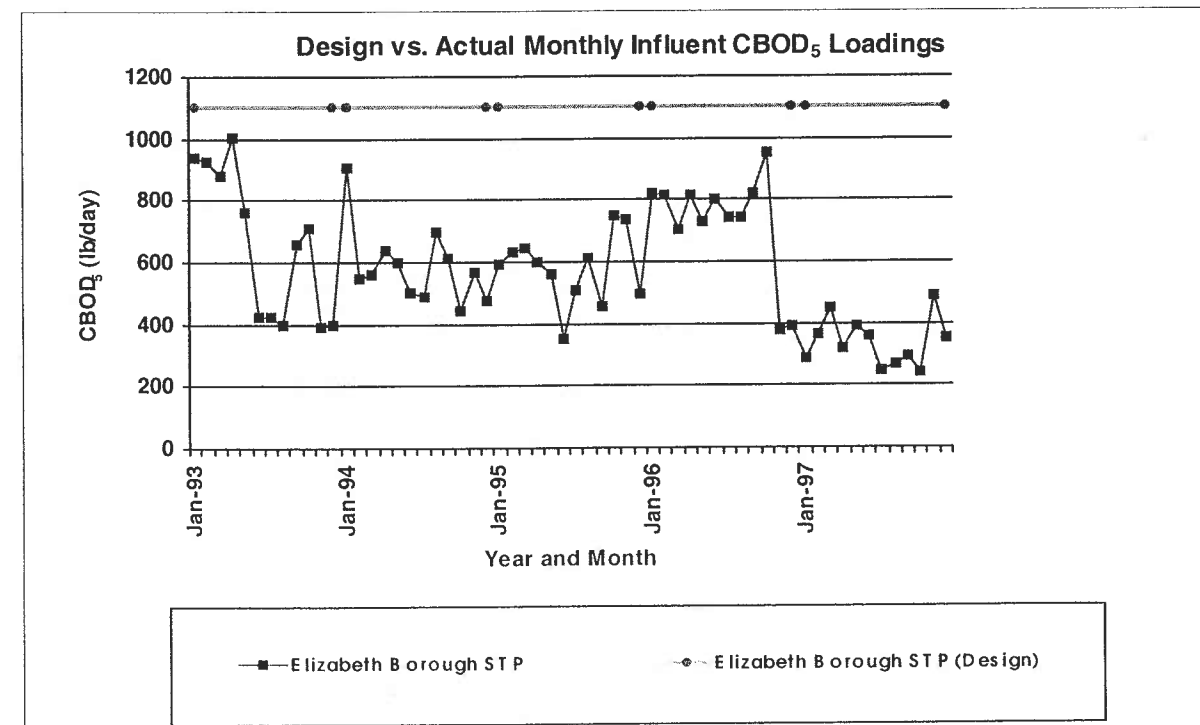
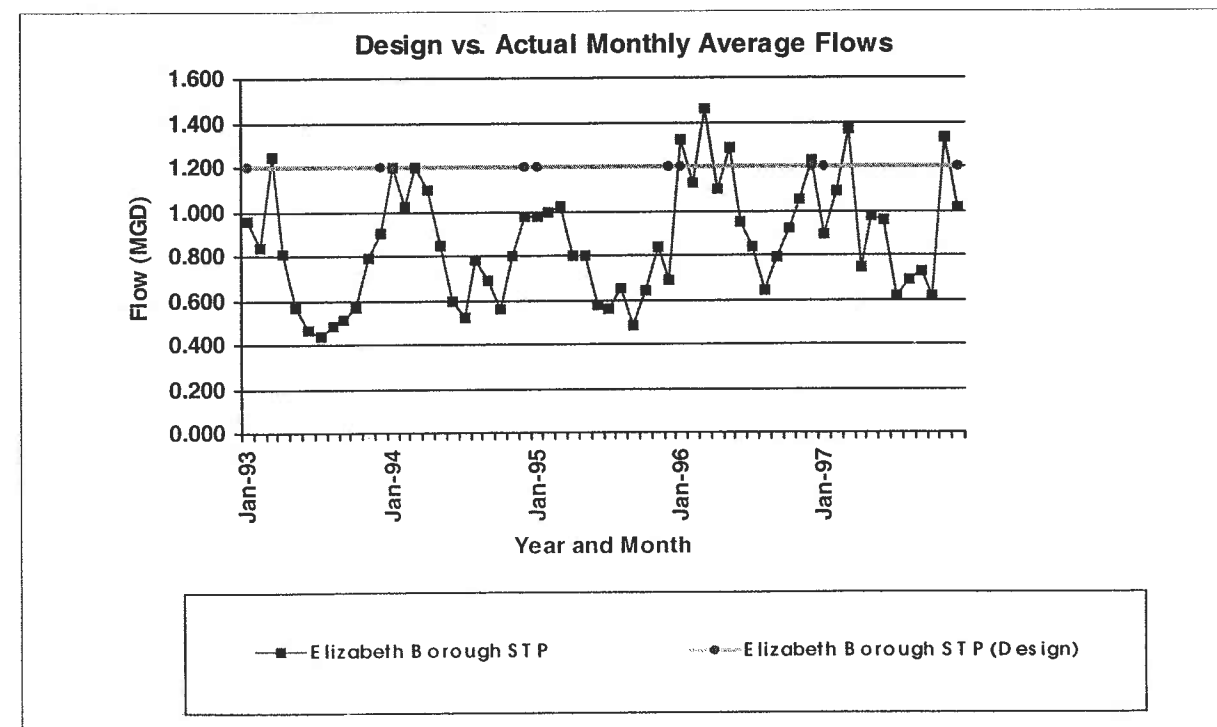
REVENUES		
User Charges:		\$390,224
Grants:		\$0
Other:		\$279,237
Total Revenues		\$669,461
EXPENSES		
Operations and Maintenance		\$368,940
Administration:		\$8,612
Debt Service:		\$194,100
Other:		\$43,056
Total Expenses		\$614,708
Surplus(Deficit):		\$54,753
Debt Service Coverage Ratio		1.28
YEAR:	1997	Actual/ Budgeted
Information Source:		
Revenues	Statistics For Municipal Authorities in PA	Actual
Expenses	Statistics For Municipal Authorities in PA	Actual

Elizabeth Borough Municipal Authority

1997 Plant Performance

Elizabeth Borough STP	Average Daily Flow (mgd)			CBOD ₅ (lb/Day)			Permit Limits			TSS (lb/Day) Effluent	Permit Limits			Effluent Coliform (Col./100ml)	Permit Limits		
	Monthly	Summer	Winter	Monthly Influent	Average Effluent	% Removal	Summer	Winter	Average		Summer	Winter	Average Daily		Summer	Winter	
January	0.89			290	107	63%			148			119					
February	1.09			365	164	55%			176			163					
March	1.37			450	211	53%			305	E		110					
April	0.74			321	101	69%			125			180					
May	0.98			392	102	74%			103			90					
June	0.96			357	131	63%			97			151					
July	0.61			247	84	66%			32			93					
August	0.69			266	96	64%			40			107					
September	0.73			295	88	70%			25			125					
October	0.62			240	80	67%			89			186					
November	1.33			488	131	73%			97			346					
December	1.01			350	133	62%			97			145					
Maximum	1.37	1.20	1.20		211		250	250	305	300	300	346	200	2000			
Max as % Limit	114%				84%				102%			173%					
Average	0.92				119				111			151					
3 Month > Limit?	No																

Plant Loading Summary



Elizabeth Borough Municipal Authority

Collection System Facilities

TREATMENT PLANT	Design Capacity (MGD)	Biological Treatment	Owner	Operator
Elizabeth Borough STP	1.2	Activated Sludge	EBMA	EBMA
<u>Pump Station</u>	<u>Peak Capacity</u>	<u>Avg Daily Flow</u>	<u>Owner</u>	<u>Operator</u>
Elizabeth Borough	1.94 mgd	0.584 mgd	EBMA	EBMA
Wylie	1.3 mgd	0.334 mgd	ETSA	ETSA
<u>Equalization Basin</u>	<u>Capacity</u>	<u>Location</u>	<u>Owner</u>	<u>Operator</u>
None				

Sewer Maintenance Information

<i>Service Community</i>	<i>Maintained By:</i>	<i>Mainten. Done:</i>	<i>Equipment Source</i>	<i>I/I Removal</i>	<i>I/I Flow Monitor</i>
Elizabeth Borough	EBMA	As-needed	COG	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Elizabeth Township	ETSA, Contractor	As-needed	Authority, COG	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Forward Township	Forward Township	No Data	No Data	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Lincoln Borough	Lincoln Borough	As-needed	COG	<input type="checkbox"/>	<input type="checkbox"/>

Elizabeth Borough Municipal Authority

Intermunicipal Agreements

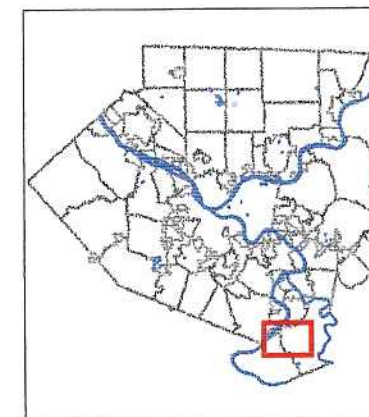
Agreement With	Date Enacted	Agreement Description	Expiration Date	Flow Limits (mgd)	Rate and Surcharge Provisions	Sampling Provisions	Flow Monitoring Provisions	Dispute Resol. Procedure	Basis of Cost Allocation
Borough of Lincoln	Agreement not available	Sewage treatment service at the Elizabeth Borough STP		None					
Elizabeth Township	Agreement not available	Agreement with Elizabeth Township Sanitary Authority to treat sewage generated in Elizabeth Township at the Elizabeth Borough STP		None					
Forward Township	Agreement not available	Agreement with Forward Township to accept sewage for treatment at the Elizabeth Borough STP		None					

Elizabeth Borough Municipal Authority

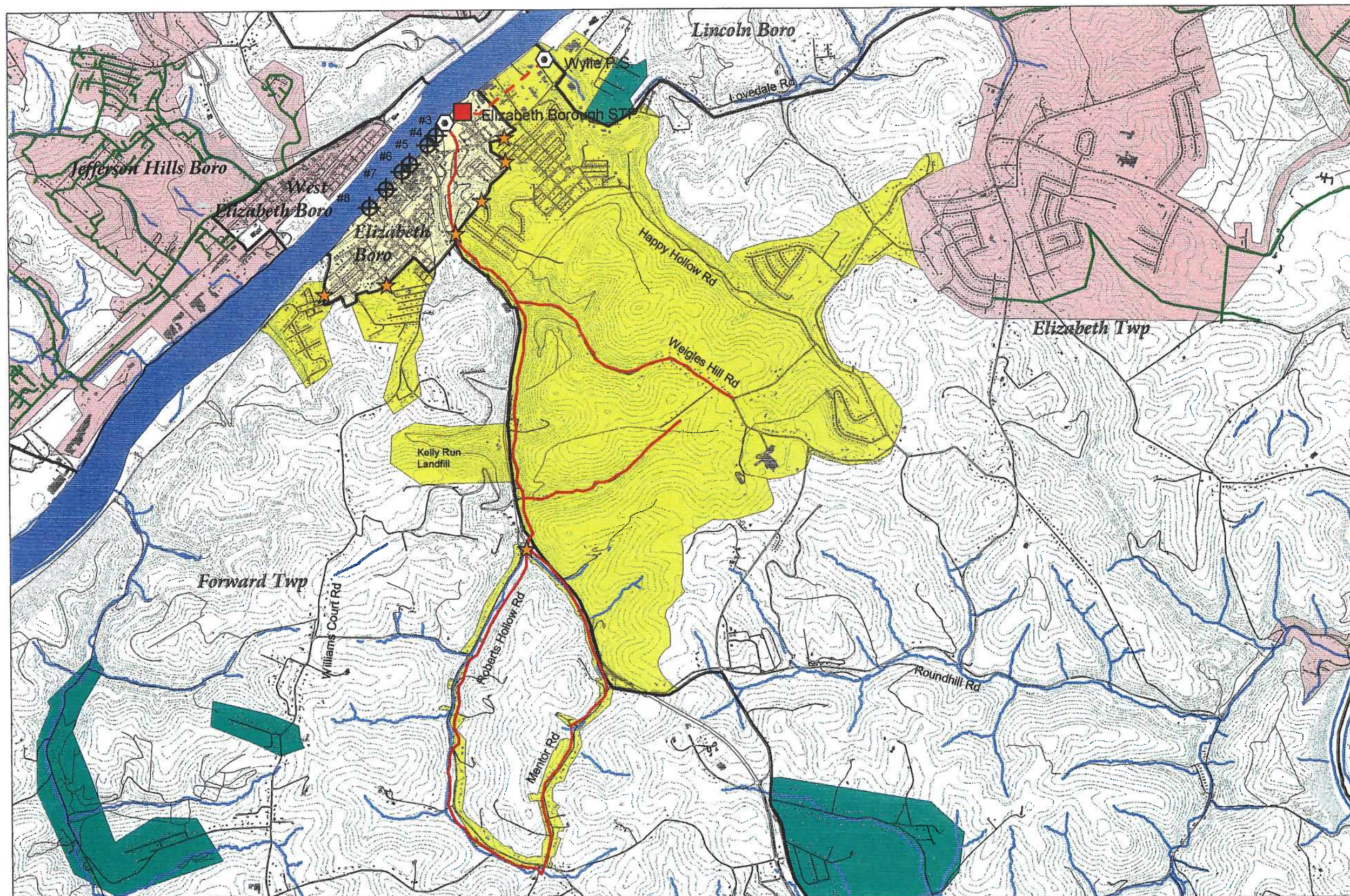
Water Pollution Control Facility Service Area and Collection System

Allegheny County
Department of Economic Development

Allegheny County, PA



700 0 700 1400 Feet



- Public Treatment Facility**
- Existing
- Pump Station
- Combined Sewer Outfall
- Municipal Boundary
- Major Road
- Contour
- Hydrologic Feature
- Building
- Collection System**
- Combined
- Separate
- On - Lot Problem Area
- Pipe Type**
- Collector
- Force Main
- Trunk
- Neighboring Service Area
- Neighboring Collection System

Not Field Verified
Source: Elizabeth Boro. Sewer Map
Senate Engineering Service Area Maps
W.E.C. Engineers, Inc.

Elizabeth Township Sanitary Authority

The Elizabeth Township Sanitary Authority (ETSA) is a treatment and collection authority serving approximately 2,222 customers in a portion of Elizabeth Township. ETSA owns and operates the Buena Vista Sewage Treatment Plant (STP). The plant is a 1.4-mgd standard activated sludge plant, which discharges into the Youghiogheny River. Customers from Elizabeth Township are also served by the Elizabeth Borough STP and the McKeesport WPCP.

The plant experienced hydraulic overloading for 2-3 years but continued to achieve effluent limitations stipulated in the NPDES permit. However, the plant was recently re-rated from 1.0 mgd to 1.4 mgd, and therefore, the plant is no longer considered to be hydraulically overloaded. It is permitted for a corresponding organic load of 2,000 lb CBOD₅/day. The treatment plant process consists of an aerated degritter, aeration tanks where flow is mixed with sludge, clarifiers, and a chlorine contact tank. Thickened sludge is disposed of at the McKeesport WPCP. The average monthly flow to the Buena Vista STP in 1997 was 0.91 mgd. The average monthly organic loading was 504 lb CBOD₅/day.

ETSA owns, operates, and maintains the sanitary sewer collection system within Elizabeth Township. This includes sewers tributary to the Elizabeth Borough STP and the McKeesport WPCP. The Authority has established a voluntary Corrective Action Plan to locate and repair structural failures and to eliminate infiltration/inflow sources. The treatment plant personnel have completed extensive smoke testing, dye testing, and manhole inspections. The sanitary sewers are routinely inspected and cleaned by utilizing the Twin Rivers Council of Governments sewer vactor and televising equipment and the Authority's flushing equipment. The Authority purchased a mobile high pressure sewer cleaner and will be able to establish a cleaning program to service all sewer lines over a five to eight year period.

The Buena Vista service area is currently growing. An interceptor extension to the Blythdale area of the Township is under construction. ETSA also has plans to extend sewage treatment service along Douglas and Gillespie runs to the Arrowhead Lakes area. Arrowhead Lakes has been identified as an area with 60 percent malfunctioning, on-lot septic systems.

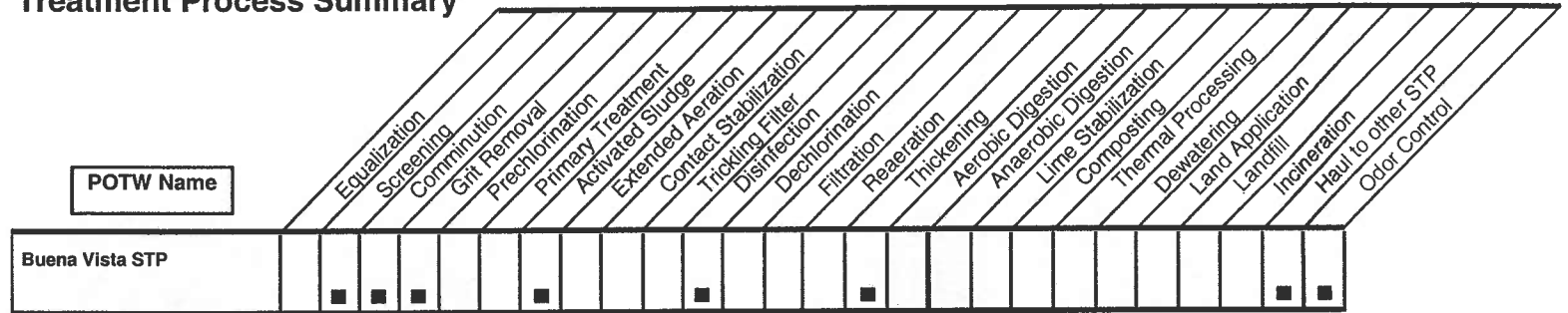
There are six pump stations in Elizabeth Township. Four pump stations are tributary to the Buena Vista STP. The pump stations are identified as Duncan Station, Simpson Howell, Boyd's Hollow, and Lovedale. ETSA also maintains one pump station tributary to the McKeesport WPCP and one pump station tributary to the Elizabeth Borough STP. All of the pump stations are in excellent condition and are operating within the design flow range. All pump stations have permitted outfalls to discharge in the event of pump station or equipment failure.

The Elizabeth Township service area population of approximately 6,600 is projected to increase to approximately 7,200 by 2015. Based on the 2015 population increase, the hydraulic and organic loadings to the treatment plant are expected to increase by 10 percent. The average daily hydraulic loading is projected to increase to approximately 1.0 mgd, and the organic loading is projected to increase to approximately 560 lb CBOD₅/day. The hydraulic and organic loading capacities of the plant appear to be adequate for projected average daily flow and loading conditions in 2015.

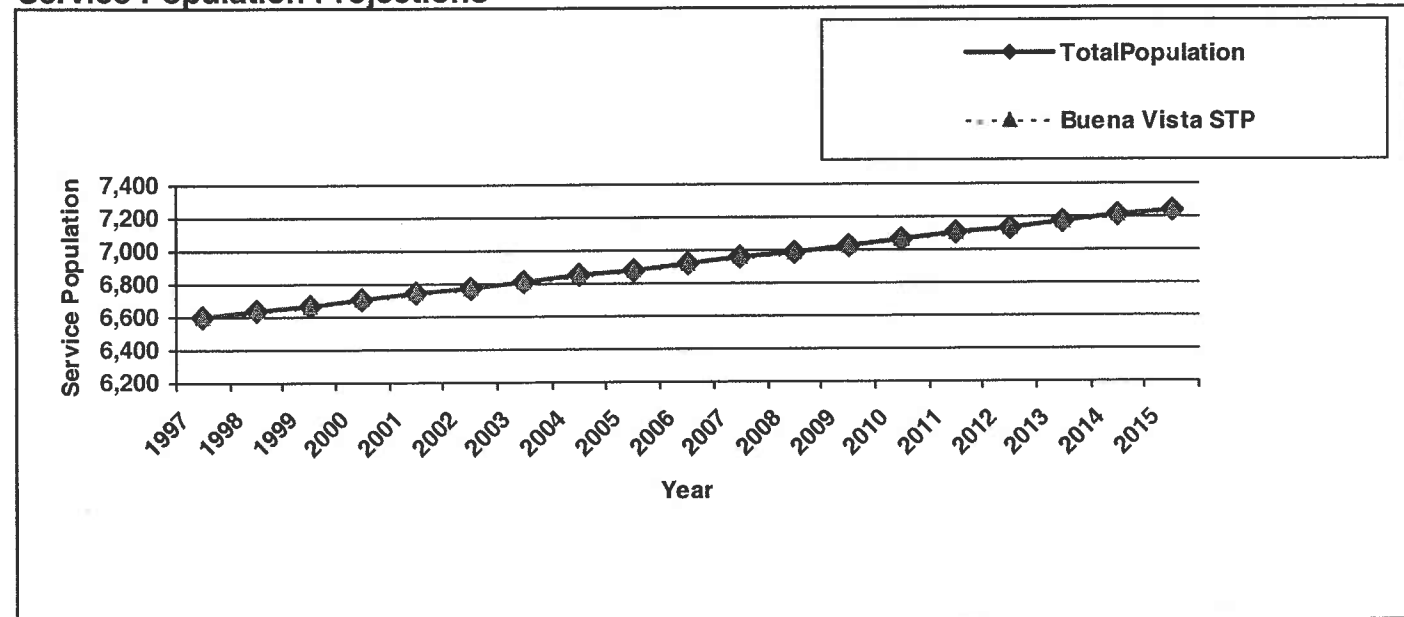
Service Area Summary

POTW Name	1997 Service Population	2015 Service Population	Municipality	Type Of Sewer System
Buena Vista STP	6600	7245	Elizabeth Township	Separate

Treatment Process Summary



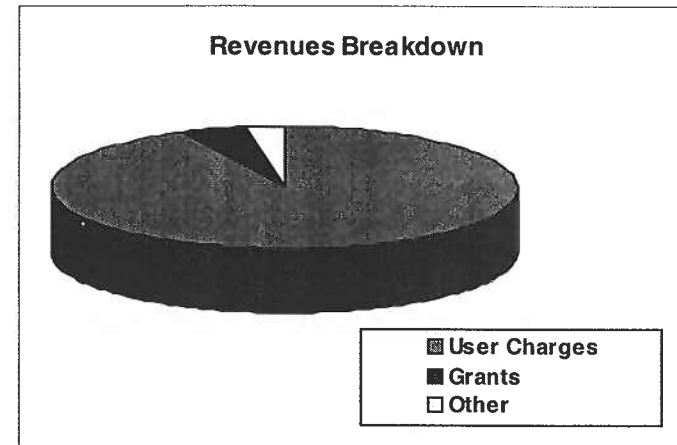
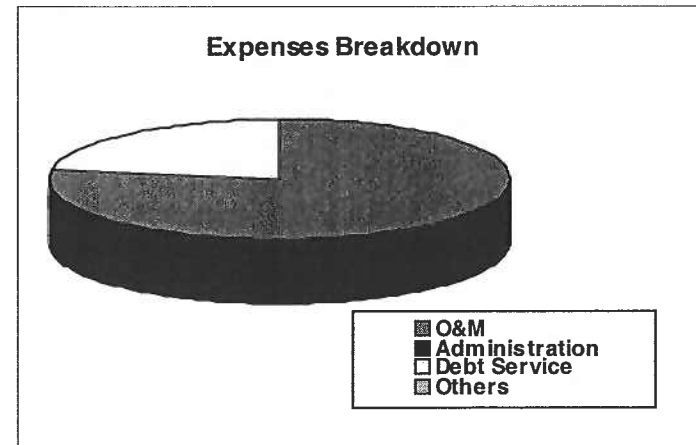
Service Population Projections



Elizabeth Township Sanitary Authority

Sewer Use Ordinances

Municipality	Corrective Action Plan	Grease Trap Requirement	Industrial Pretreatment Program	Illicit Connection Inspection At Sale	Surcharge
Elizabeth Township	Yes, for Eliz. Boro. STP		Yes, McKeesport Auth. pretreatment program	No	



Financial Information

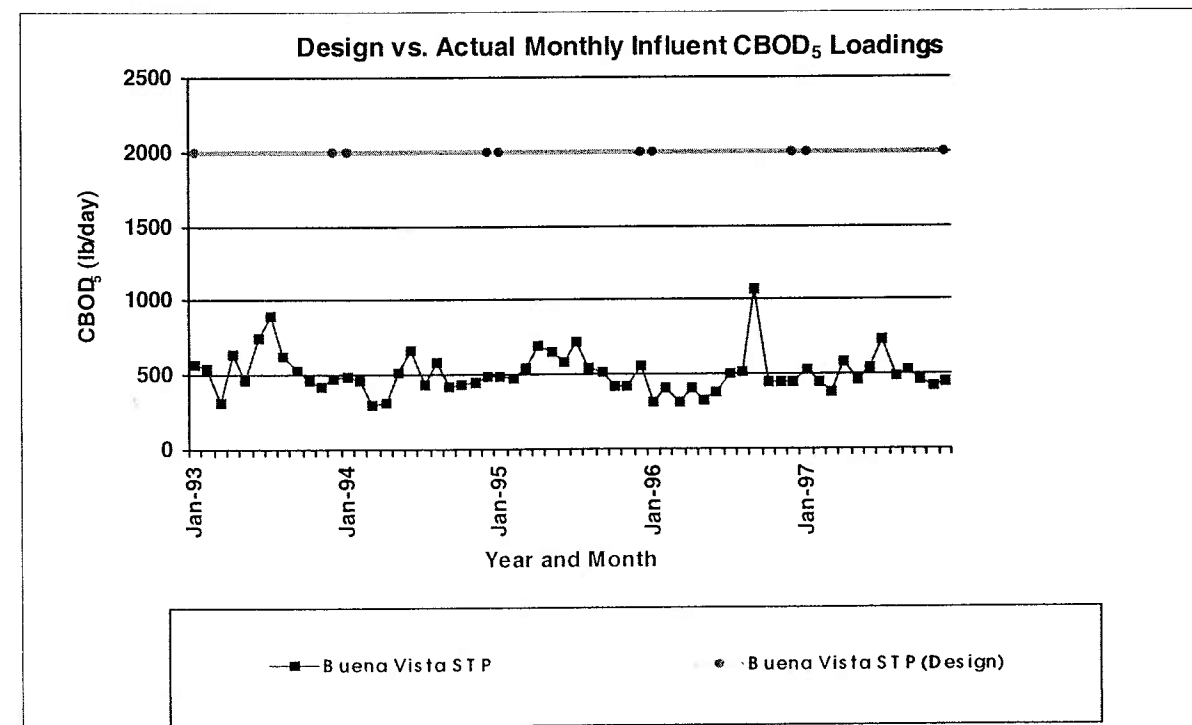
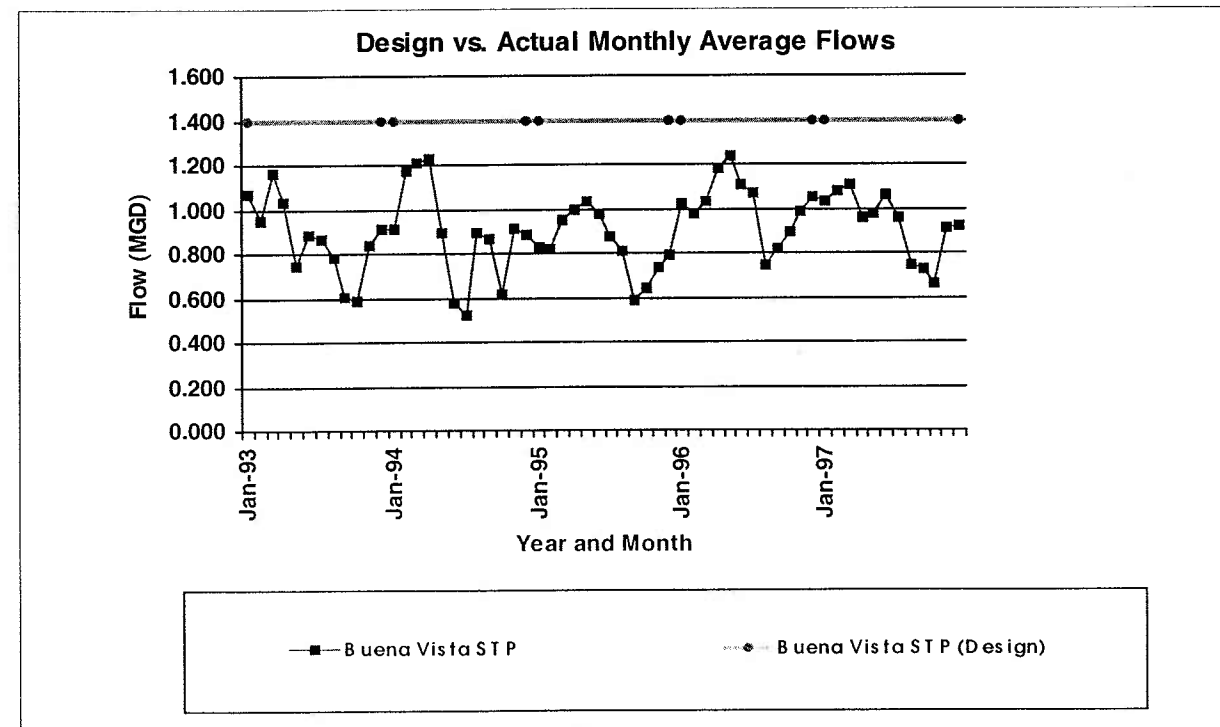
REVENUES		
User Charges:		\$1,399,752
Grants:		\$67,552
Other:		\$41,235
Total Revenues		\$1,508,539
EXPENSES		
Operations and Maintenance		\$1,188,740
Administration:		\$1,500
Debt Service:		\$343,000
Other:		\$0
Total Expenses		\$1,533,240
Surplus(Deficit):		(\$24,701)
Debt Service Coverage Ratio		0.93
Information Source:	YEAR: 1997	Actual/Budgeted
Revenues	Engineers Report for '97 Operations (Senate Eng.)	Budgeted
Expenses	Engineers Report for '97 Operations (Senate Eng.)	Budgeted

Elizabeth Township Sanitary Authority

1997 Plant Performance

Buena Vista STP	Average Daily Flow (mgd)			CBOD ₅ (lb/Day)			TSS (lb/Day) Effluent			Effluent Coliform (Col./100ml)		
	Monthly	Summer	Winter	Average Effluent	Summer	Winter	Average	Summer	Winter	Average Daily	Summer	Winter
January	1.03			98			256			268		
February	1.08			63			186			168		
March	1.11			72			121			163		
April	0.96			78			212			290		
May	0.98			101			114			169		
June	1.06			73			67			115		
July	0.76			39			47			106		
August	0.75			51			30			134		
September	0.72			38			33			91		
October	0.66			26			101			96		
November	0.91			37			56			81		
December	0.92			49			144			106		
Maximum	1.11	1.40	1.40	101.00	292	292	256	350	350	290	200	2000
Max as % Limit	79%			35%			73%			15%		
Average	0.91			60			114			149		
3 Month > Limit?	No											

Plant Loading Summary



Elizabeth Township Sanitary Authority

Collection System Facilities

TREATMENT PLANT	Design Capacity (MGD)	Biological Treatment	Owner	Operator
Buena Vista STP	1.4	Activated Sludge	ETSA	ETSA
<u>Pump Station</u>	<u>Peak Capacity</u>	<u>Avg Daily Flow</u>	<u>Owner</u>	<u>Operator</u>
Boyd's Hollow	2.261 mgd	0.301 mgd	ETSA	ETSA
Duncan Station	0.662 mgd	0.103 mgd	ETSA	ETSA
Lovedale	0.598 mgd	0.081 mgd	ETSA	ETSA
Simpson Howell	0.957 mgd	0.118 mgd	ETSA	ETSA
<u>Equalization Basin</u>	<u>Capacity</u>	<u>Location</u>	<u>Owner</u>	<u>Operator</u>
None				

Sewer Maintenance Information

<i>Service Community</i>	<i>Maintained By:</i>	<i>Mainten. Done:</i>	<i>Equipment Source</i>	<i>I/I Removal</i>	<i>I/I Flow Monitor</i>
Elizabeth Township	ETSA, Contractor	As-needed	Authority, COG	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Elizabeth Township Sanitary Authority

Intermunicipal Agreements

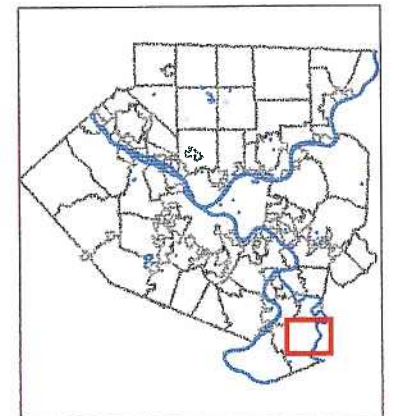
Agreement With	Date Enacted	Agreement Description	Expiration Date	Flow Limits (mgd)	Rate and Surcharge Provisions	Sampling Provisions	Flow Monitoring Provisions	Dispute Resol. Procedure	Basis of Cost Allocation
Borough of Lincoln	Agreement not available	Conveyance of sewage to the Elizabeth Borough STP by ETSA collection system							
Elizabeth Borough	Agreement not available	Agreement with Elizabeth Borough Municipal Authority for sewage treatment at the Elizabeth Borough STP		None					
Forward Township	10/20/97	Agreement for ETSA to service the commercial, residential, and industrial customers of Forward Township	10/20/27 (30-year agreement)	260 gallons per day per each EDU		None	None	None	Forward shall pay Elizabeth/ETSA the sum of \$1.25 per EDU per month for the first 10 years of operation and \$2.50 per month per EDU in the 11th through 30th year
Forward Township	10/20/97	Agreement for ETSA to service the commercial, residential, and industrial customers of Forward Township	10/20/27 (30-year agreement)	260 gallons per day per each EDU		None	None	None	Forward shall pay Elizabeth/ETSA the sum of \$1.25 per EDU per month for the first 10 years of operation and \$2.50 per month per EDU in the 11th through 30th year

Sanitary Authority of Elizabeth Township

Water Pollution Control Facility Service Area and Collection System

Allegheny County
Department of Economic Development

Allegheny County, PA

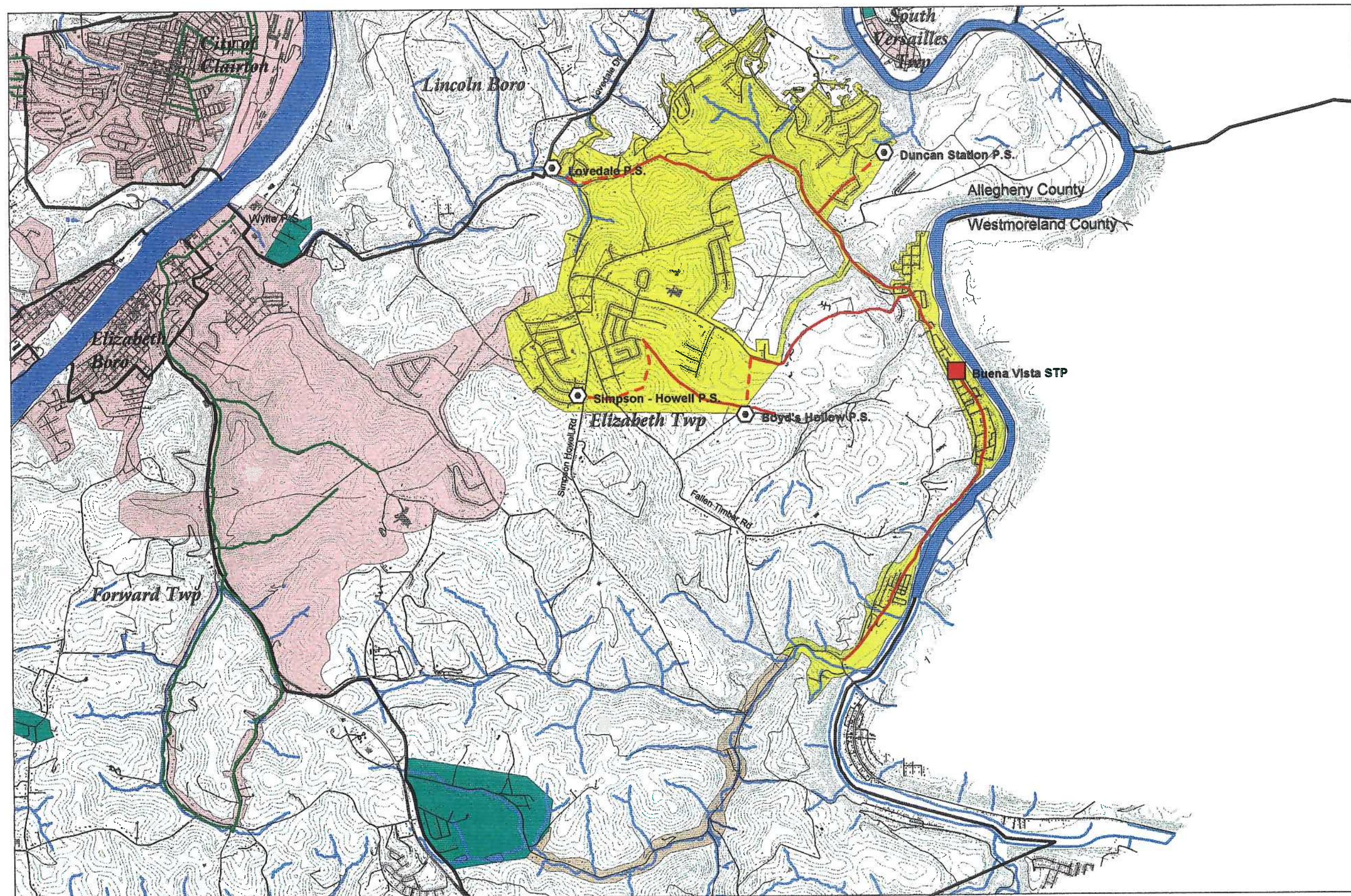


900 0 900 1800 Feet

- Public Treatment Facility
 - Existing
- Pump Station
- Municipal Boundary
- Major Road
- Contour
- Hydrologic Feature
- Building
- Collection System
 - Separate
 - Future
- On - Lot Problem Area
- Pipe Type
 - Collector
 - Force Main
 - Trunk
- Neighboring Service Area
- Neighboring Collection System

Not Field Verified

Source: Elizabeth Boro. Service Area Map, Senate Engineering
Current Sewer Service Area,
(537 sewage facilities update) Senate Engineering



Township of Findlay

The Township of Findlay is divided into several drainage basins – Montour Run, Flaugherty Run, Potato Garden Run and Raredon Run. Moon Township Municipal Authority's (MTMA) Montour Run Plant serves 1,215 residential customers and 117 commercial customers from the Montour Run drainage basin in Findlay Township. The Pittsburgh Airport Industrial Park is connected to the Flaugherty Run STP via a small, private pump station. The Clinton Mobile Home Park STP (Clinton STP) is the only township owned and operated facility in Findlay and it provides service to a limited geographic area in Clinton. In addition, a significant portion of the Findlay population relies on on-lot septic systems for their wastewater disposal needs. (For more information on the Montour Run and Flaugherty Run plants, see the Moon Township Municipal Authority Report.)

The Clinton STP serves 38 mobile homes, the Township Municipal Building, the Clinton Park restroom facility and the Emergency Medical Services Building. It is estimated that the plant serves only two percent of total Findlay population. The Clinton STP is a 0.01-mgd, 16.7 lb CBOD₅/day extended aeration package sewage treatment plant that discharges to an unnamed tributary of Potato Garden Run. The average monthly flow at the Clinton STP in 1997 was 0.0049 mgd and the average monthly organic loading in 1997 was 3.7 lb CBOD₅/day. The Clinton STP was constructed and placed into operation in 1974. Findlay employs a part-time sewage treatment plant operator to monitor and maintain the Clinton STP.

At the time of their last NPDES permit renewal, Findlay acknowledged that the Clinton STP could not meet its effluent limitations and developed a compliance schedule for the DEP. The schedule calls for the construction of a new treatment facility in the Potato Garden Run watershed in accordance with the approved Findlay Act 537 study. Findlay is presently constructing an extended aeration treatment plant and a new interceptor along Potato Garden Run to replace the Clinton STP in conjunction with a private developer. The plant will provide treatment for the existing Clinton STP service area and a proposed 479-unit residential development. It will be built in phases to accommodate growth as follows - Phase I will provide capacity for 0.15 mgd, Phase II will expand the plant's capacity to 0.3 mgd capacity, and final build-out will expand the plant to 1.0 mgd.

Findlay owns and maintains the majority of the collector and interceptor sewers in the Township with the exception of the county-owned lines which serve the Pittsburgh International Airport and the Montour Run interceptor which transports wastewater collected from North Fayette and Findlay Township to MTMA's Montour Run plant. Although financed in part by Findlay, this line is owned and maintained by North Fayette Township.

The Township owns and maintains approximately 3,500 linear feet (lf) of 8-inch PVC separate sanitary sewer lines tributary to the Clinton STP, and recently expanded service along Route 30 and Clinton Park Road to serve 19 new properties. Approximately 4,000 lf of sanitary sewer line, associated manholes, and service laterals were installed to serve this area. Flows generated by this sewer extension are projected to be 0.006 mgd when in full operation. In general, the Clinton STP and contributing sewer system are in good condition and of sufficient capacity to accommodate current conditions.

The majority of the Findlay sewers tributary to the Montour Run treatment plant were constructed in 1978 and are in satisfactory condition. However, the older lines in this area are a potential source of infiltration and inflow (I/I). The township has televised about 50% of these lines to identify and correct problems. Township personnel perform normal operations and maintenance procedures throughout the Findlay Township sewage collection system on an as-needed basis. Presently, the township has several pieces of equipment (e.g., vehicles, pumps, inspection equipment, confined space entry equipment, etc.) that are used for maintenance and repair of the collection system.

The Potato Garden Run STP is being constructed to provide service for current customers to the Clinton STP, and to meet the needs of the projected future development in the Potato Garden Run watershed. The MTMA's Montour Run and Flaugherty Run plants have adequate capacity to meet the future needs of the area tributary to each facility from Findlay Township.

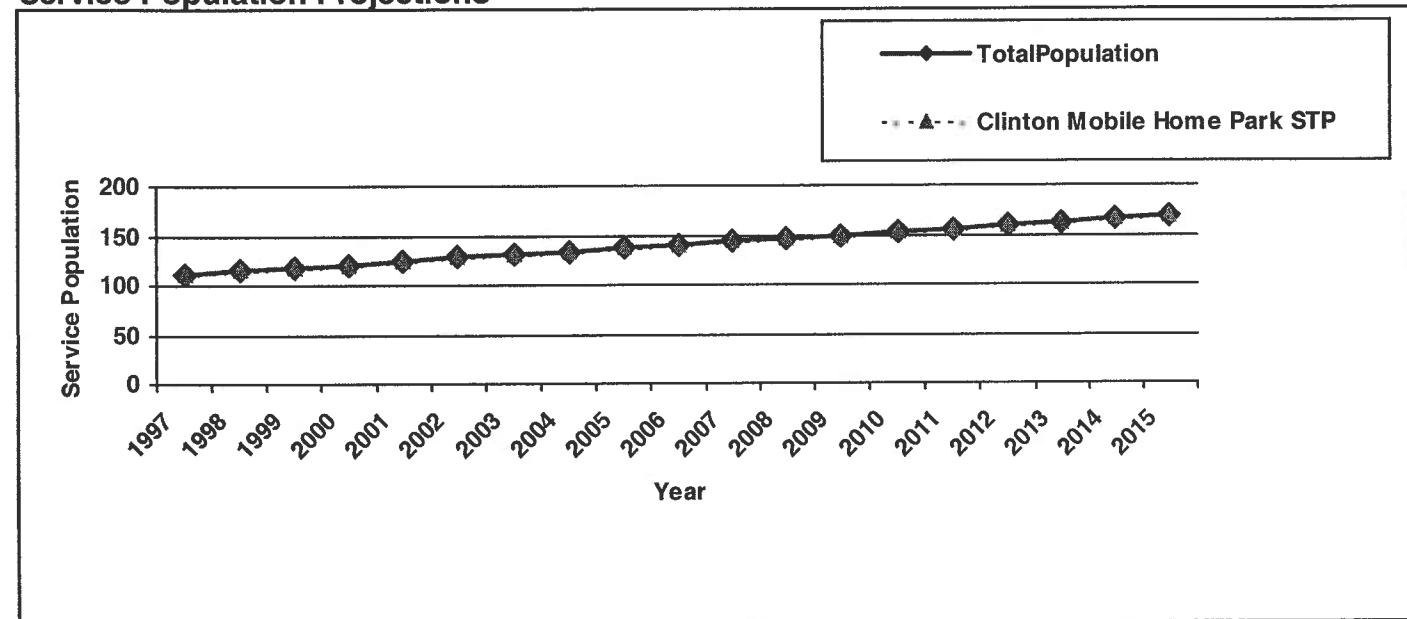
Service Area Summary

POTW Name	1997 Service Population	2015 Service Population	Municipality	Type Of Sewer System
Clinton Mobile Home Park STP	112	169	Findlay Township	Separate

Treatment Process Summary

POTW Name	Equalization	Screening	Comminution	Grit Removal	Prechlorination	Primary Treatment	Activated Sludge	Extended Aeration	Contact Stabilization	Trickling Filter	Disinfection	Dechlorination	Filtration	Regeneration	Thickening	Aerobic Digestion	Anaerobic Digestion	Line Stabilization	Composting	Thermal Processing	Dewatering	Land Application	Landfill	Incineration	Haul to other STP	Odor Control
Clinton Mobile Home Park STP						■			■		■															■

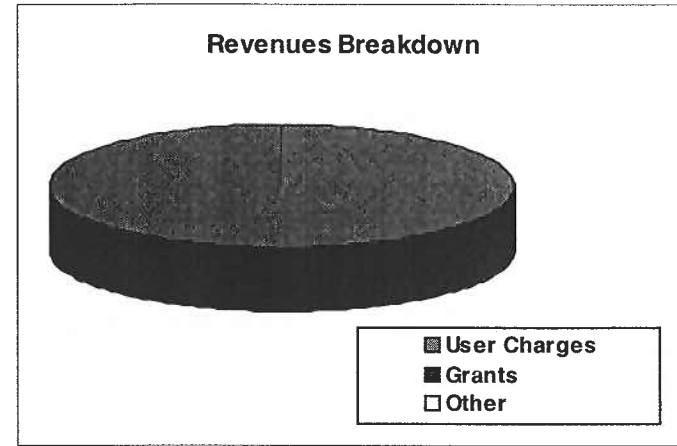
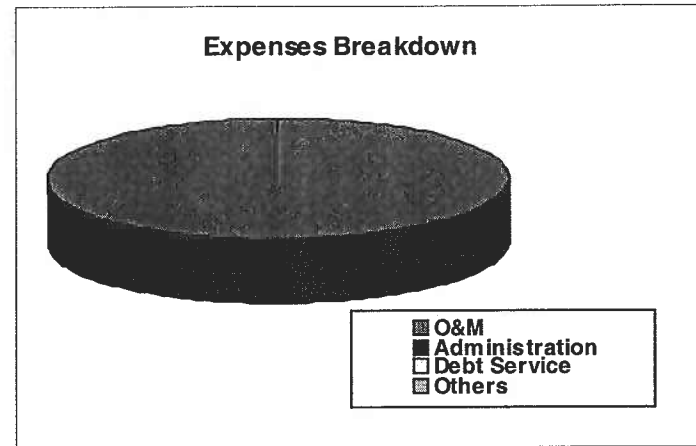
Service Population Projections



Township of Findlay

Sewer Use Ordinances

Municipality	Corrective Action Plan	Grease Trap Requirement	Industrial Pretreatment Program	Illicit Connection Inspection At Sale	Surcharge
Findlay Township	No	Yes	Yes, MTMA's pretreatment plan	Yes	Yes



Financial Information

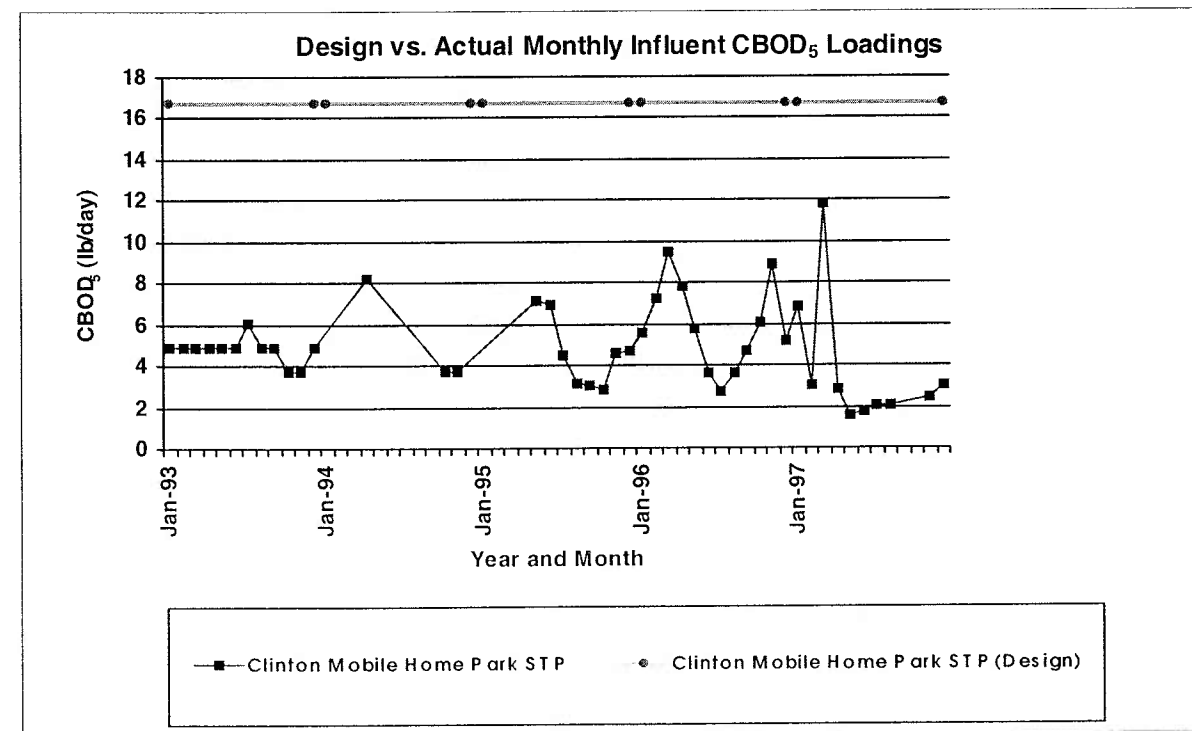
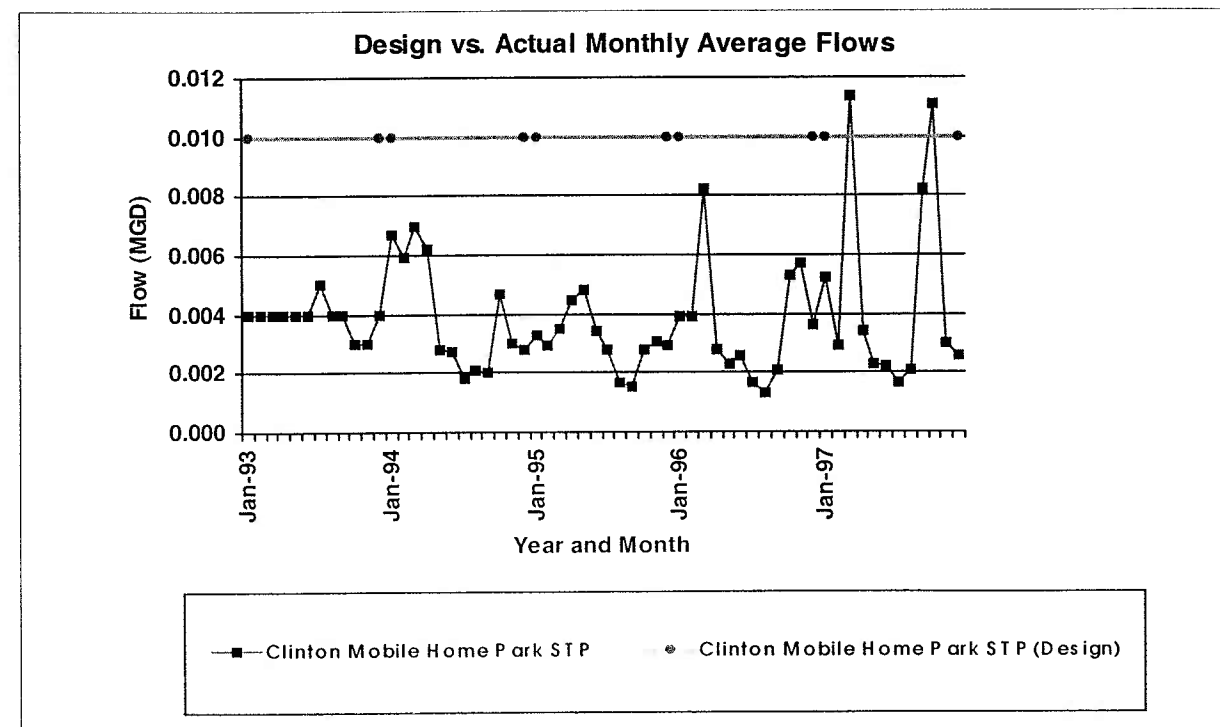
REVENUES		
User Charges:		\$562,738
Grants:		\$0
Other:		\$0
Total Revenues		\$562,738
EXPENSES		
Operations and Maintenance		\$398,506
Administration:		\$0
Debt Service:		\$0
Other:		\$0
Total Expenses		\$398,506
Surplus(Deficit):		\$164,232
Debt Service Coverage Ratio		
Information Source:	YEAR: 1995	Actual/Budgeted
Revenues	Local Government Financial Statistics (PaDCED)	Actual
Expenses	Local Government Financial Statistics (PaDCED)	Actual

Township of Findlay

1997 Plant Performance

Clinton Mobile Home Park STP	Average Daily Flow (mgd)			CBOD ₅ (lb/Day)			Permit Limits			TSS (lb/Day) Effluent			Permit Limits			Effluent Ammonia Nitrogen (mg/l)			Permit Limits			Effluent Coliform (Col./100ml)			Permit Limits		
	Monthly	Summer	Winter	Monthly Influent	Average Effluent	% Removal	Summer	Winter	Average	Summer	Winter	Average	Summer	Winter	Average	Summer	Winter	Average Daily	Summer	Winter	Average Daily	Summer	Winter				
January	0.0050			6.8	0.3	96%			0.3			nd						16									
February	0.0030			3.0	0.2	95%			0.1			nd						10									
March	0.0110			11.8	0.4	96%			0.7			nd						2									
April	0.0030			2.8	0.2	95%			0.2			nd						29									
May	0.0020			1.6	0.1	97%			0.1			nd						22									
June	0.0020			1.8	0.1	92%			0.2			nd						2									
July	0.0020			2.1	0.1	96%			0.1			nd						23									
August	0.0020			2.1	0.1	95%			0.1			nd						8									
September	0.0080			nd	0.6	nd			0.8			nd						63									
October	0.0110			nd	0.6	nd			0.7			nd						2									
November	0.0070			2.4	0.2	92%			0.4			nd						2									
December	0.0030			3.0	0.2	95%			0.2			nd						44									
Maximum	0.011	0.01	0.01		0.6		2.0	2.0	0.8	2.5	2.5	nd	2.0	3.0	63	200	2000										
Max as % Limit	110%				30%				31%			nd			32%												
Average	0.0049				0.2				0.3			nd			19												
3 Month > Limit?	No																										

Plant Loading Summary



Township of Findlay

Collection System Facilities

TREATMENT PLANT	Design Capacity (MGD)	Biological Treatment	Owner	Operator
Clinton Mobile Home Park STP	0.01	Extended Aeration	FIND	FIND
Pump Station	Peak Capacity	Avg Daily Flow	Owner	Operator
None				
Equalization Basin	Capacity	Location	Owner	Operator
None				

Sewer Maintenance Information

<i>Service Community</i>	<i>Maintained By:</i>	<i>Mainten. Done:</i>	<i>Equipment Source</i>	<i>I/I Removal</i>	<i>I/I Flow Monitor</i>
Findlay Township	Findlay Township	As-needed	COG	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Township of Findlay

Intermunicipal Agreements

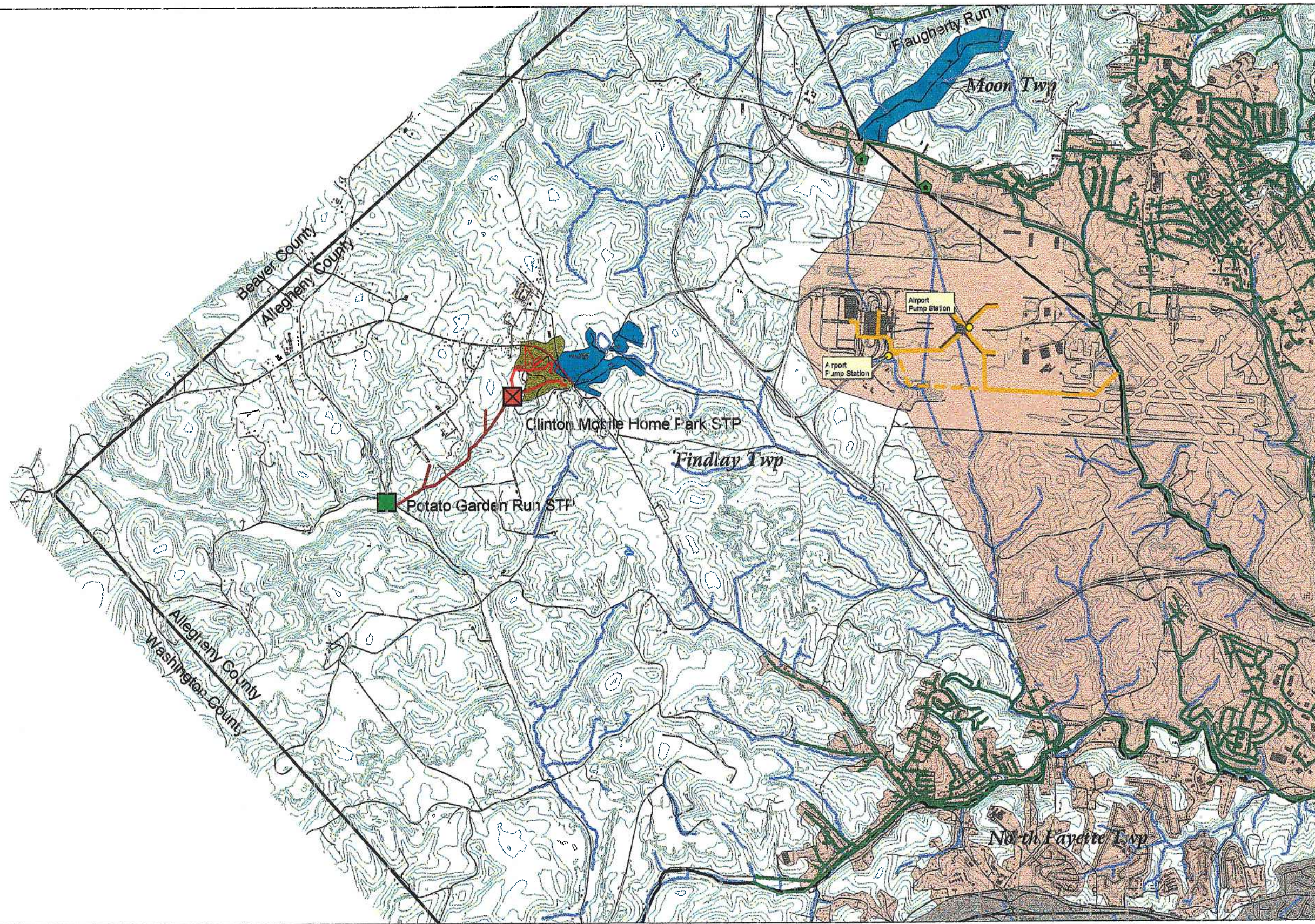
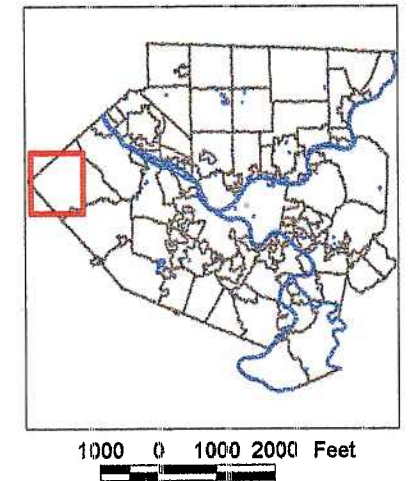
Agreement With	Date Enacted	Agreement Description	Expiration Date	Flow Limits (mgd)	Rate and Surcharge Provisions	Sampling Provisions	Flow Monitoring Provisions	Dispute Resol. Procedure	Basis of Cost Allocation
Moon Township Municipal Authority	01/05/98	Moon Clinton Road Sanitary Sewer Extension Agreement executed as a portion of Findlay became accessible to MTMA's wastewater collection and pumping system tributary to the Montour Run STP							\$261 per EDU Moon charges Findlay to proportionate share of cost for pumping station
Moon Township Municipal Authority	05/21/97	Findlay enters agreement with MTMA for wastewater conveyance and treatment of the area tributary to the Flaugherty Run STP	Remain in effect so long as the Moon Authority owns and operates its Flaugherty Run Wastewater conveyance and Treatment System						MTMA will charge lesser of: retail sewer rate charge to residents of Moon or rate calculated by Moon's engineer equal to total annual cost of Flaugherty Run wastewater system by number of EDU's served by system
Moon Township Municipal Authority	12/08/71	Agreement states that the Township of Findlay will make provisions for the transportation, treatment, and disposal of sewage of the Montour Run Watershed Area for treatment by the MTMA	Until the date of the expiration of the legal existence of the Moon Authority or until the expiration of one calendar year following the payment in full of the bonds	None			None	Arbitration	Charged on actual costs - MTMA makes no money

Township of Findlay

Water Pollution Control Facility Service Area and Collection System

Allegheny County
Department of Economic Development

Allegheny County, PA



- Public Treatment Facility
- Proposed STP
- STP To Be Abandoned
- Municipal Boundary
- Major Road
- Contour
- Hydrologic Feature
- Building
- Collection System
- Separate
- On-Lot Problem Area
- Pipe Type
- Collector
- Force Main
- Trunk
- Allegheny County Department of Aviation To Moon Twp Municipal Authority
- Dept. of Aviation Collection System
- Dept. of Aviation Force Main
- Neighboring Service Area
- Neighboring Collection System
- Moon Twp Municipal Authority Pump Station
- ALCOSAN Service Area
- Not Field Verified



Borough of Glassport

The Borough of Glassport owns and operates the Glassport Borough Sewage Treatment Plant (STP). This plant serves customers in Glassport. The Glassport STP is a 1.2-mgd contact stabilization, activated sludge plant that discharges to the Monongahela River. There are also five permitted CSO outfalls. The average monthly flow at the Glassport STP in 1997 was 0.90 mgd and the average monthly organic loading in 1997 was 547 lb CBOD₅/day. Currently, there are no pump stations within the Borough of Glassport.

The Glassport STP was constructed in 1964 and was designed for a population of 12,000 people. No capacity expansions are anticipated within the next five years because the population is expected to stay the same or decrease. At the Glassport Borough/Liberty Borough boundary on Washington Boulevard, there is a point of intermunicipal connection. Flow from approximately 30 homes in Glassport Borough flows through Liberty Borough's collection system to the McKeesport WPCP. All NPDES laboratory testing is completed at on-site daily and off-site for yearly metals testing. There is a three-person crew responsible for maintaining the treatment plant.

There are 105 residents along Washington Boulevard and Naomi Avenue currently utilizing on-lot septic systems. The Washington Boulevard Sewer Extension Project will provide sewage service to these residents. The extension project includes a pump station (located at the bottom of Naomi and Pennsylvania Avenues, the lowest point in the proposed new service area), 1,350 linear feet of force main, and 9,500 linear feet of eight-inch PVC sewer line. Sewage will be treated at the Glassport STP. The Glassport Borough Council secured funding for the Washington Boulevard Sewer Extension project in the beginning of 1999. Monies from PennVest funding, the CDBG program, tap-in fees, and a bank loan will finance the \$1.64 million extension project. When this Washington Boulevard Sewer Extension is complete, 99 percent of the Glassport Borough residents will have public sewage treatment service.

The majority of the collection system is comprised of terra cotta pipe and is combined. As repairs are made, the sewer pipes are fitted with plastic sleeves. There are five, NPDES-permitted, CSO regulator structures in the system and a plant outfall. The Borough of Glassport uses its own personnel for monitoring, maintaining, and repairing sewer lines. These activities are not limited to emergency repairs, but extended to activities such as physical inspection of manholes, flushing, and repairs. In order to comply with the December 30, 1992 corrective action plan, the Borough continues to monitor the collection system with visual inspections and televising, and making necessary repairs to reduce I/I in the system. Problem areas resulting in blockage due to lack of sufficient grade, leaking joints, etc. are managed on an as-needed basis. For emergencies, the Borough uses a four-person crew from the Street Department. The Glassport Borough Street Department has equipment available for maintenance and repair including a dump truck, pickup truck, backhoe, compressor, tar machine and street paver. Other equipment such as a vactor truck is rented from the Twin Rivers Council of Government (TRCOG). Because the TRCOG does not have televising equipment, Glassport has borrowed a camera in the past from White Oak or Hydrotech.

The Borough of Glassport service area population of approximately 5,200 is projected to increase to approximately 5,208 by 2015. Based on the 2015 population increase, the hydraulic and organic loading to the treatment plant are expected to increase minimally. The hydraulic and organic loading capacities of the plant appear to be adequate for projected average daily flow and loading conditions in 2015.

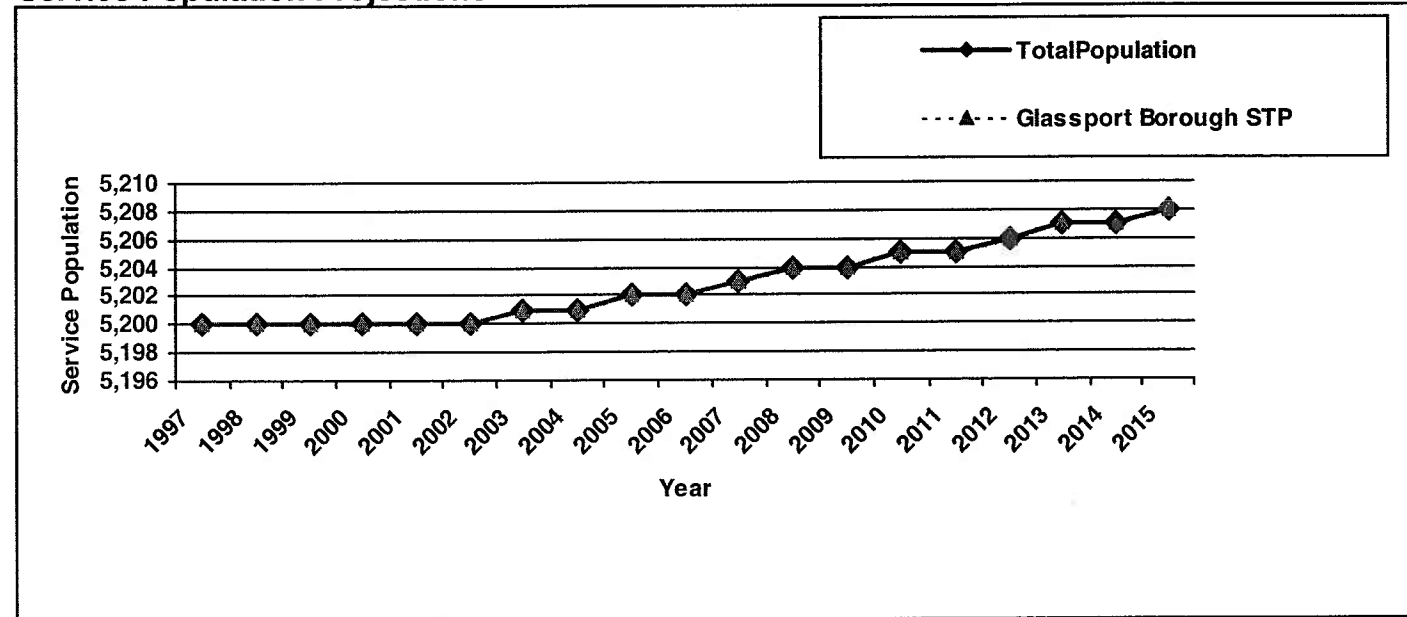
Service Area Summary

POTW Name	1997 Service Population	2015 Service Population	Municipality	Type Of Sewer System
Glassport Borough STP	5200	5208	Glassport Borough	Combined

Treatment Process Summary

POTW Name	Equalization	Screening	Comminution	Grit Removal	Prechlorination	Primary Treatment	Activated Sludge	Extended Aeration	Contact Stabilization	Trickling Filter	Disinfection	Dechlorination	Filtration	Reaeration	Thickening	Aerobic Digestion	Anaerobic Digestion	Line Stabilization	Composting	Thermal Processing	Dewatering	Land Application	Landfill	Incineration	Haul to other STP	Odor Control
Glassport Borough STP		■	■			■																■				

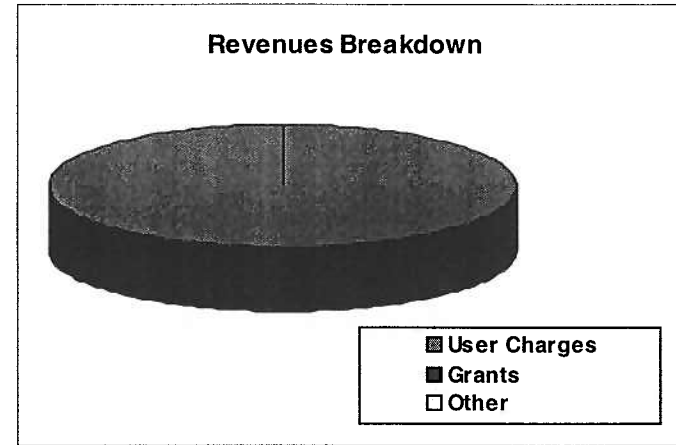
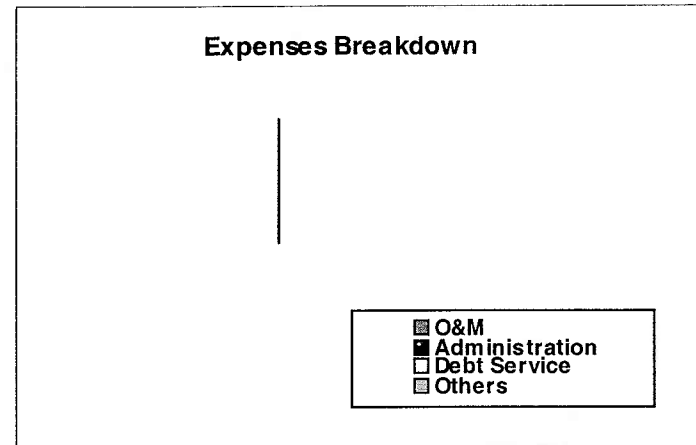
Service Population Projections



Borough of Glassport

Sewer Use Ordinances

Municipality	Corrective Action Plan	Grease Trap Requirement	Industrial Pretreatment Program	Illicit Connection Inspection At Sale	Surcharge
Glassport Borough	Yes	No	Yes, McKeesport Auth. pretreatment plan	No	



Financial Information

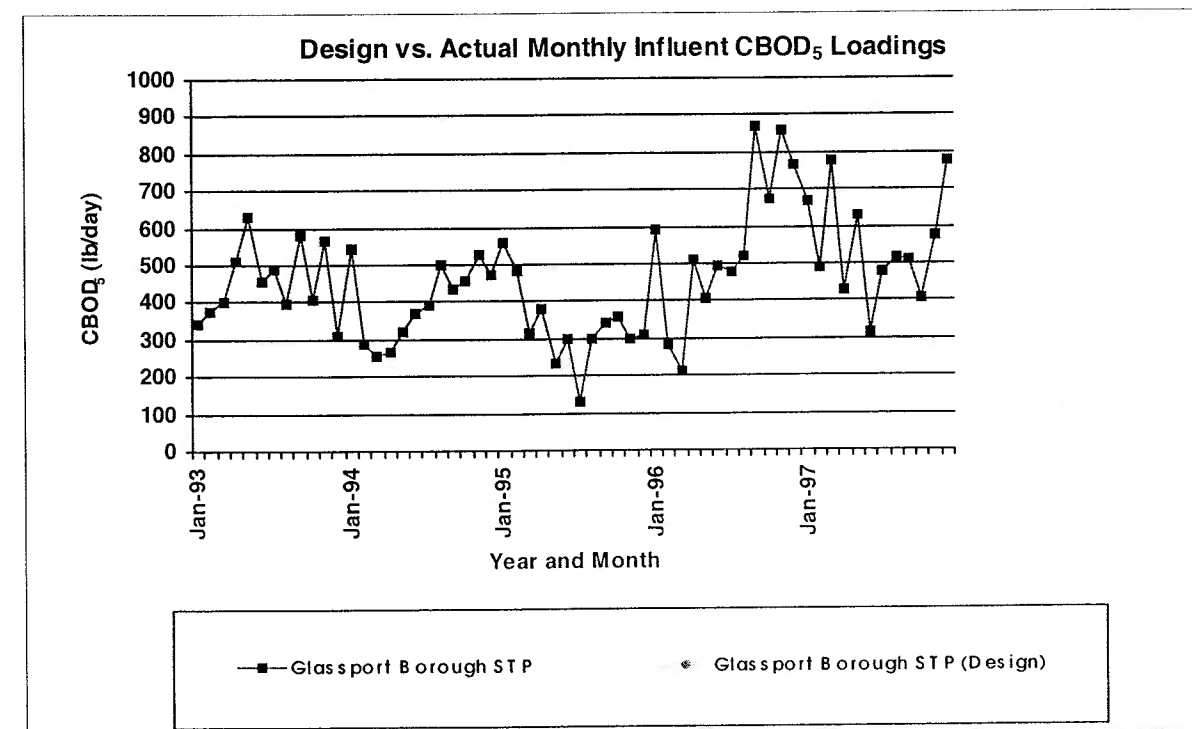
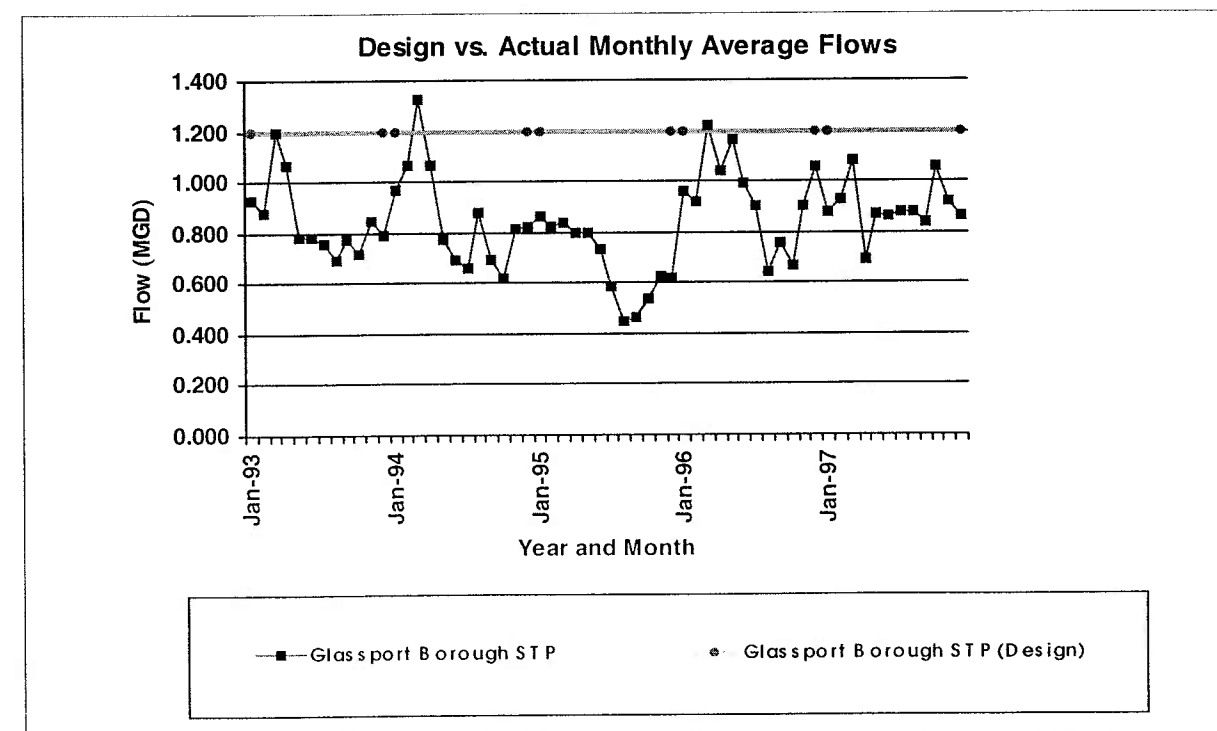
REVENUES		
User Charges:		\$162,391
Grants:		\$0
Other:		\$0
Total Revenues		\$162,391
EXPENSES		
Operations and Maintenance		
Administration:		
Debt Service:		
Other:		
Total Expenses		
Surplus(Deficit):		\$162,391
Debt Service Coverage Ratio		
YEAR:	1995	Actual/ Budgeted
Information Source:		
Revenues	Local Government Financial Statistics (PaDCED)	Actual
Expenses	No Source Found	

Borough of Glassport

1997 Plant Performance

Glassport Borough STP	Average Daily Flow (mgd)			CBOD ₅ (lb/Day)			TSS (lb/Day) Effluent			Effluent Coliform (Col./100ml)				
	Monthly	Summer	Winter	Monthly Influent	Average Effluent	% Removal	Summer	Winter	Average	Summer	Winter	Average Daily	Summer	Winter
January	0.88			668	77	88%			98			133		
February	0.93			489	74	85%			63			172		
March	1.08			775	53	93%			51			155		
April	0.69			432	41	91%			16			150		
May	0.87			631	48	92%			45			90		
June	0.86			316	79	75%			101			155		
July	0.88			477	37	92%			93			110		
August	0.88			514	91	82%			127			44		
September	0.84			511	42	92%			21			137		
October	1.06			407	43	89%			33			108		
November	0.92			575	42	93%			24			102		
December	0.86			775	59	92%			51			126		
Maximum	1.08	1.20	1.20		91.0		250	250	127	300	300	172	200	35000
Max as % Limit	90%				36%				42%			86%		
Average	0.90				57.2				60			124		
3 Month > Limit?	No													

Plant Loading Summary



Borough of Glassport

Collection System Facilities

TREATMENT PLANT	Design Capacity (MGD)	Biological Treatment	Owner	Operator
Glassport Borough STP	1.2	Activated Sludge	GLAS	GLAS
Pump Station	Peak Capacity	Avg Daily Flow	Owner	Operator
None				
Equalization Basin	Capacity	Location	Owner	Operator
None				

Sewer Maintenance Information

<i>Service Community</i>	<i>Maintained By:</i>	<i>Mainten. Done:</i>	<i>Equipment Source</i>	<i>I/I Removal</i>	<i>I/I Flow Monitor</i>
Glassport Borough	Glassport Borough	As-needed	Street Dept., COG	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Borough of Glassport

Intermunicipal Agreements

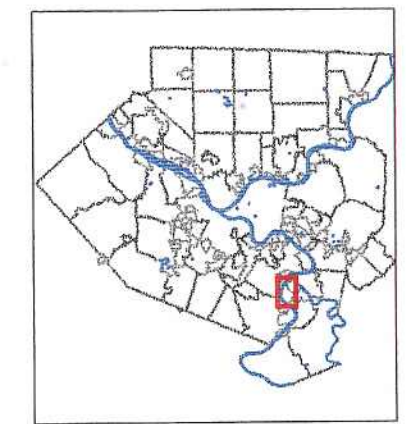
Agreement With	Date Enacted	Agreement Description	Expiration Date	Flow Limits (mgd)	Rate and Surcharge Provisions	Sampling Provisions	Flow Monitoring Provisions	Dispute Resol. Procedure	Basis of Cost Allocation
Liberty, Borough of	Agreement not available	Glassport sewage will be conveyed through Liberty Borough via the Liberty Borough collection system to the McKeesport WPCP							
The Municipal Authority of the City of McKeesport	12/14/79	Agreement states that the Borough of Glassport construct the necessary sewers, pumping stations, and treatment works to collect and convey sewage to the City of McKeesport for treatment	Until date of expiration of the legal existence of the Authority) or until the expiration of one caleneder year following the payment in full of all bonds	None		Required for industrial customers	None		Costs are allocated based on water usage

Borough of Glassport

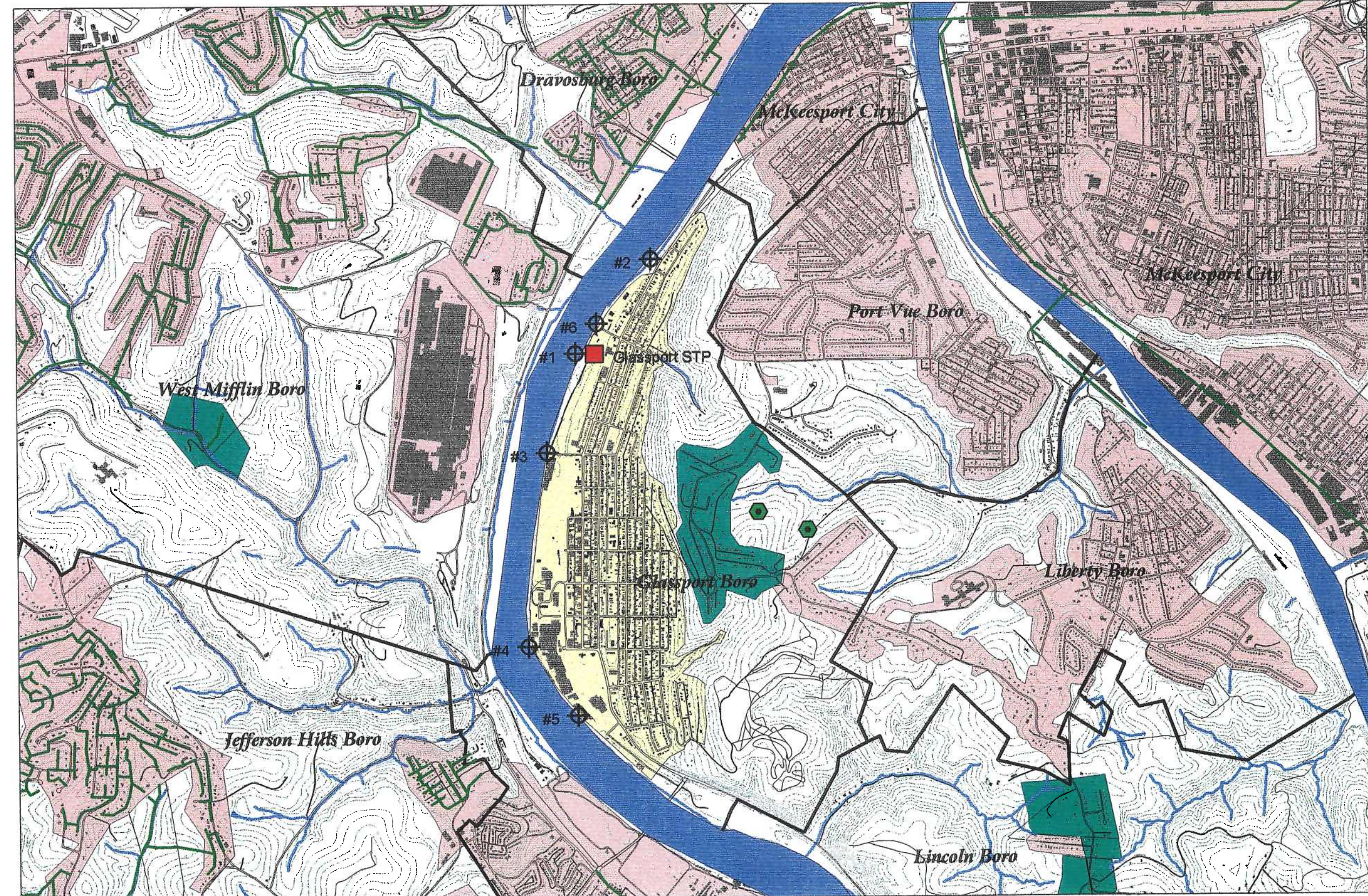
Water Pollution Control Facility Service Area and Collection System

Allegheny County
Department of Economic Development

Allegheny County, PA



500 0 500 1000 Feet



- Public Treatment Facility
- Existing STP
- Pump Station
- proposed
- Combined Sewer Outfall
- Municipal Boundary
- Major Road
- Contour
- Hydrologic Feature
- Building
- Collection System
- Combined
- On - Lot Problem Area
- Neighboring Service Area
- Neighboring Collection System

Not Field Verified

Source: USGS Quad Sheet referenced by Neilan Engineers

Hampton Township Sanitary Authority

The Hampton Township Sanitary Authority (HTSA) is a capital authority serving approximately 6,900 customers in most of Hampton Township and parts of Richland Township. The Allison Park Water Pollution Control Plant (WPCP) is owned by the Hampton Township Sanitary Authority and operated by the Township of Hampton under a lease agreement with HTSA. The Township operates the 3.2-mgd plant that discharges into Pine Creek. It is permitted for a corresponding organic load of 4,938 lb CBOD₅/day. The average monthly flow to the Allison Park Water Pollution Control Plant in 1997 was 2.19 mgd. The average monthly organic loading was 2,934 lb CBOD₅/day.

The original WPCP was built in 1971. The Phase III Expansion of the APWPCP in 1992 increased the design average daily capacity of the plant from 1.95 mgd to 3.2 mgd and provided an increased peak capacity of 10 mgd to accommodate wet weather flow. HTSA was under a consent order and tap ban prior to the Phase III Expansion. The expanded treatment process consists of mechanical bar screening, primary clarification, diffused aeration activated sludge reactors, secondary clarification and chlorination. Effluent is reaerated prior to discharge to Pine Creek. An activated biofilter (ABF) was removed from service two years ago because it was an odor source and ineffective. It is anticipated that a full engineering analysis will be required to keep the current plant permit ratings with the ABF off-line.

HTSA leases the sanitary sewer collection system to Hampton Township. The Township employs four full-time personnel for monitoring, maintenance, and repair of collector and interceptor sewers. The Sewer Line Maintenance Department performs the tasks of manhole inspections, televising of sewer lines, repair of manholes and sewer lines, and dye testing of homes to identify sources of infiltration and inflow (I/I). They utilize television inspection and cleaning equipment from the North Hills Council of Government.

Richland Township is responsible for its own collection system. The Public Works Department in Richland Township performs maintenance on the sewer system that includes dye testing, inspections during tap-ins and when new connections are made, and inspection of manholes.

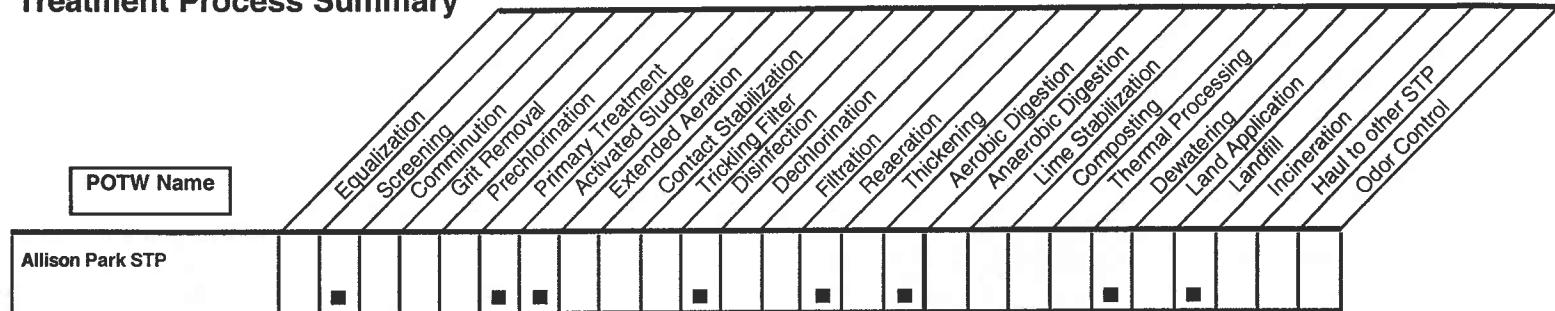
Hampton Township currently operates and maintains three sewage pump stations. These are the Glannon Pumping Station, the Brutonshire Pumping Station, and Oaks of Northampton Pumping Station. It is possible in the future that a pump station will be added to the collection system to transport sewage from Green Valley Drive and Fairview Drive area in the southeast corner of Hampton Township to the Allison Park collection system.

The Hampton service area population of approximately 19,323 is projected to increase to approximately 26,200 by 2015. Based on the 2015 population increase, the hydraulic and organic loadings to the treatment plant are expected to increase by 35 percent. The hydraulic loading is projected to increase to approximately 3.0 mgd, and the organic loading is projected to increase to approximately 4,000 lb CBOD₅/day. The hydraulic and organic loading capacities of the plant appear to be adequate for projected average daily flow and loading conditions in 2015.

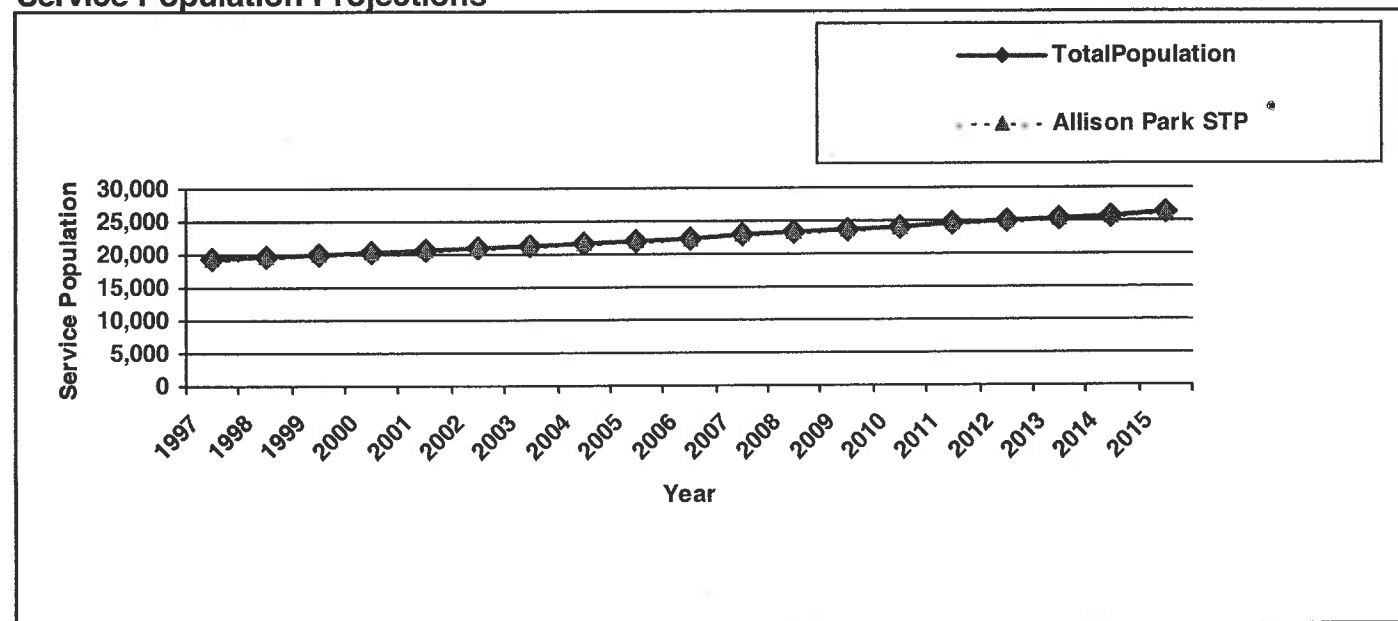
Service Area Summary

POTW Name	1997 Service Population	2015 Service Population	Municipality	Type Of Sewer System
Allison Park STP	19323	26172	Hampton Township	Separate
			Richland Township	Separate

Treatment Process Summary



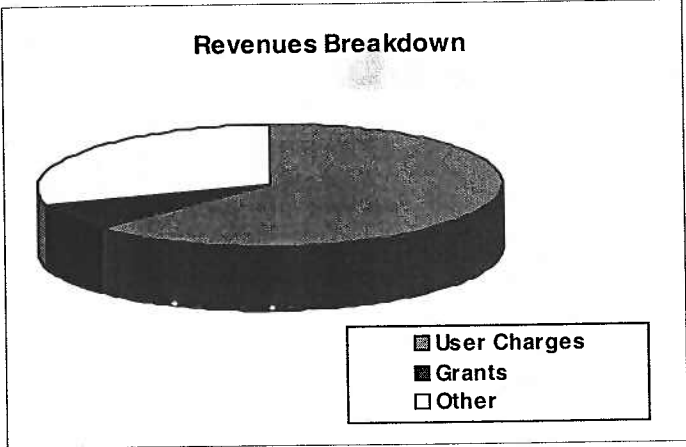
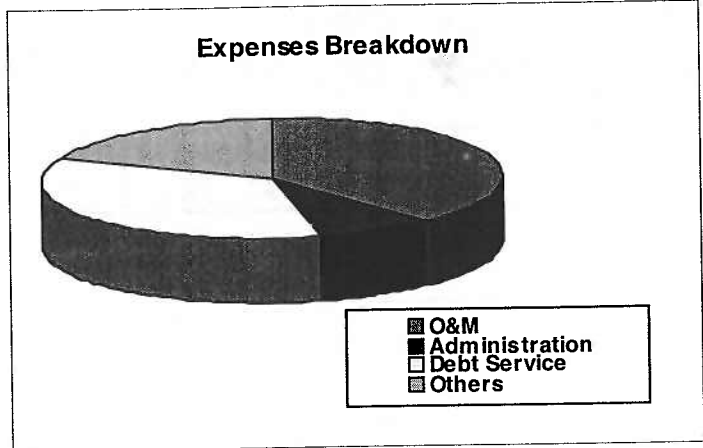
Service Population Projections



Hampton Township Sanitary Authority

Sewer Use Ordinances

Municipality	Corrective Action Plan	Grease Trap Requirement	Industrial Pretreatment Program	Illicit Connection Inspection At Sale	Surcharge
Hampton Township	Completed	No data	No, no industrial waste discharges in area	Yes, tested at time of resale	
Richland Township	Completed	Yes	AVJSA Sewer Use Ordinance	Yes, inspection at time of sale or reassessment	



Financial Information

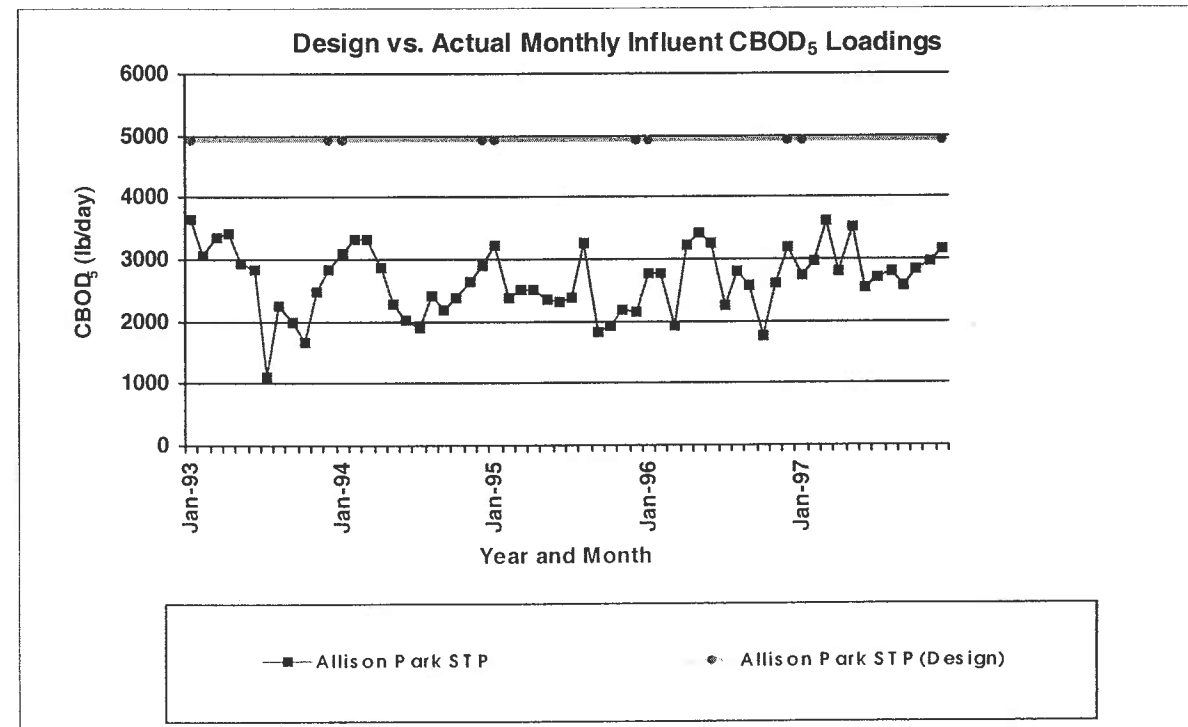
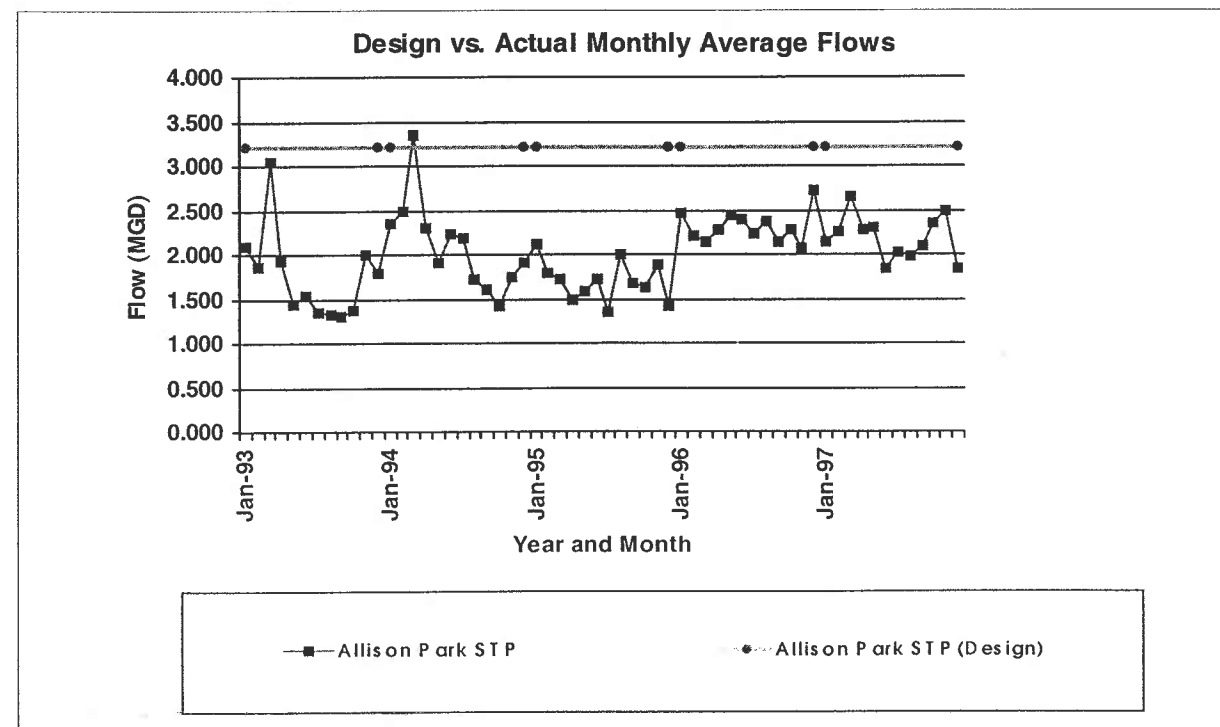
REVENUES		
User Charges:		\$1,818,000
Grants:		\$208,787
Other:		\$846,574
Total Revenues		\$2,873,361
EXPENSES		
Operations and Maintenance		\$924,877
Administration:		\$198,500
Debt Service:		\$840,151
Other:		\$438,000
Total Expenses		\$2,401,528
Surplus(Deficit):		\$471,833
Debt Service Coverage Ratio		1.56
Information Source:	YEAR: 1997	Actual/ Budgeted
Revenues	Hampton 1998 Proposed Sewer Fund Summary	Budgeted
Expenses	Hampton 1998 Proposed Sewer Fund Summary	Budgeted

Hampton Township Sanitary Authority

1997 Plant Performance

Allison Park STP	Average Daily Flow (mgd)			CBOD ₅ (lb/Day)			TSS (lb/Day) Effluent			Effluent Ammonia Nitrogen (mg/l)			Effluent Coliform (Col./100ml)				
	Monthly	Summer	Winter	Monthly Influent	Average Effluent	% Removal	Summer	Winter	Average	Summer	Winter	Average	Summer	Winter	Average Daily	Summer	Winter
January	2.15			2,727	47	98%			96			0.67			9		
February	2.26			2,975	87	97%			123			0.21			4		
March	2.65			3,605	129	96%			124			0.23			6		
April	2.28			2,796	110	96%			93			0.21			12		
May	2.30			3,522	91	97%			171			0.05			11		
June	1.84			2,532	75	97%			166			0.11			25		
July	2.02			2,706	85	97%			137			0.15			11		
August	1.98			2,795	81	97%			129			0.11			15		
September	2.10			2,578	53	98%			150			0.34			9		
October	2.36			2,853	98	97%			147			0.15			15		
November	2.48			2,958	667 E	77%			118			0.15			13		
December	1.83			3,159	92	97%			119			0.13			6		
Maximum	2.65	3.40	3.40		667		400	667	171	800	800	0.7	1.5	4.5	25	200	2000
Max as % Limit	78%				167%				21%			45%			13%		
Average	2.19				135				131			0.2			11		
3 Month > Limit?	No																

Plant Loading Summary



Hampton Township Sanitary Authority

Collection System Facilities

TREATMENT PLANT	Design Capacity (MGD)	Biological Treatment	Owner	Operator
Allison Park STP	3.2	Activated Sludge	HTSA	HTSA
Pump Station	Peak Capacity	Avg Daily Flow	Owner	Operator
Bruntonshire	0.144 mgd		HTSA	HTSA
Glannon	0.317 mgd		HTSA	HTSA
Oaks of Northhampton	0.288 mgd		HTSA	HTSA
Equalization Basin	Capacity	Location	Owner	Operator
None				

Sewer Maintenance Information

<i>Service Community</i>	<i>Maintained By:</i>	<i>Mainten. Done:</i>	<i>Equipment Source</i>	<i>III Removal</i>	<i>III Flow Monitor</i>
Hampton Township	HTSA	As-needed	HTMA, COG	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Richland Township	Public Works Dept.	Routine	Pub. Wrks, Contract., COG	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Hampton Township Sanitary Authority

Intermunicipal Agreements

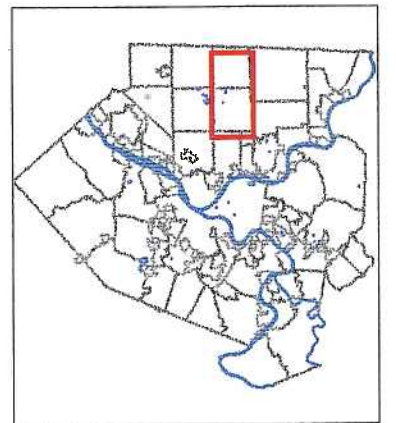
Agreement With	Date Enacted	Agreement Description	Expiration Date	Flow Limits (mgd)	Rate and Surcharge Provisions	Sampling Provisions	Flow Monitoring Provisions	Dispute Resol. Procedure	Basis of Cost Allocation
Hampton Township	08/28/90	The Authority will accept, treat, transport, and dispose of sanitary sewage from an area of Richland known as the Crouse Run Watershed Area and a portion of Richland known as the Willow Run Watershed Area		The maximum instantaneous sewage flow shall not exceed three times the daily average flow			Sewage flow meters at interceptor lines	Arbitration	\$3.00 for each 1,000 gallons of water consumed with 10,000 gallon minimum
Richland Township	08/28/90	The Authority will accept, treat, transport, and dispose of sanitary sewage from an area of Richland known as the Crouse Run Watershed Area and a portion of Richland known as the Willow Run Watershed Area		The maximum instantaneous sewage flow shall not exceed three times the daily average flow			Sewage flow meters at interceptor lines	Arbitration	\$3.00 for each 1,000 gallons of water consumed with 10,000 gallon minimum

Hampton Township Municipal Authority

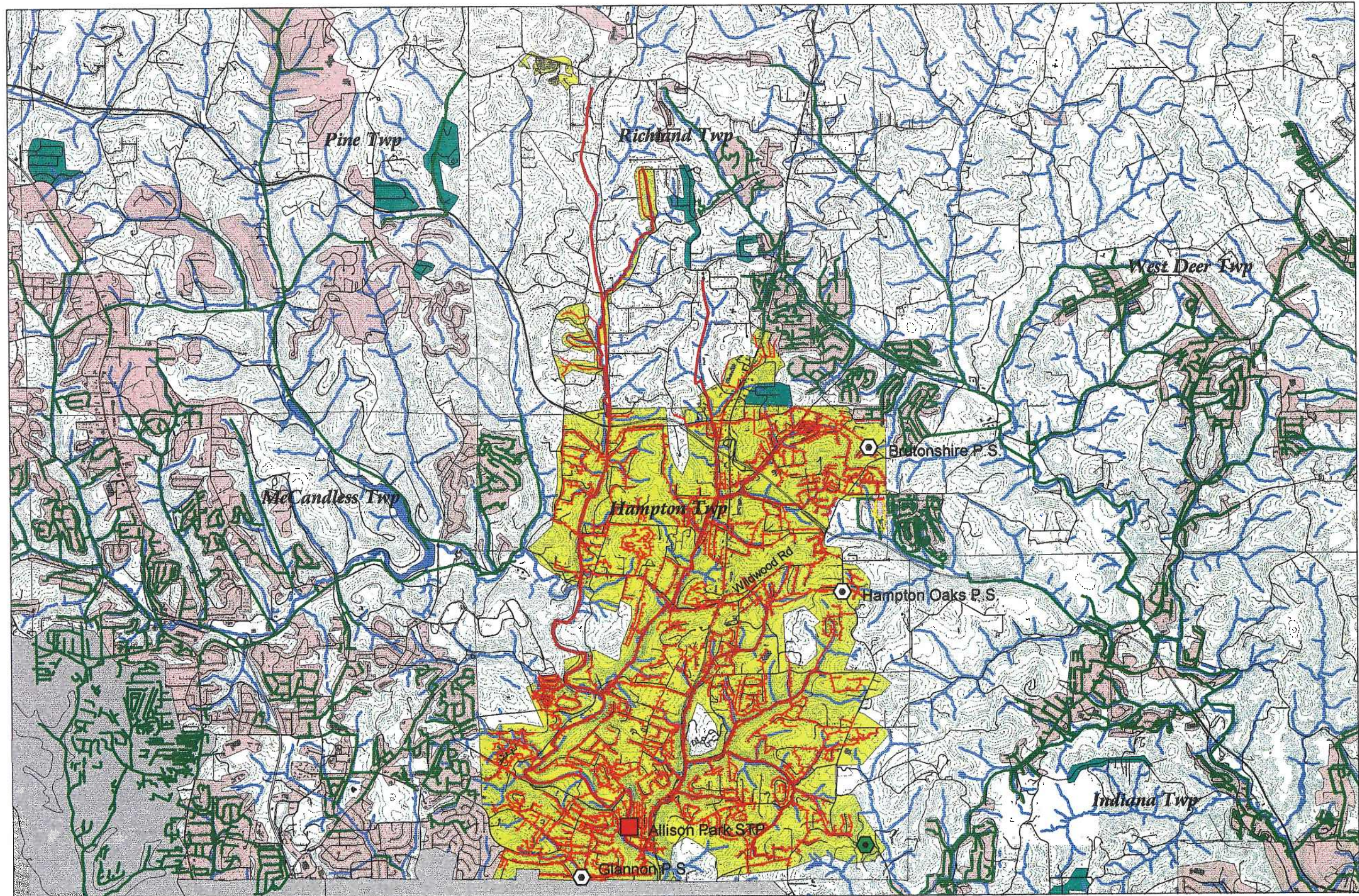
Water Pollution Control Facility Service Area and Collection System

Allegheny County
Department of Economic Development

Allegheny County, PA



2000 0 2000 Feet



- Public Treatment Facility
 - Existing STP
 - Pump Station
 - existing
 - proposed
 - Municipal Boundary
 - Major Road
 - Contour
 - Hydrologic Feature
 - Building
 - Collection System
 - Separate
 - On-Lot Problem Area
 - Pipe Type
 - Collector
 - Force Main
 - Trunk
 - Neighboring Service Area
 - Neighboring Collection System
 - ALCOSAN Service Area
- Not Field Verified

Source: KLH Engineers Inc.

Municipal Authority of the Borough of Leetsdale

The Municipal Authority of the Borough of Leetsdale (MABL) is a sewage collection and treatment authority serving approximately 1,454 customers in Leetsdale Borough, Edgeworth Borough, and part of Leet Township. Leet Township is served in part by the Ambridge STP in Beaver County. There are five members on the authority board comprised of two representatives from Edgeworth Borough and three representatives from Leetsdale Borough. The MABL owns, operates, and maintains the Leetsdale Borough Sewage Treatment Plant (STP), three pump stations, five overflow regulators, one leaping weir, and an interceptor sewer. The plant has a permitted hydraulic capacity of 0.775 mgd and discharges into the Ohio River. The permitted organic loading capacity for the treatment plant is 875 lb CBOD₅/day.

For the period of 1993 to 1997, the peak 3-month average daily flow at the plant has exceeded the permitted capacity in every year except for 1995. By Chapter 94 definition, the plant was hydraulically overloaded during 1994 and 1998. As a result, the MABL has been under a tap restriction. The hydraulic overloading is directly related to inflow / infiltration (I/I) entering the combined sewer system. Also, flows were high due to malfunctioning overflow regulators which were locked into the open position allowing all sewage flows to discharge to the plant; these overflow regulators were repaired in 1997. The MABL has developed a three-phased plan aimed at reducing the overloading and extending the useful life of the treatment plant. The corrective action plan is comprised of the following components: rehabilitation of the overflow regulators, upgrading the aeration system, and re-rating the plant's design capacity. To date, the first two corrective action components have been completed. The MABL plans to expand the plant treatment capacity to 1.5 mgd within the next two years. In 1997, the average annual wastewater flow to the plant was 0.688 mgd. The monthly average influent organic loading was 630 lb BOD₅/day.

The MABL has one superintendent and three assistant operators who maintain the treatment plant, pump stations, interceptors, and overflow structures. Routine sewer inspections are recorded daily and maintenance is provided as required. The MABL's responsibility for the sewer system is limited to the interceptor lines. The pump stations support the overflow regulators at the base of each major watershed. The pump stations and regulator structures are inspected daily, and maintenance is performed as needed.

The System Inventory and Characterization and Hydraulic and Hydrologic Characterization reports have been completed as required under the National CSO Control Policy requirements of their NPDES discharge permit. MABL is in the process of preparing the Nine Minimum Controls report.

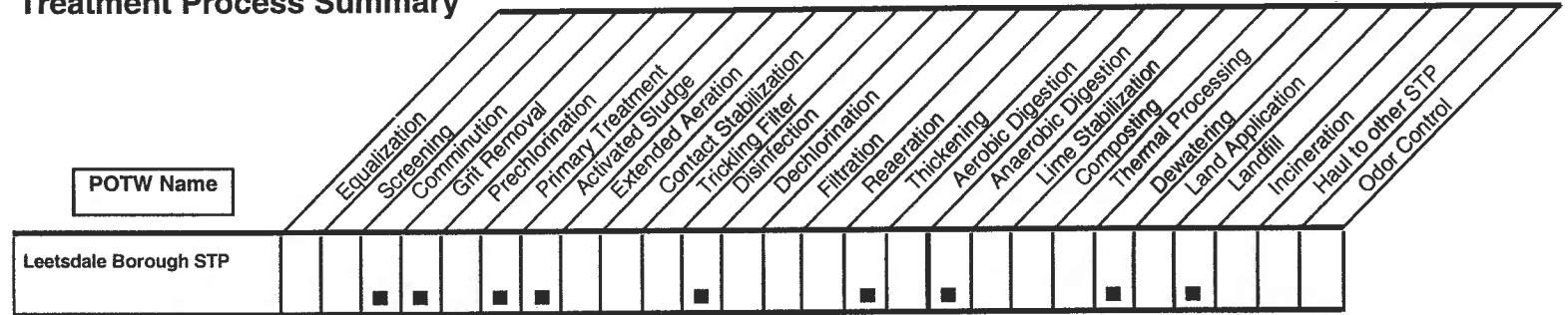
The Boroughs of Leetsdale and Edgeworth maintain their own combined sewers. Leetsdale Borough is a member of the Quaker Valley Council of Government (QVCOG) and utilizes their sewer vector to clean storm sewer lines and catch basins annually. Edgeworth Borough reports using a contractor for access to a sewer vector and camera. This equipment is used for the cleaning of sewer lines and videotaping of sewer line conditions. The separate sewers in Leet Township are maintained by the Leet Township Municipal Authority (LTMA) and are cleaned on an as-needed basis. Routine maintenance is performed on the Quaker Heights grinder pump station weekly by LTMA personnel.

The Leetsdale service area population of approximately 3,372 is projected to increase to approximately 3,500 by 2015. Based on the 2015 population increase, the hydraulic and organic loadings to the treatment plant are expected to increase by four percent. The hydraulic loading is projected to increase to approximately 0.71 mgd, and the organic loading is projected to increase to approximately 650 lb CBOD₅/day. The average daily hydraulic and organic loading capacities of the plant appear to be adequate for projected average daily flow and loading conditions in 2015.

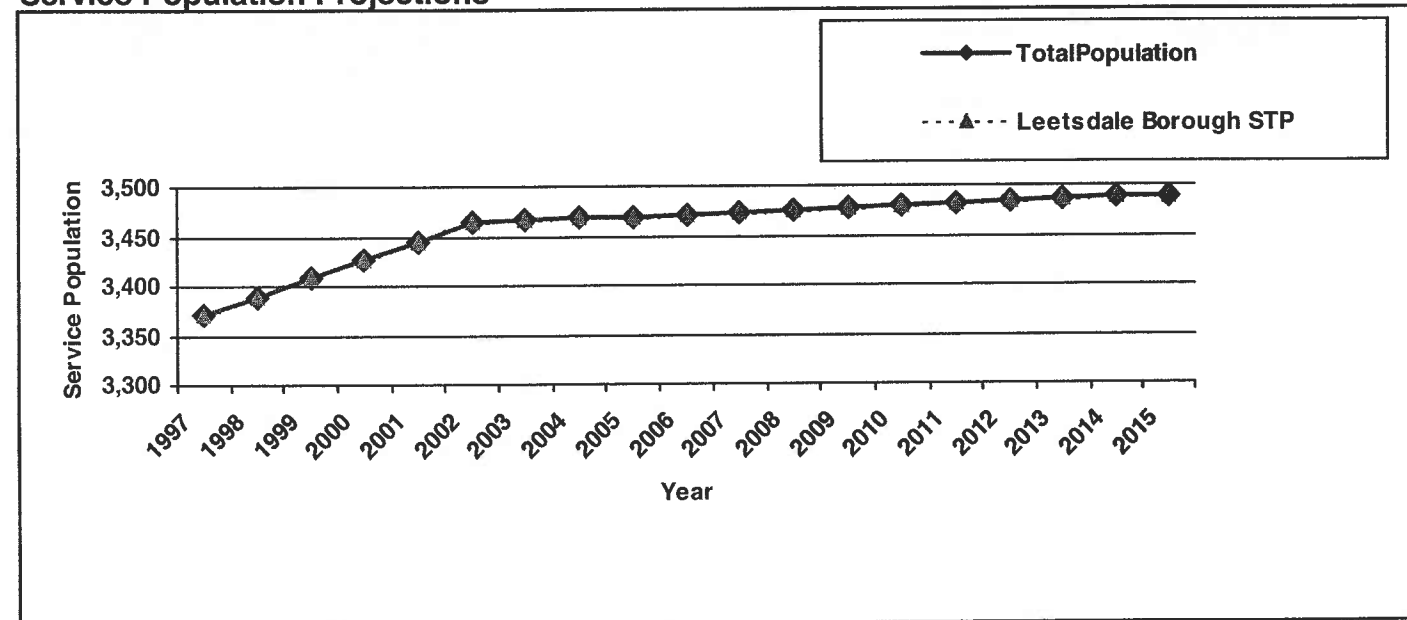
Service Area Summary

POTW Name	1997 Service Population	2015 Service Population	Municipality	Type Of Sewer System
Leetsdale Borough STP	3372	3490	Edgeworth Borough	Combined
			Leet Township	Separate
			Leetsdale Borough	Combined

Treatment Process Summary



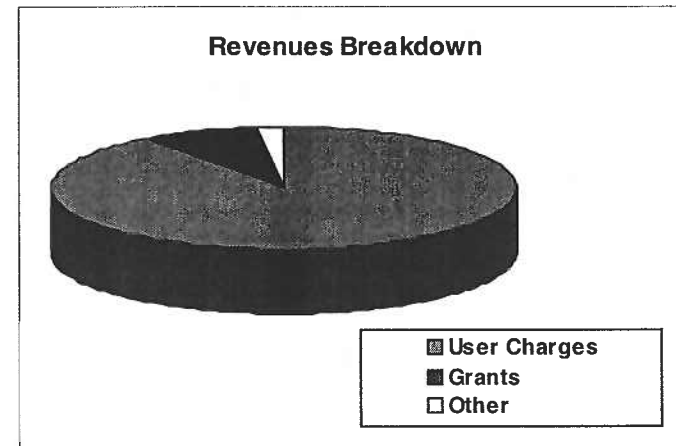
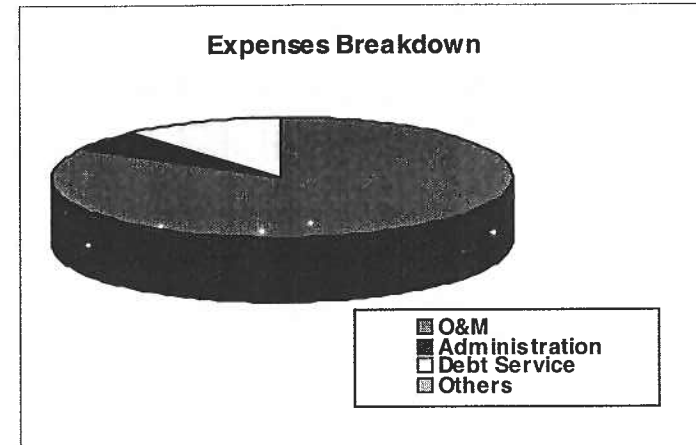
Service Population Projections



Municipal Authority of the Borough of Leetsdale

Sewer Use Ordinances

Municipality	Corrective Action Plan	Grease Trap Requirement	Industrial Pretreatment Program	Illicit Connection Inspection At Sale	Surcharge
Edgeworth Borough	Yes	Yes	No industrial customers		Yes
Leet Township	Yes		No industrial customers		
Leetsdale Borough	Yes	Yes	Yes	Yes, but not enforced	



Financial Information

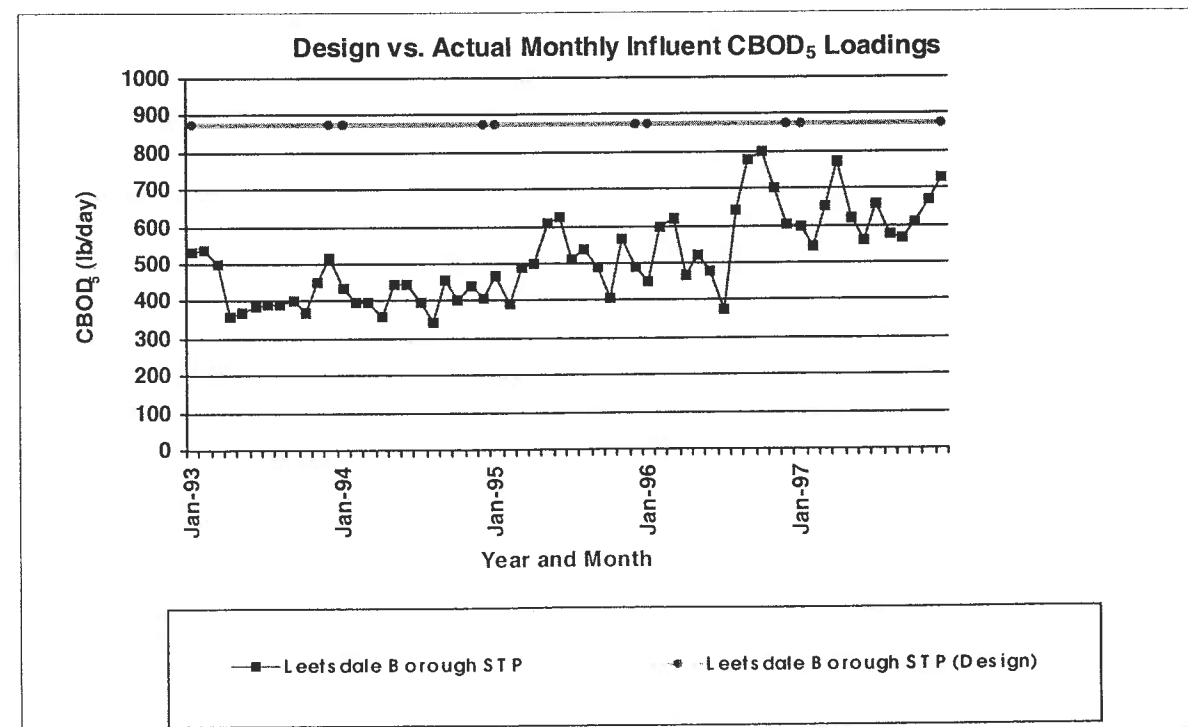
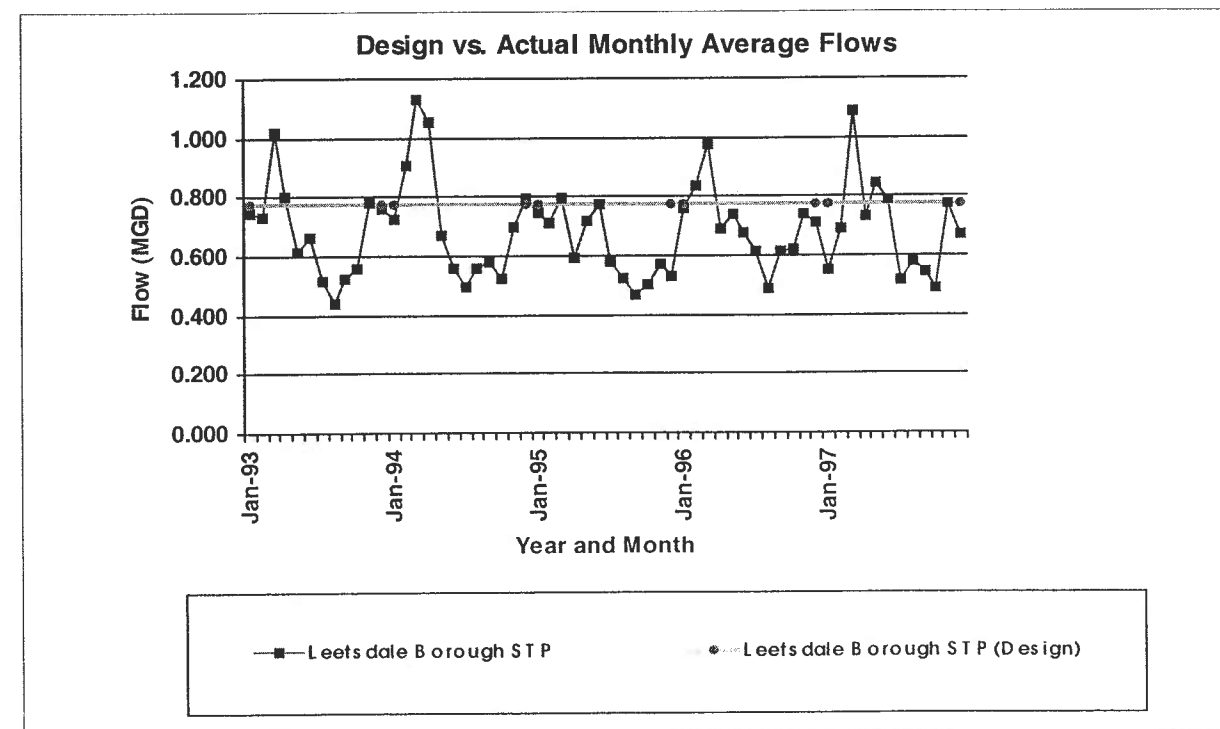
REVENUES		
User Charges:		\$363,000
Grants:		\$32,000
Other:		\$8,000
Total Revenues		\$403,000
EXPENSES		
Operations and Maintenance		\$314,000
Administration:		\$21,000
Debt Service:		\$42,850
Other:		\$0
Total Expenses		\$377,850
Surplus(Deficit):		\$25,150
Debt Service Coverage Ratio		1.59
Information Source:	YEAR: 1998	Actual/Budgeted
Revenues	Borough of Leetsdale Annual Report	Budgeted
Expenses	Borough of Leetsdale Annual Report	Budgeted

Municipal Authority of the Borough of Leetsdale

1997 Plant Performance

Leetsdale Borough STP	Average Daily Flow (mgd)			CBOD ₅ (lb/Day)			TSS (lb/Day) Effluent			Effluent Coliform (Col./100ml)				
	Monthly	Summer	Winter	Monthly Influent	Average Effluent	% Removal	Summer	Winter	Average	Summer	Winter	Average Daily	Summer	Winter
January	0.55			599	47	92%			43			115		
February	0.69			545	47	91%			31			149		
March	1.09			654	68	90%			57			104		
April	0.73			770	49	94%			42			83		
May	0.84			620	54	91%			35			64		
June	0.79			561	65	88%			31			56		
July	0.51			658	37	94%			35			57		
August	0.58			576	44	92%			39			85		
September	0.54			564	28	95%			31			65		
October	0.49			609	28	95%			45			66		
November	0.78			671	43	94%			41			75		
December	0.67			730	67	91%			38			56		
Maximum	1.09	0.78	0.78		68		162	162	57	194	194	149	200	2000
Max as % Limit	140%				42%				29%			75%		
Average	0.69				48				39			81		
3 Month > Limit?	No													

Plant Loading Summary



Municipal Authority of the Borough of Leetsdale

Collection System Facilities

TREATMENT PLANT	Design Capacity (MGD)	Biological Treatment	Owner	Operator
Leetsdale Borough STP	0.775	Activated Sludge	MABL	MABL

Pump Station	Peak Capacity	Avg Daily Flow	Owner	Operator
Edgeworth Lane	320 gpm	150 gpm	MABL	MABL
Leet St.	170 gpm	25 gpm	MABL	MABL
Little Sewickley Cr.	400 gpm	180 gpm	MABL	MABL
Quaker Heights	37 gpm		LTMA	LTMA

Equalization Basin	Capacity	Location	Owner	Operator
None				

Sewer Maintenance Information

<i>Service Community</i>	<i>Maintained By:</i>	<i>Mainten. Done:</i>	<i>Equipment Source</i>	<i>I/I Removal</i>	<i>I/I Flow Monitor</i>
Edgeworth Borough	Edgeworth Borough	As-needed	Borough, Contractor	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Leet Township	LTMA or Contractor	As-needed	LTMA, Contractor	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Leetsdale Borough	Leetsdale Borough	Routine	COG	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Municipal Authority of the Borough of Leetsdale

Intermunicipal Agreements

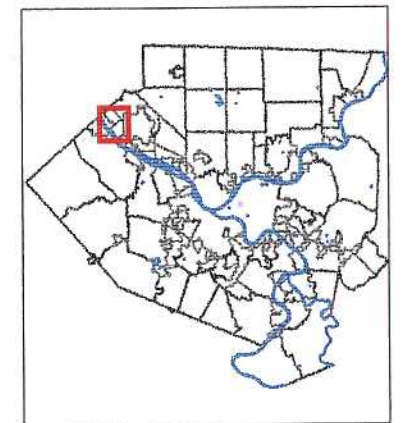
Agreement With	Date Enacted	Agreement Description	Expiration Date	Flow Limits (mgd)	Rate and Surcharge Provisions	Sampling Provisions	Flow Monitoring Provisions	Dispute Resol. Procedure	Basis of Cost Allocation
Edgeworth, Borough of	10/01/59	Agreement states that the Authority will provide treatment service to the Borough of Edgeworth		None		None		If Edgeworth defaults in payments, Leetsdale may take legal action	Based on water meter readings from Edgeworth Boro Municipal Authority
Leetsdale, Borough of	1959	Agreement states that the Authority will provide treatment service to the Borough of Leetsdale							

Municipal Authority of the Borough of Leetsdale

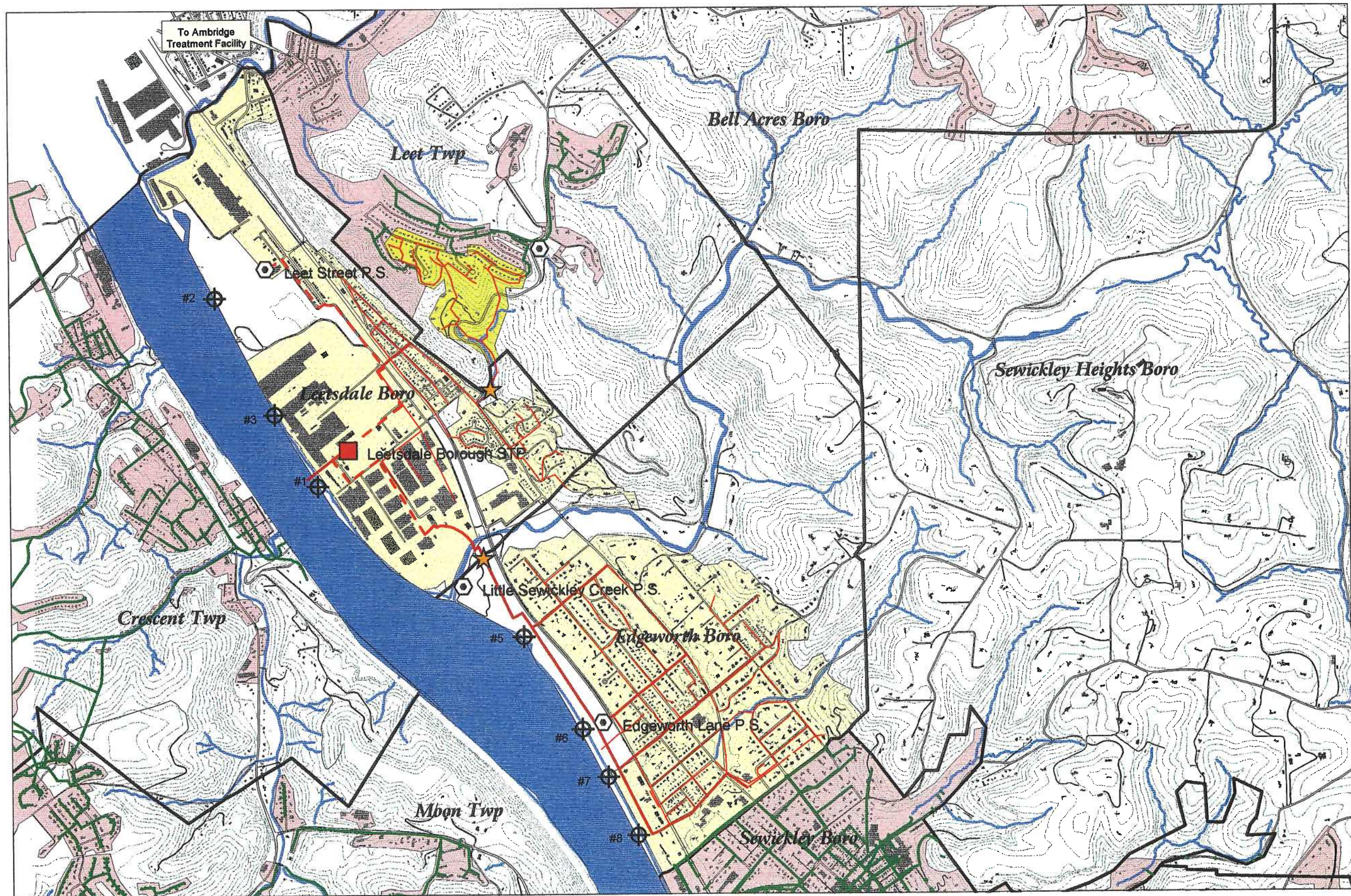
Water Pollution Control Facility Service Area and Collection System

Allegheny County
Department of Economic Development

Allegheny County, PA



500 0 500 1000 Feet



- Public Treatment Facility
- Existing S.T.P.
- Pump Station
- Combined Sewer Outfall
- Intermunicipal Connection
- Municipal Boundary
- Major Road
- Contour
- Hydrologic Feature
- Building
- Collection System
- Combined
- Separate
- Pipe Type
- Collector
- Force Main
- Trunk
- Neighboring Service Area
- Neighboring Collection System

Not Field Verified

Source: Municipal Authority of the Boro. of Leetsdale Sewage Treatment Project Map, 1958, Wm J. Murdoch Eng.

Borough of Lincoln

The Borough of Lincoln owns the Virginia Drive Sewage Treatment Plant (STP), which serves approximately 25 homes located on Virginia Drive. Approximately nine homes receive sewage treatment service at the Elizabeth Borough STP via the Elizabeth Township Sanitary Authority collection system. The remainder of Lincoln Borough utilizes on-lot septic systems for sewage treatment.

The Virginia Drive STP is a 0.0088-mgd treatment facility. The 15-year old STP consists of a 6,000-gallon septic tank followed by a 1,720-gallon holding tank, a 530-gallon siphon tank, two sand beds, and a chlorine contact tank. The STP discharges to a dry unnamed tributary of Coursin Hollow Run. In 1997, the average daily hydraulic loading at the STP was 0.0036 mgd.

NPDES-imposed coliform limits were violated six of the nine months for which the data was reported in 1997. The same is true for the effluent CBOD₅ concentrations. The ACHD Treatment Plant Inspection Reports have also found the STP to be non-compliant with the effluent limitations of the NPDES permit. ACHD has cited improper maintenance and inadequate construction of the STP as causes for these violations.

The Borough of Lincoln would like to abandon the Virginia Drive STP. The STP could be abandoned by installing a pump station in Lincoln Borough to convey sewage to the Liberty Borough collection system. The McKeesport Water Pollution Control Plant would then provide sewage treatment. Alternatively, preliminary designs for a new treatment plant for Lincoln Borough have been developed. Under either scenario, several malfunctioning septic systems located on Liberty Way, Taylor Street, McLean Drive, and the remaining homes on Virginia Drive would be eliminated.

The Patterson Hills Plan and homes on Lovedale Road with malfunctioning septic systems could be served by the Elizabeth Borough STP via the Elizabeth Township Sanitary Authority sewer system. Lincoln Borough has utilized nine of 17 Elizabeth Borough STP connections which were approved by the DEP in 1987. To date, efforts to secure public funding for Lincoln Borough sewer projects have been unsuccessful.

The Virginia Drive STP service area population of approximately 25 homes is projected to increase to approximately 72 homes if a new sewage treatment plant is constructed or sewage is conveyed to the Liberty Borough collection system via a pump station. Since the Virginia Drive STP is consistently unable to achieve the current organic loading and fecal coliform effluent limits, the plant will likely be eliminated in the near future.

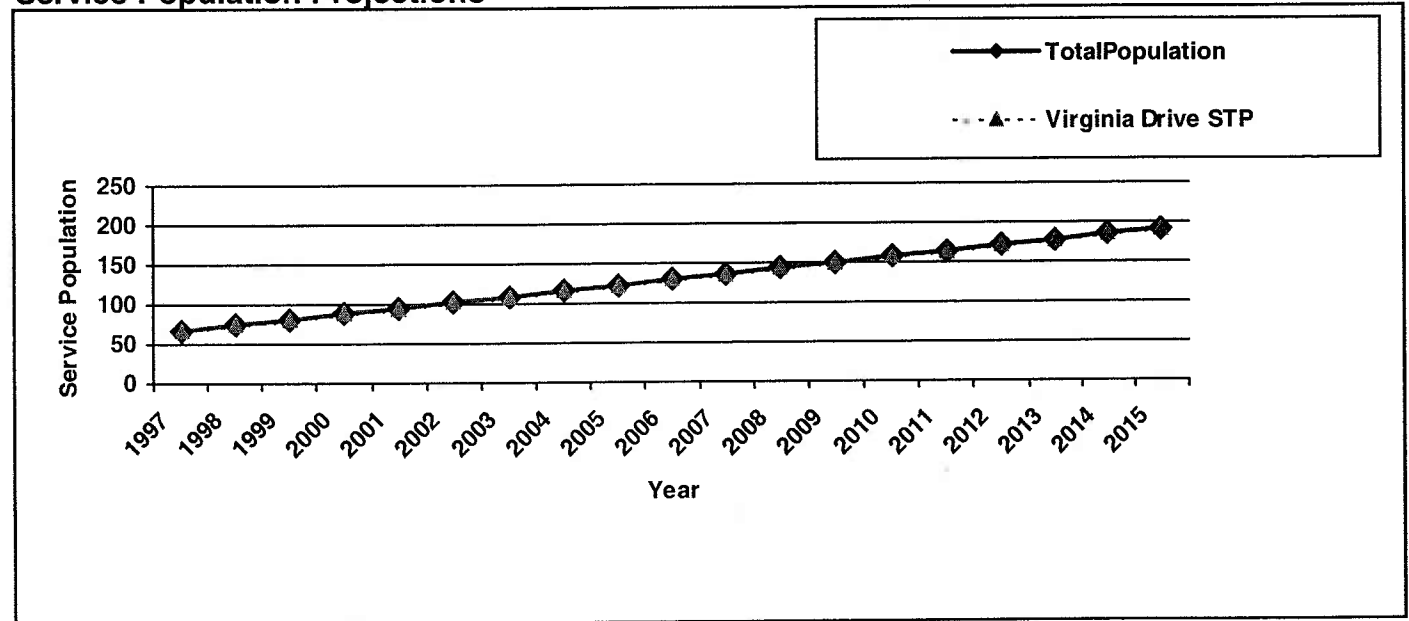
Service Area Summary

POTW Name	1997 Service Population	2015 Service Population	Municipality	Type Of Sewer System
Virginia Drive STP	69	73	Lincoln Borough	Separate

Treatment Process Summary

POTW Name	Equalization	Screening	Comminution	Grit Removal	Prechlorination	Primary Treatment	Activated Sludge	Extended Aeration	Contact Stabilization	Trickling Filter	Disinfection	Dechlorination	Filtration	Reaeration	Thickening	Aerobic Digestion	Anaerobic Digestion	Lime Stabilization	Composting	Thermal Processing	Dewatering	Land Application	Landfill	Incineration	Haul to other STP	Odor Control
Virginia Drive STP																										

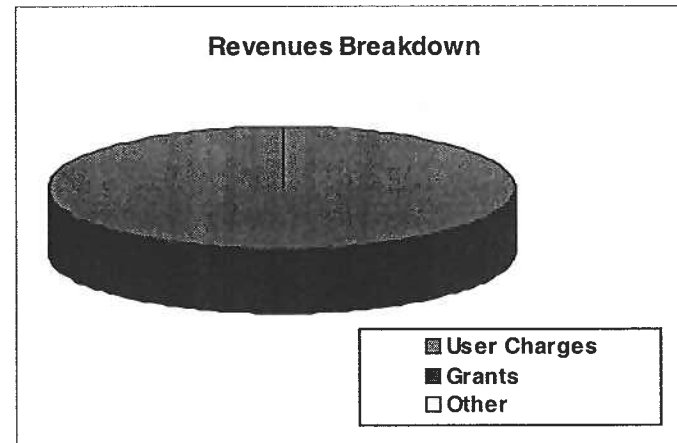
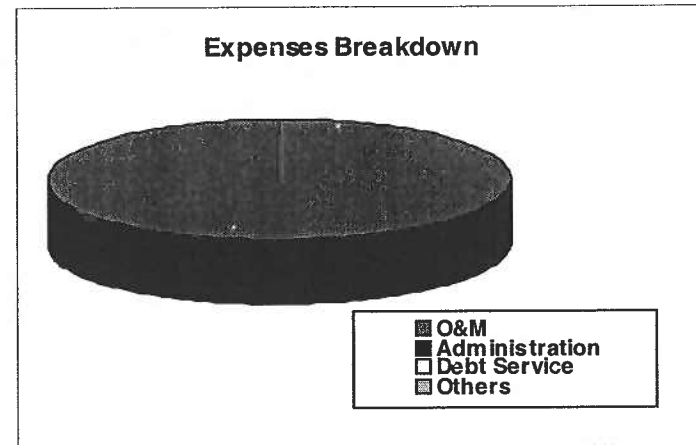
Service Population Projections



Borough of Lincoln

Sewer Use Ordinances

Municipality	Corrective Action Plan	Grease Trap Requirement	Industrial Pretreatment Program	Illicit Connection Inspection At Sale	Surcharge
Lincoln Borough	Yes for Eliz.Borough STP service area	No	No	No	No



Financial Information

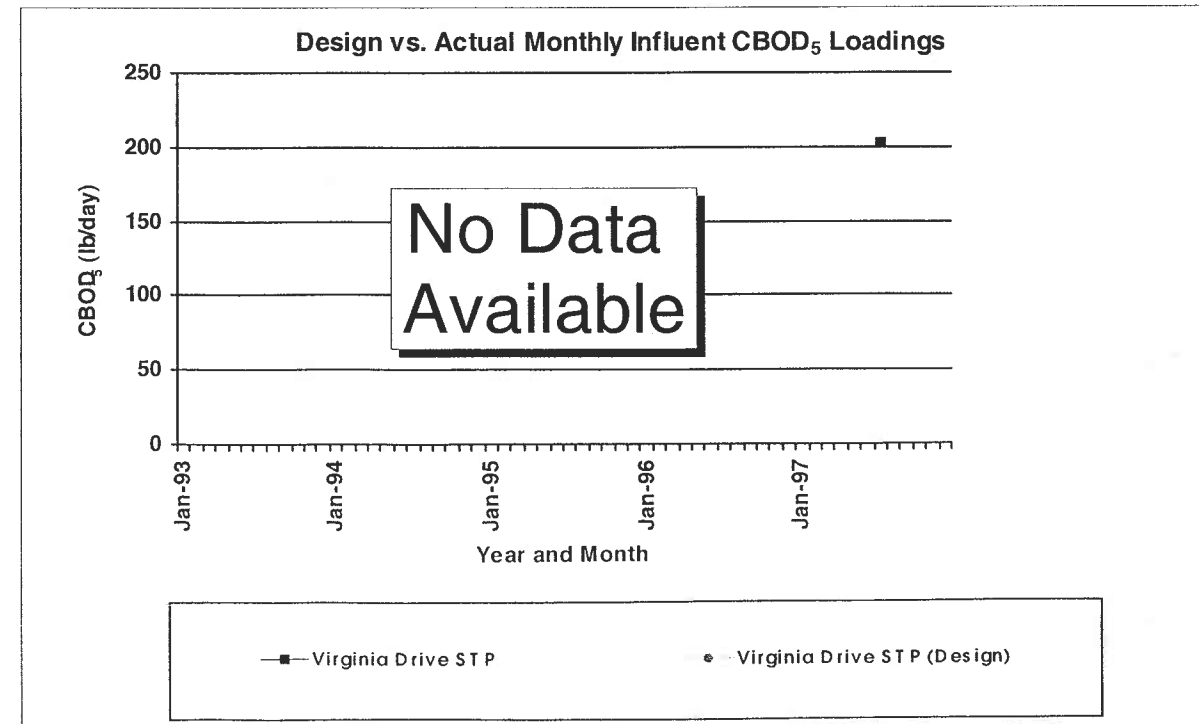
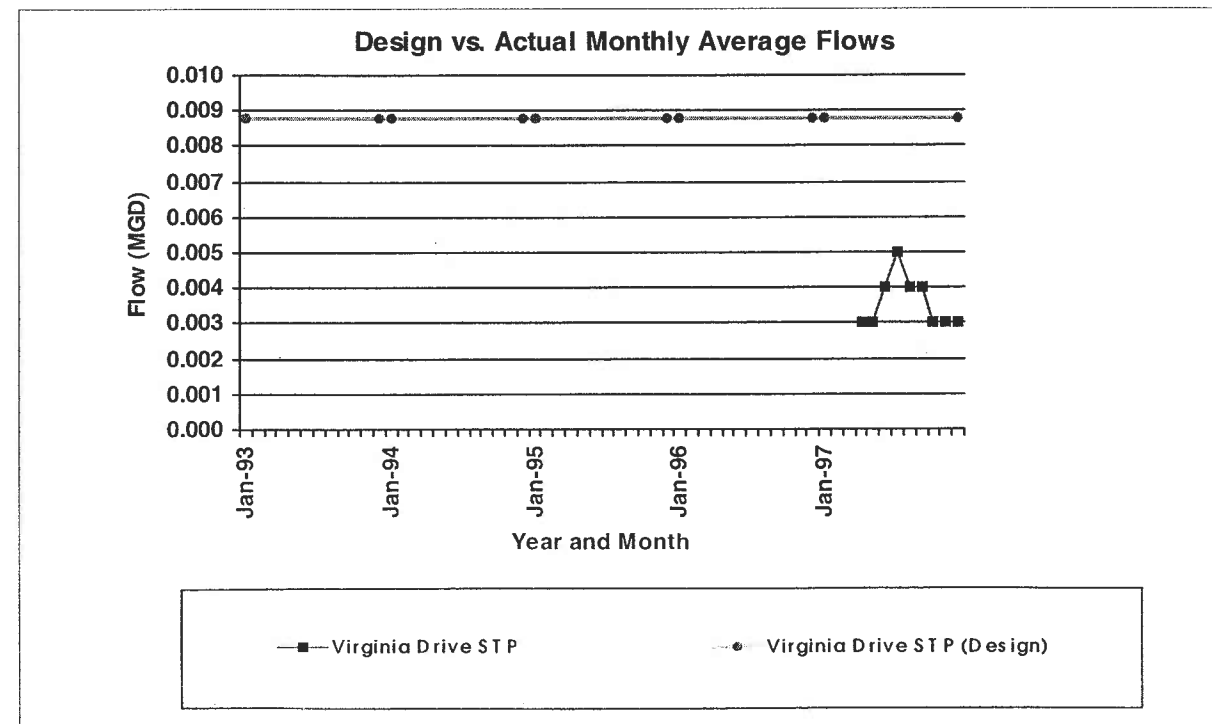
REVENUES		
User Charges:		\$3,383
Grants:		\$0
Other:		\$0
Total Revenues		\$3,383
EXPENSES		
Operations and Maintenance		\$4,314
Administration:		\$0
Debt Service:		\$0
Other:		\$0
Total Expenses		\$4,314
Surplus(Deficit):		(\$931)
Debt Service Coverage Ratio		
Information Source:	YEAR: 1995	Actual/Budgeted
Revenues	Local Government Financial Statistics (PaDCED)	Actual
Expenses	Local Government Financial Statistics (PaDCED)	Actual

Borough of Lincoln

1997 Plant Performance

Virginia Drive STP	Average Daily Flow (mgd)			CBOD ₅ (lb/Day)			TSS (lb/Day) Effluent			Effluent Ammonia Nitrogen (mg/l)			Effluent Coliform (Col./100ml)		
	Monthly	Summer	Winter	Average Effluent	Summer	Winter	Average	Summer	Winter	Average	Summer	Winter	Average Daily	Summer	Winter
January	nd			nd			nd			nd			tntc		
February	nd			nd			nd			nd			tntc		
March	nd			nd			nd			nd			tntc		
April	0.003			0.79	E		14.0	E		0.39			tntc		
May	0.003			1.23	E		0.7			0.46			tntc		
June	0.004			0.58			30.8	E		0.24			0.0		
July	0.005			0.97	E		5.4	E		0.58			tntc		
August	0.004			0.80	E		12.1	E		0.49			tntc		
September	0.004			0.89	E		65.3	E		0.00			tntc		
October	0.003			1.06	E		47.7	E		0.00			tntc		
November	0.003			0.36			35.4	E		0.27			tntc		
December	0.003			0.37			0.5			0.27			2.8		
Maximum	0.005	0.01	0.01	1.23	0.70	0.70	65.3	1.80	1.80	0.58	3.0	9.0	nd	200	2000
Max as % Limit	56%			176%			3629%			19%			nd		
Average	0.004			0.78			23.5			0.30			nd		
3 Month > Limit?	No														

Plant Loading Summary



Borough of Lincoln

Collection System Facilities

TREATMENT PLANT	Design Capacity (MGD)	Biological Treatment	Owner	Operator
Virginia Drive STP	0.0088		LINC	
<u>Pump Station</u>	<u>Peak Capacity</u>	<u>Avg Daily Flow</u>	<u>Owner</u>	<u>Operator</u>
None				
<u>Equalization Basin</u>	<u>Capacity</u>	<u>Location</u>	<u>Owner</u>	<u>Operator</u>
None				

Sewer Maintenance Information

<i>Service Community</i>	<i>Maintained By:</i>	<i>Mainten. Done:</i>	<i>Equipment Source</i>	<i>I/I Removal</i>	<i>I/I Flow Monitor</i>
Lincoln Borough	Lincoln Borough	As-needed	COG	<input type="checkbox"/>	<input type="checkbox"/>

Borough of Lincoln

Intermunicipal Agreements

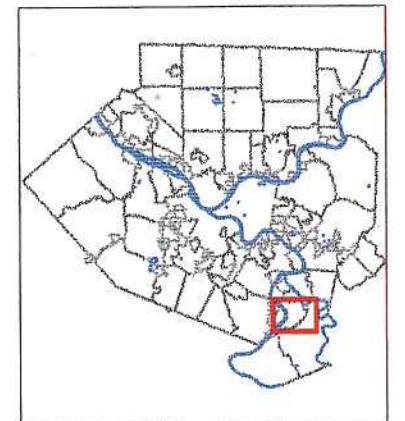
Agreement With	Date Enacted	Agreement Description	Expiration Date	Flow Limits (mgd)	Rate and Surcharge Provisions	Sampling Provisions	Flow Monitoring Provisions	Dispute Resol. Procedure	Basis of Cost Allocation
Elizabeth Borough Municipal Authority	Agreement not available	Sewage treatment service at the Elizabeth Borough STP							
Elizabeth Township Sanitary Authority	Agreement not available	Conveyance of sewage to the Elizabeth Borough STP by ETSA collection system							

Borough of Lincoln

Water Pollution Control Facility Service Area and Collection System

Allegheny County
Department of Economic Development

Allegheny County, PA



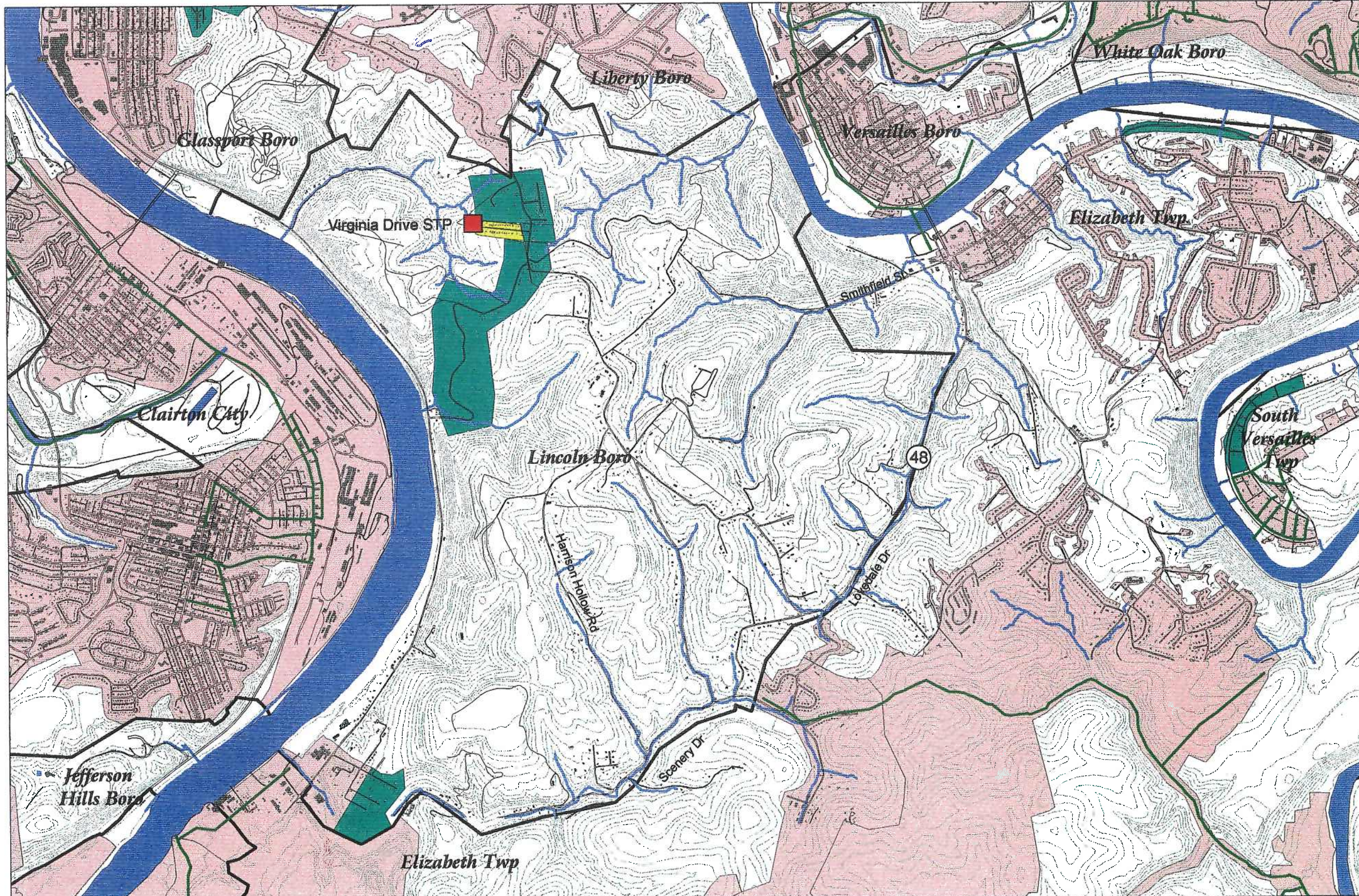
600 0 600 1200 Feet

- Public Treatment Facility
- Existing STP
- Municipal Boundary
- Major Road
- Contour
- Hydrologic Feature
- Building
- Collection System
- Separate
- On - Lot Problem Area
- Neighboring Service Area
- Neighboring Collection System



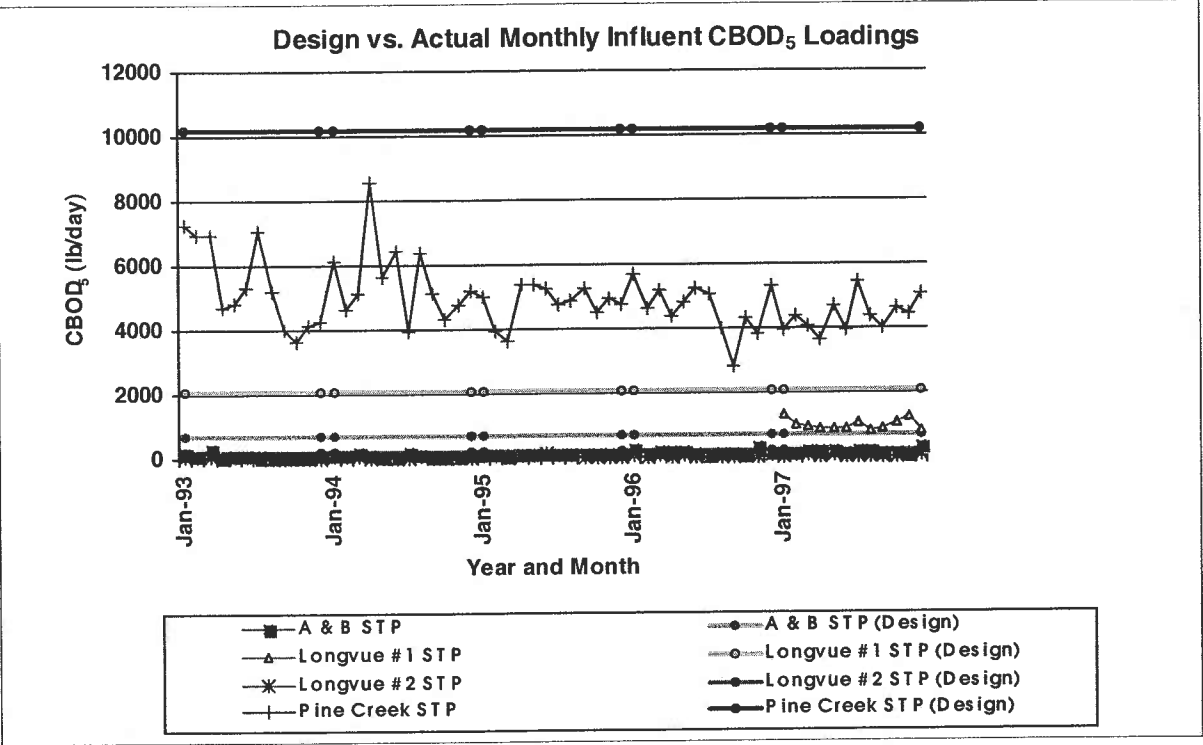
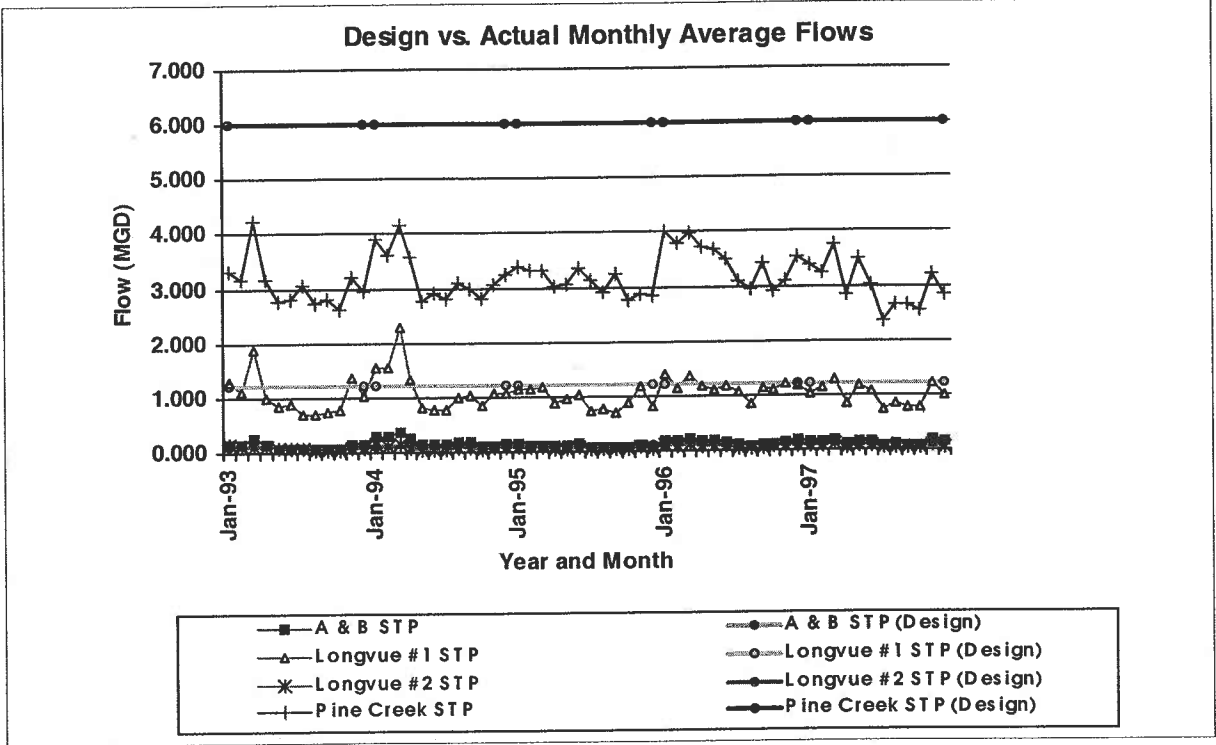
Not Field Verified

Source: Allegheny County Department of Economic Development



McCandless Township Sanitary Authority

Plant Loading Summary



McCandless Township Sanitary Authority

Collection System Facilities

TREATMENT PLANT	Design Capacity (MGD)	Biological Treatment	Owner	Operator
A & B STP		Extended Aeration	MTSA	MTSA
<u>Pump Station</u>	<u>Peak Capacity</u>	<u>Avg Daily Flow</u>	<u>Owner</u>	<u>Operator</u>
A & B			MTSA	MTSA
<u>Equalization Basin</u>	<u>Capacity</u>	<u>Location</u>	<u>Owner</u>	<u>Operator</u>
None				

TREATMENT PLANT	Design Capacity (MGD)	Biological Treatment	Owner	Operator
Longvue #1 STP	1.2	Extended Aeration	MTSA	MTSA
<u>Pump Station</u>	<u>Peak Capacity</u>	<u>Avg Daily Flow</u>	<u>Owner</u>	<u>Operator</u>
Briarwood No. 4 (Relief Station)	50 gpm	6 gpm	MTSA	MTSA
Busch	700 gpm	188 gpm	MTSA	MTSA
Dolphin Drive	200 gpm	28 gpm	MTSA	MTSA
Greybrooke No. 10	80 gpm	10 gpm	MTSA	MTSA
Hazlett (Relief Station)	350 gpm	163 gpm	MTSA	MTSA
<u>Equalization Basin</u>	<u>Capacity</u>	<u>Location</u>	<u>Owner</u>	<u>Operator</u>
None				

TREATMENT PLANT	Design Capacity (MGD)	Biological Treatment	Owner	Operator
Longvue #2 STP	0.1	Trickling Filters	MTSA	MTSA
<u>Pump Station</u>	<u>Peak Capacity</u>	<u>Avg Daily Flow</u>	<u>Owner</u>	<u>Operator</u>
None				
<u>Equalization Basin</u>	<u>Capacity</u>	<u>Location</u>	<u>Owner</u>	<u>Operator</u>
None				

TREATMENT PLANT	Design Capacity (MGD)	Biological Treatment	Owner	Operator
Pine Creek STP	6	Activated Sludge	MTSA	MTSA
<u>Pump Station</u>	<u>Peak Capacity</u>	<u>Avg Daily Flow</u>	<u>Owner</u>	<u>Operator</u>
Ashbury	100 gpm	12 gpm	MTSA	MTSA
Babcock	681 gpm	157 gpm	MTSA	MTSA
Borgata	500 gpm		MTSA	MTSA
Estates at the Villa	135 gpm		MTSA	MTSA
Karrington I	200 gpm	50 gpm	MTSA	MTSA
Karrington III	125 gpm	23 gpm	MTSA	MTSA
Peebles	430 gpm	93 gpm	MTSA	MTSA
Shenot	200 gpm	62 gpm	MTSA	MTSA
<u>Equalization Basin</u>	<u>Capacity</u>	<u>Location</u>	<u>Owner</u>	<u>Operator</u>
None				

Sewer Maintenance Information

<i>Service Community</i>	<i>Maintained By:</i>	<i>Mainten. Done:</i>	<i>Equipment Source</i>	<i>III Removal</i>	<i>III Flow Monitor</i>
Bradford Woods Borough	Bradford Woods Borough	No Data	No Data	<input type="checkbox"/>	<input type="checkbox"/>
Franklin Park Borough	Franklin Park Borough	No Data	No Data	<input type="checkbox"/>	<input type="checkbox"/>
Hampton Township	HTSA	As-needed	HTMA, COG	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Marshall Township	Marshall Township	No Data	No Data	<input type="checkbox"/>	<input type="checkbox"/>
McCandless, Town of	MTSA	Routine	Authority	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Pine Township	Pine Township	No Data	No Data	<input type="checkbox"/>	<input type="checkbox"/>
Ross Township	Ross Township	No Data	No Data	<input type="checkbox"/>	<input type="checkbox"/>

McCandless Township Sanitary Authority

Intermunicipal Agreements

Agreement With	Date Enacted	Agreement Description	Expiration Date	Flow Limits (mgd)	Rate and Surcharge Provisions	Sampling Provisions	Flow Monitoring Provisions	Dispute Resol. Procedure	Basis of Cost Allocation
Franklin Park Borough	03/21/97	Agreement that MTSA will provide treatment and disposal of sanitary sewage in the Fish Run drainage area	In effect as long as the Sewage Project is connected to the Pine Creek Interceptor Line or other interceptor lines or lines of MTSA	1.35 mgd				Arbitration	Fixed minimum monthly charge or measurement of water usage
Franklin Park Borough	11/13/63	Agreement that portions of Franklin situate in the Lowries Run drainage area drain into the McCandless or Ross sewer							Franklin Authority pays 71.32% to Ross Authority and 28.68% to McCandless Authority
Franklin Park Borough	11/11/70	Agreement that the sewage of the Pine Creek Drainage Area of Franklin Park Borough be treated and disposed of by MTSA							
Municipal Authority of the Township of Franklin	11/13/63	Agreement that portions of Franklin situate in the Lowries Run drainage area drain into the McCandless or Ross sewer							Franklin Authority pays 71.32% to Ross Authority and 28.68% to McCandless Authority
Ohio Township	03/06/69	Agreement that Ohio Township will pay Ross and McCandless Authority for use of their Lowries Run Sewer							Ohio Township shall pay Ross and McCandless the sum of \$72,900
Pine Township	08/08/98	1998 Service Agreement Supplement extending the sanitary sewage service area within the 1971 and 1976 agreements							
Pine Township	12/02/76	Agreement between the parties to increase the territory covered by the 1971 agreement							
Pine Township	02/01/71	Agreement that the McCandless Authority will service the area of Pine by incorporating the West Fork of the Pine Creek Drainage Area of Pine Township into the system of McCandless Authority							
Pine Township	09/04/97	MTSA agrees to provide treatment and disposal of sanitary sewage in the Montour Run drainage area and the Irwin Run drainage area in the North Fork Pine Creek Watershed of the Township of Pine	Agreement is effective as long as the Township Service Area is served by connection to the North Fork Pine Creek Interceptor Line unless terminated earlier by mutual agreement of the parties					Arbitration	Water usage
Pine Township Authority	08/08/98	1998 Service Agreement Supplement extending the sanitary sewage service area within the 1971 and 1976 agreements							
Pine Township Authority	09/04/97	MTSA agrees to provide treatment and disposal of sanitary sewage in the Montour Run drainage area and the Irwin Run drainage area in the North Fork Pine Creek Watershed of the Township of Pine	Agreement is effective as long as the Township Service Area is served by connection to the North Fork Pine Creek Interceptor Line unless terminated earlier by mutual agreement of the parties					Arbitration	Water usage
Pine Township Authority	02/01/71	Agreement that the McCandless Authority will service the area of Pine by incorporating the West Fork of the Pine Creek Drainage Area of Pine Township into the system of McCandless Authority							
Pine Township Authority	12/02/76	Agreement between the parties to increase the territory covered by the 1971 agreement							

McCandless Township Sanitary Authority

Intermunicipal Agreements

Agreement With	Date Enacted	Agreement Description	Expiration Date	Flow Limits (mgd)	Rate and Surcharge Provisions	Sampling Provisions	Flow Monitoring Provisions	Dispute Resol. Procedure	Basis of Cost Allocation
Ross Township	12/21/72	Agreement and Bill of Sale showing the sale of a sanitary trunk line sewer located in the Borough of Emsworth, Township of Kilbuck, Township of Ohio, and Township of Ross from Ross Authority to MTSA							
Ross Township	12/21/72	Agreement and Bill of Sale showing the sale of a sanitary trunk line sewer located in the Borough of Emsworth, Township of Kilbuck, Township of Ohio, and Township of Ross from Ross Authority to MTSA							
Ross Township	01/26/59	Agreement settles the dispute b/w the two municipalities pertaining to precise boundary line b/w the two municipalities. Agreement states that sewage service be extended to all portions of two municipalities located in Lowries Run Drainage Area.						Arbitration	
Ross Township Authority	12/21/72	Agreement and Bill of Sale showing the sale of a sanitary trunk line sewer located in the Borough of Emsworth, Township of Kilbuck, Township of Ohio, and Township of Ross from Ross Authority to MTSA							
Ross Township Authority	12/30/74	Agreement that West View will pay McCandless and Ross for use of their Lowries Run trunk sewer							West View shall pay Ross and McCandless the sum of \$3,553.73 for full use of facilities
Ross Township Authority	01/26/59	Agreement settles the dispute b/w the two municipalities pertaining to precise boundary line b/w the two municipalities. Agreement states that sewage service be extended to all portions of two municipalities located in Lowries Run Drainage Area.						Arbitration	
Ross Township Authority	11/13/63	Agreement that portions of Franklin situate in the Lowries Run drainage area drain into the McCandless or Ross sewer							Franklin Authority pays 71.32% to Ross Authority and 28.68% to McCandless Authority
Ross Township Authority	03/06/69	Agreement that Ohio Township will pay Ross and McCandless Authority for use of their Lowries Run Sewer							Ohio Township shall pay Ross and McCandless the sum of \$72,900
Township of McCandless	01/26/59	Agreement settles the dispute b/w the two municipalities pertaining to precise boundary line b/w the two municipalities. Agreement states that sewage service be extended to all portions of two municipalities located in Lowries Run Drainage Area.						Arbitration	
West View Borough	12/30/74	Agreement that West View will pay McCandless and Ross for use of their Lowries Run trunk sewer							West View shall pay Ross and McCandless the sum of \$3,553.73 for full use of facilities

McCandless Township Sanitary Authority

The McCandless Township Sanitary Authority (MTSA) is a treatment and collection authority serving approximately 14,000 customers in northern Allegheny County. MTSA owns and operates four wastewater treatment facilities and 14 pump stations, and is a major provider of wastewater treatment services in Allegheny County. The MTSA serves customers from the Town of McCandless, Bradford Woods, Franklin Park, Hampton, Marshall, Pine and Ross Townships. A five-member Board of Directors governs the MTSA and all board members reside in the Town of McCandless. MTSA has a staff of 43 employees – nine of which are certified operators. MTSA operates their main laboratory at the Pine Creek plant and has satellite labs at the other plants.

Pine Creek is the largest of the MTSA's plants serving 7,936 customers including all of Bradford Woods Borough, and portions of the Town of McCandless, Franklin Park Borough, and Hampton, Marshall and Pine Townships. The Pine Creek STP is permitted for an average daily flow of 6.0 mgd and is an activated sludge plant. It is permitted for a corresponding organic load of 10,200 lb CBOD₅/day. The average monthly flow to the plant in 1997 was 3.0 mgd, or 50 percent of its permitted capacity. The average monthly organic loading was 4,387 lb CBOD₅/day. The plant discharges to Pine Creek, a trout stocked stream, in Hampton Township.

The plant has additional capacity due to a recent plant expansion. With approximately 850 dwelling units in the planning or construction phase, growth is expected in the Pine Creek service area. Pine Creek's service area population of approximately 27,970 is projected to increase to approximately 39,700 by 2015. Based on the 2015 population increase, the hydraulic and organic loadings to the treatment plant are expected to increase by 42 percent. The hydraulic loading is projected to increase to approximately 4.3 mgd, and the organic loading is projected to increase to approximately 6,300 lb CBOD₅/day. Based on current wastewater characteristics, the hydraulic and organic loading capacities of the plant appear to be adequate for the projected average daily flow and loading conditions in 2015.

MTSA operates two belt filter presses at Pine Creek and has sufficient capacity to meet projected sludge loadings. Sludge from MTSA's plants - A & B, Longvue #1, and Longvue #2 - is hauled to the Pine Creek STP in liquid form for processing through the belt filter presses. The filter cake is disposed at the Y & S Landfill in Westmoreland County. There are eight pump stations on the Pine Creek system ranging in capacity from 100-GPM to 681-GPM. All stations are in good to excellent condition.

The Pine Creek collection system is a separate sanitary sewer system and ranges in diameter from eight inches to 42-inches. MTSA installed larger sewers to increase capacity and alleviate surcharging on several hydraulically restricted sections. In 1997, MTSA jet cleaned 90,000-LF and televised 2,200-LF of sewers in the Pine Creek system.

Longvue #1 STP, a 1.2-mgd activated sludge plant, serves approximately 1,800 customers in the southeastern portion of McCandless immediately adjacent to Ross Township. The service area is largely built-out and the plant is operating at approximately 80 percent of its permitted capacity on an average daily basis. In 1997, average monthly flows to Longvue #1 were 0.987 mgd. Longvue #1's average monthly organic loading was 978 lb CBOD₅/day which is at least 50 percent below its permit limit of 2,040 lb CBOD₅/day. Longvue #1 STP discharges to Little Pine Creek. At the time of the last NPDES permit renewal, DEP added an average monthly limit of 0.01 mg/l for total residual chlorine for this plant.

MTSA maintains five pump stations within the Longvue #1 collection system. Due to wet weather capacity limits, the MTSA is limited to 10 new taps per year in the Longvue #1 service area. To correct these problems, MTSA's Corrective Action Plan calls for the repair and replacement of trunk sewers and force mains, the upgrade and expansion of the Busch Pump Station, and the lining and repair of vitrified clay pipe lines and manholes. To permit future growth in the Longvue #1 service area, MTSA may divert flows from some of its large institutional customers to a different service area. Longvue #1's service area population of approximately 6,297 is projected to increase to approximately 8,100 by 2015. Based on the 2015 population increase, the hydraulic and organic loadings to the treatment plant are expected to increase by 28 percent. The average daily hydraulic loading is projected to increase to approximately 1.27 mgd, and the organic loading is projected to increase to approximately 1,300 lb CBOD₅/day. The current organic loading capacity of the plant appears to be adequate for the projected loading conditions in 2015. However, pending the potential for re-rating or flow reduction, the hydraulic loading capacity appears to be inadequate for the projected loading in 2015.

The A & B STP serves 592 customers in the southeastern corner of the Town of McCandless. The plant is an extended aeration facility and discharges to an unnamed tributary of Pine Creek. The plant is permitted for an average daily flow of 0.40 mgd and an organic load of 680 lb CBOD₅/day. In 1997, average daily flows and the annual average organic loading were consistently lower than the permitted capacity. The average monthly flow to the A & B STP in 1997 was 0.13 mgd. The average monthly organic loading was 160 lb CBOD₅/day. The A & B STP's service area population of approximately 2,108 is projected to increase to approximately 2,700 by 2015. Based on the 2015 population increase, the hydraulic and organic loadings to the treatment plant are expected to increase by 28 percent. The hydraulic loading is projected to increase to approximately 0.16 mgd, and the organic loading is projected to increase to approximately 200 lb CBOD₅/day. Based on current wastewater characteristics, the hydraulic and organic loading capacities of the plant appear to be adequate for projected average daily flow and loading conditions in 2015.

The A & B collection system is primarily 8-inch separate sanitary sewers, however, 1,100-LF of 8-inch gravity sewer line was recently replaced with 12-inch to add capacity. MTSA televised approximately 6,700-LF of sewer line in the A & B system during 1997. No sewer extensions are planned to the A & B plant.

Longvue #2 STP serves 237 customers in southern McCandless west of McKnight Road. Since there is no available land for development in the service area, the number of customers is expected to remain constant. Longvue #2 is situated in Ross Township and discharges to an unnamed tributary of Girty's Run. Originally constructed in 1946, the trickling filtration plant was recently refurbished. No sewer extensions are planned.

Longvue #2 STP is permitted for an average daily flow of 0.1 mgd and an organic load of 170 lb CBOD₅/day. In 1997, Longvue #2 received average daily flows of 0.055 mgd and average monthly organic loading of 31 lb CBOD₅/day. The Longvue #2 service area population of approximately 830 is projected to increase to approximately 1,100 by 2015. Based on the 2015 population increase, the hydraulic and organic loadings to the treatment plant are expected to increase by 27 percent. The hydraulic loading is projected to increase to approximately 0.07 mgd, and the organic loading is projected to increase to approximately 40 lb CBOD₅/day. Based on current wastewater characteristics, the hydraulic and organic loading capacities of the plant appear to be adequate for projected average daily flow and loading conditions in 2015.

MTSA owns and maintains the collection system in the Town of McCandless and performs virtually all of the maintenance, operations, and investigative functions on their system. MTSA also owns and maintains the interceptor sewers to the point of connection with its subscribing municipalities.

MTSA has implemented a preventive maintenance program for its system. Operational staff conducts inspections and performs maintenance tasks on an on-going basis. Visual inspections during jet cleaning operations, as well as television surveillance, are utilized to identify problem areas. Customers are also encouraged to call when they observe problems.

Daily inspections and routine maintenance is also performed at the 14 MTSA operated pump stations. And in-house maintenance crew is available to perform any special repairs at the pump stations.

The MTSA has an infiltration/inflow reduction program and uses portable weirs and battery operated recording flow meters to identify sources and establish flow trends from system segments. Smoke and dye testing are performed to identify illegal connections and special investigations are made when sewers lie in creek beds or areas with high water tables. Inspections are performed on all new sewer line extensions and new lateral connections. The MTSA is also conducting an infiltration/inflow reduction program in the Lowries Run drainage area tributary to the ALCOSAN treatment plant.

There are no industrial customers in any of the MTSA service areas. MTSA has adopted rules and regulations to protect the treatment and collection system from industrial waste.

McCandless Township Sanitary Authority

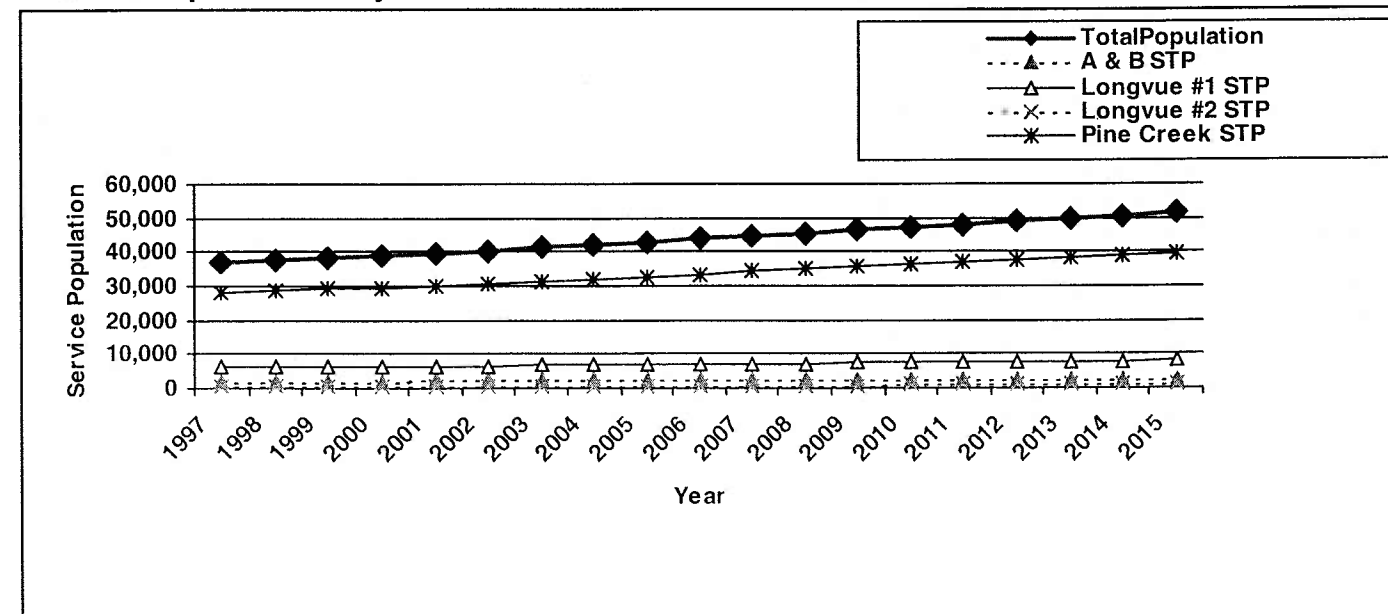
Service Area Summary

POTW Name	1997 Service Population	2015 Service Population	Municipality	Type Of Sewer System
A & B STP	2108	2704	McCandless, Town of	Separate
Longvue #1 STP	6297	8078	McCandless, Town of	Separate
Longvue #2 STP	830	1053	McCandless, Town of	Separate
Pine Creek STP	27970	39717	Ross Township	Separate
			Bradford Woods Borough	Separate
			Franklin Park Borough	Separate
			Hampton Township	Separate
			Marshall Township	Separate
			McCandless, Town of	Separate
			Pine Township	Separate

Treatment Process Summary

POTW Name	Equalization	Screening	Comminution	Grit Removal	Prechlorination	Primary Treatment	Activated Sludge	Extended Aeration	Contact Stabilization	Trickling Filter	Disinfection	Dechlorination	Filtration	Regeneration	Thickening	Aerobic Digestion	Anaerobic Digestion	Line Stabilization	Composting	Thermal Processing	Dewatering	Land Application	Landfill	Incineration	Haul to other STP	Odor Control
A & B STP		■					■																			■
Longvue #1 STP		■					■																			■
Longvue #2 STP		■			■				■	■																■
Pine Creek STP		■			■	■																				■

Service Population Projections



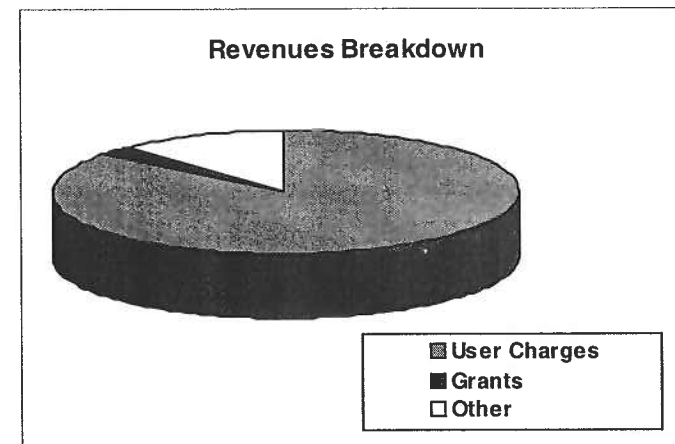
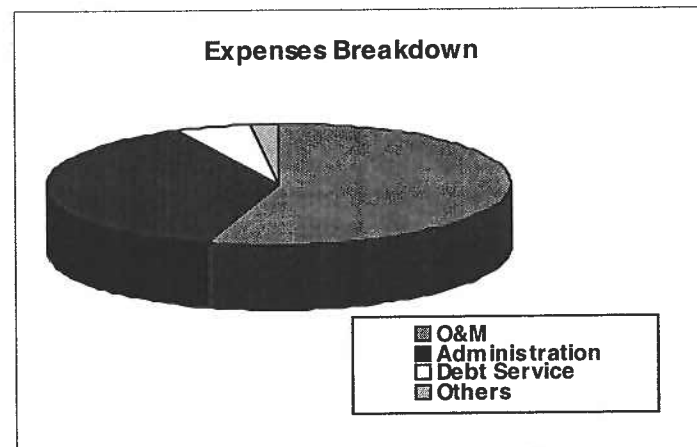
McCandless Township Sanitary Authority

Sewer Use Ordinances

Municipality	Corrective Action Plan	Grease Trap Requirement	Industrial Pretreatment Program	Illicit Connection Inspection At Sale	Surcharge
Bradford Woods Borough			ALCOSAN		
Franklin Park Borough	Yes		ALCOSAN	No	
Hampton Township	Completed	No data	No, no industrial waste discharges in area	Yes, tested at time of resale	
Marshall Township					
McCandless, Town of	Yes		ALCOSAN	No	
Pine Township					
Ross Township	Yes		ALCOSAN	Yes	

Financial Information

REVENUES		
User Charges:		\$4,981,260
Grants:		\$159,996
Other:		\$673,057
Total Revenues		\$5,814,313
EXPENSES		
Operations and Maintenance		\$2,735,500
Administration:		\$1,865,011
Debt Service:		\$274,540
Other:		\$90,361
Total Expenses		\$4,965,412
Surplus(Deficit):		\$848,901
Debt Service Coverage Ratio		4.09
YEAR:	1997	Actual/Budgeted
Information Source:		
Revenues	MTSA Financial Report (Carbis Walker)	Actual
Expenses	MTSA Financial Report (Carbis Walker)	Actual

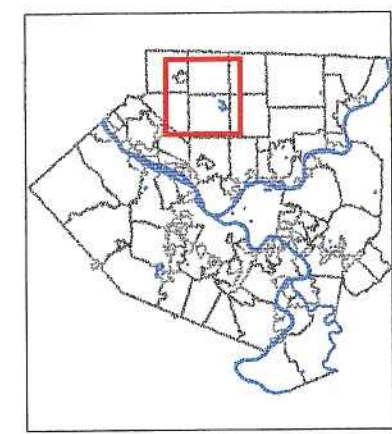


McCandless Township Sanitary Authority

Water Pollution Control Facilities Service Areas and Collection Systems

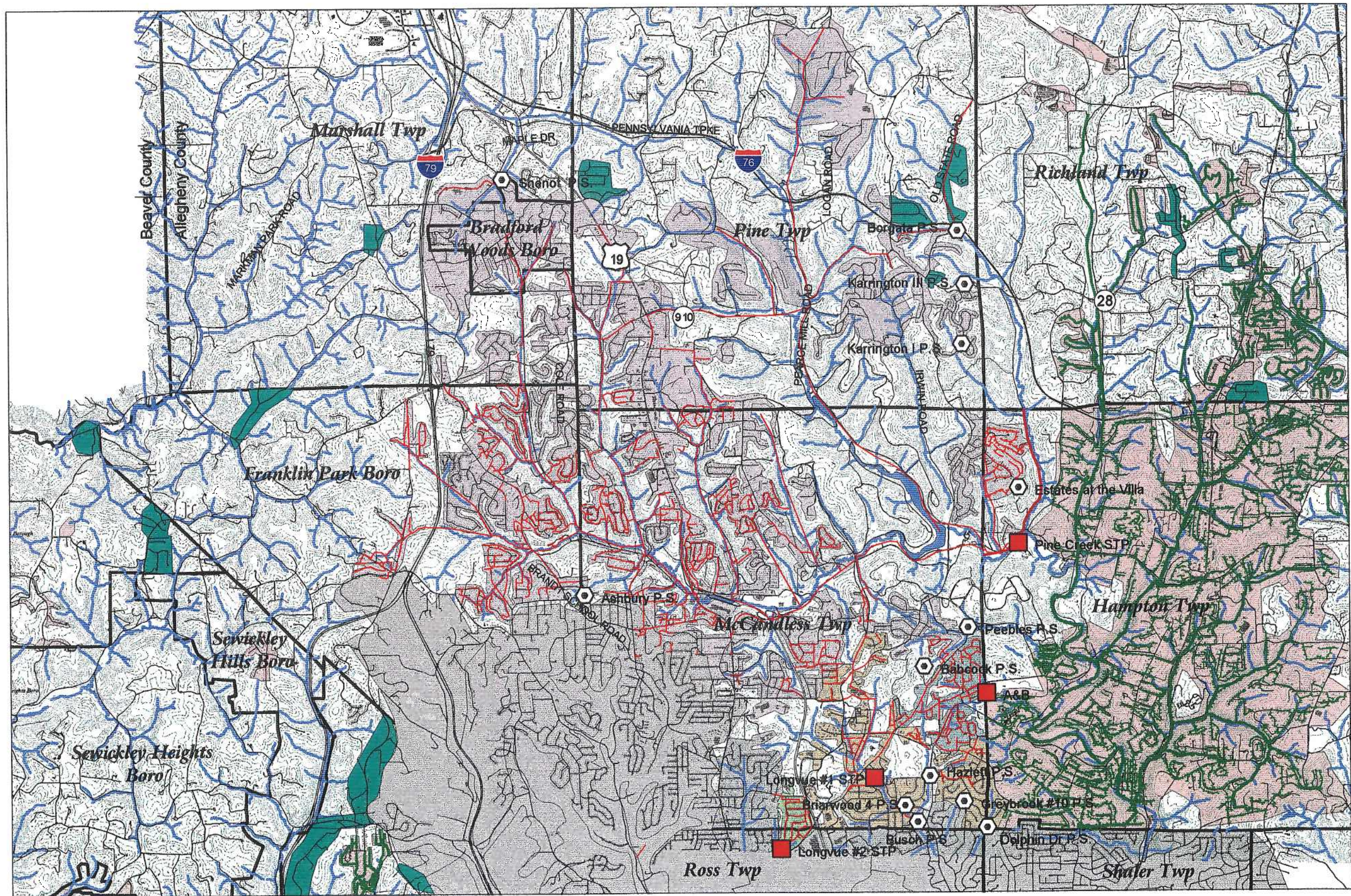
Allegheny County Department of Economic Development

Allegheny County, PA



2000 0 2000 Feet

- Public Treatment Facility
 - Existing STP
 - Pump Station
 - Municipal Boundary
 - Major Road
 - Contour
 - Hydrologic Feature
 - Building
 - Town of McCandless Collection System
 - A & B STP Service Area Separate System
 - Longvue #1 STP Service Area Separate System
 - Longvue #2 STP Service Area Separate System
 - Pine Creek STP Service Area Separate System
 - On-Lot Problem Area
 - Pipe Type
 - Collector
 - Force Main
 - Trunk
 - Neighboring Service Area
 - Neighboring Collection System
 - ALCOSAN Service Area
 - Not Field Verified
- Source: McCandless Township Sanitary Authority
Allegheny County Health Department



The Municipal Authority of the City of McKeesport

The Municipal Authority of the City of McKeesport (MACM) is a sewage treatment and collection agency for customers from the City of McKeesport and the Boroughs of White Oak, Versailles, Liberty, Port Vue, and portions of the Boroughs of Glassport and East McKeesport and Elizabeth Township. Sewage is conveyed to and treated at the McKeesport Water Pollution Control Plant (WPCP), which discharges to the Monongahela (Mon) River. A seven member Board manages MACM and is appointed by the City of McKeesport.

The original 9.5-mgd treatment plant, built in 1959, was designed to achieve primary treatment. In 1977, secondary treatment facilities were added to the plant, increasing the treatment plant capacity to 11.5 mgd, which is the current permitted capacity. In 1996, variable frequency drives (VFDs) were added to the secondary screw pumps, resulting in a secondary treatment capacity of 16 mgd. Hydraulically, the plant can receive 29 mgd. Sludge from the Elizabeth Borough STP and the Buena Vista STP is accepted at the WPCP for treatment and disposal. The Virginia Drive STP and Coulter STP utilize laboratory facilities at the WPCP for NPDES permit testing. The current permitted organic loading for the treatment plant is 19,950 lb CBOD₅/day. In 1997, the average hydraulic and organic loadings to the treatment plant were 9.3 mgd and 6,199 lb CBOD₅/day, respectively.

MACM owns and maintains the McKeesport WPCP, approximately seven miles of interceptor lines, 31 regulator chambers, two bypass structures, sewer lines within the City of McKeesport, and five pump stations associated with the collection system (including one pump station at the treatment plant). Maintenance is performed on the collection system on an as-needed basis utilizing the Authority-owned vector truck, and the regulator chambers and bypass structures are monitored for frequency, duration, and estimated volumes of the combined sewer overflows. The Upper Mon, Lower Mon, and Youghiogheny (Yough) interceptors are combined collectors. To date, the System Inventory and Characterization and System Hydraulic Characterization have been completed as part of the CSO Compliance Schedule set forth in the May 15, 1996 NPDES permit. Documentation of Implementation of the Nine Minimum Controls is on going.

The Long Run interceptor is a sanitary collector and MACM maintains this interceptor up to the White Oak Borough municipal boundary. A Corrective Action Plan (CAP) exists for the Long Run watershed service area. White Oak Borough and North Versailles Township have dye-testing programs to identify illicit downspout and roof drain connections. A permanent flow meter was installed at the Long Run Pump Station, and a portable flow meter was installed on the bypass of the same pump station. The entire length of the Long Run interceptor within the City of McKeesport was televised to evaluate the pipe condition and identify sources of infiltration and inflow (I/I). Debris accumulations identified by television inspection were cleaned with the Authority's vector truck. MACM is currently monitoring the Yough interceptor flow, as a result of basement flooding along Walnut Street during wet weather. Sanitary/storm sewer separation along Walnut Street and Eden Park Boulevard to reduce flow to the Long Run Pump Station is currently being designed. A reduction in I/I has been realized as a result of these efforts.

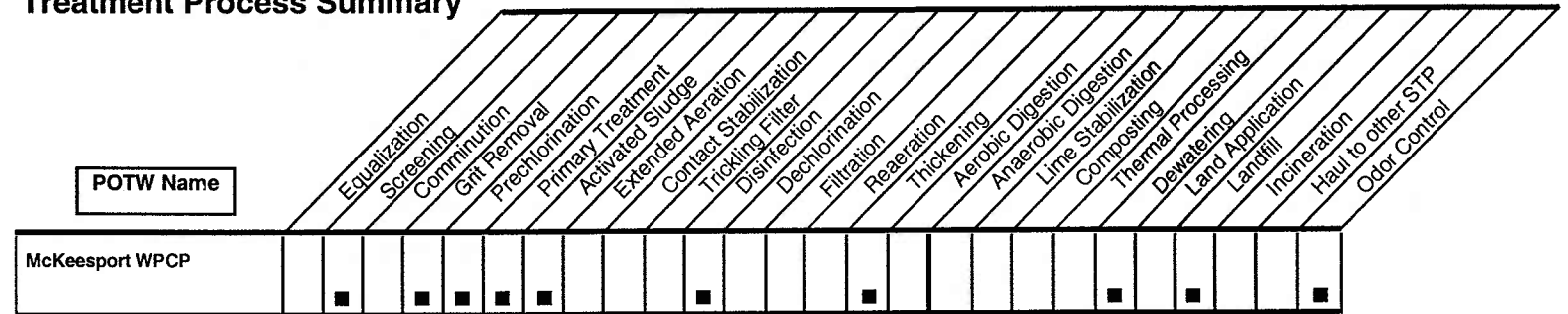
The Army Corp of Engineers' (ACOE) capital improvement project for the Mon River Lock/Dam system will effect the Authority's CSO regulators and outfalls. Elimination of Lock and Dam #2 will raise the Mon River elevation approximately five feet. The McKeesport portion of this project will require relocation of the effected outfalls and interceptors to a higher elevation. In 1997, the ACOE received Federal funding for the McKeesport portion of this project scheduled to begin in 2001. The collection systems in Liberty Borough, White Oak Borough, North Versailles Township, Versailles Borough, East McKeesport Borough, Elizabeth Township, and the contributing portion of Glassport Borough are sanitary. The Borough of Port Vue has a combined collection system. Each municipality is responsible for the inspection and maintenance of their collection system and any associated pump stations.

MACM service area population of approximately 51,354 is projected to increase to approximately 56,100 by 2015. Based on the 2015 population increase, the hydraulic and organic loadings to the treatment plant are expected to increase by 8.5 percent. The average daily hydraulic loading is projected to increase to approximately 10.2 mgd, and the organic loading is projected to increase to approximately 6,800 lb CBOD₅/day. The hydraulic and organic loading capacities of the plant appear to be adequate for projected average daily flow and loading conditions in 2015.

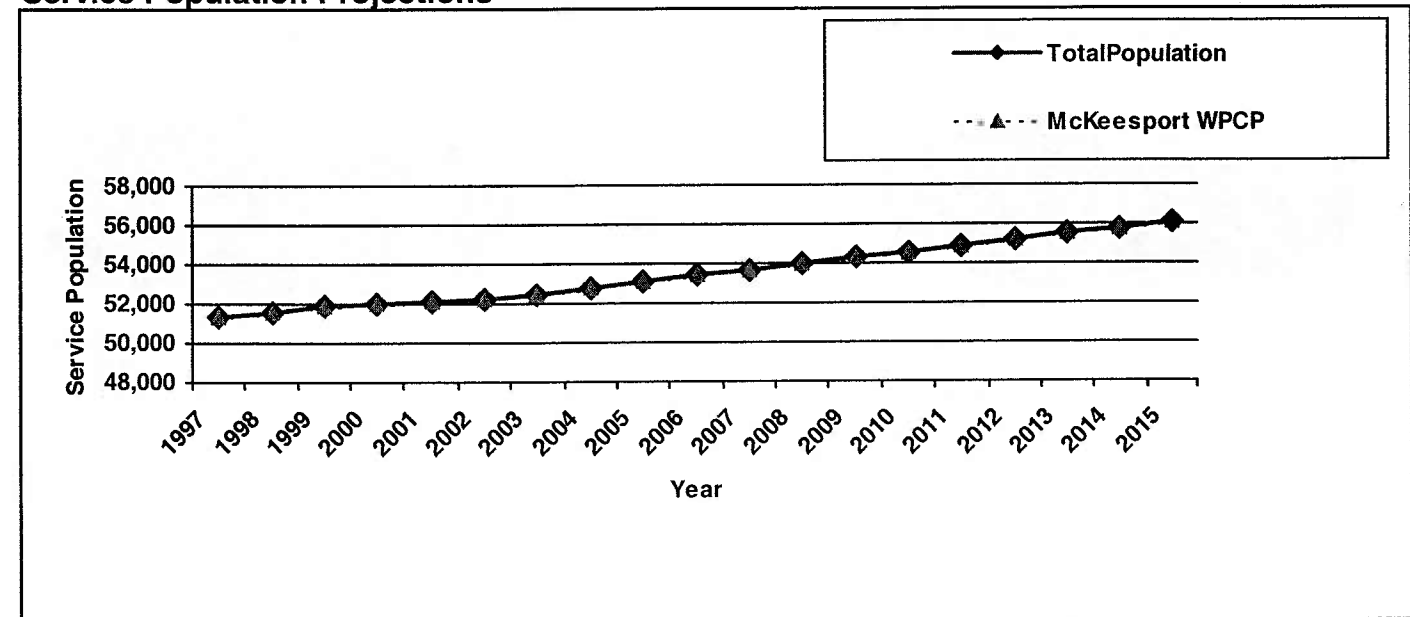
Service Area Summary

POTW Name	1997 Service Population	2015 Service Population	Municipality	Type Of Sewer System
McKeesport WPCP	51354	56136	East McKeesport Borough	Separate
			Elizabeth Township	Separate
			Glassport Borough	Separate
			Liberty Borough	Separate
			McKeesport, City of	Combined / Separate
			North Versailles Township	Separate
			Portvue Borough	Combined
			Versailles Borough	Separate
			White Oak Borough	Separate

Treatment Process Summary



Service Population Projections



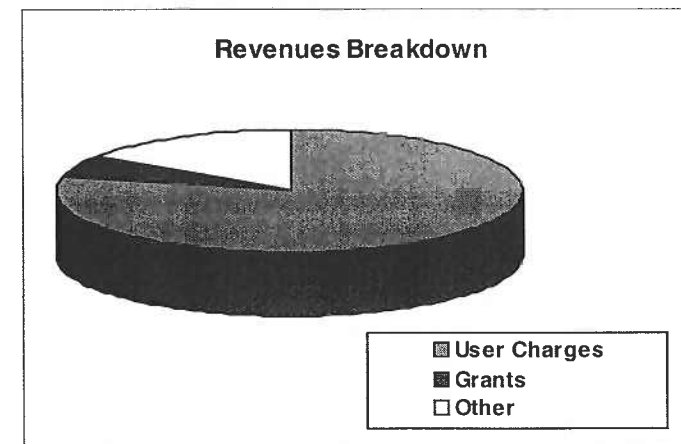
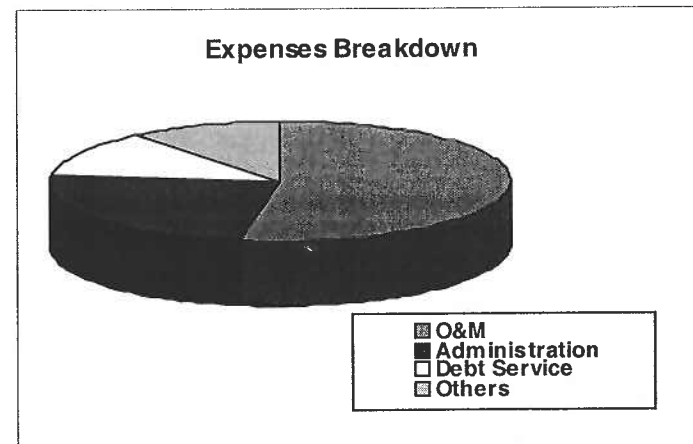
The Municipal Authority of the City of McKeesport

Sewer Use Ordinances

Municipality	Corrective Action Plan	Grease Trap Requirement	Industrial Pretreatment Program	Illicit Connection Inspection At Sale	Surcharge
East McKeesport Borough	No		ALCOSAN	No	
Elizabeth Township	Yes, for Eliz. Boro. STP		Yes, McKeesport Auth. pretreatment program	No	
Glassport Borough	Yes	No	Yes, McKeesport Auth. pretreatment plan	No	
Liberty Borough	No		Yes, McKeesport Authority pretreatment plan		
McKeesport, City of	Yes, for Long Run Watershed	No	Yes, McKeesport Authority pretreatment plan		
North Versailles Township	Yes, for Long Run Watershed	No	Yes, McKeesport Auth. pretreatment program	Yes, dye testing	
Portvue Borough	No		Yes, adopted McKeesport Authority pretreatment program		
Versailles Borough	No		Yes, McKeesport Auth. pretreatment plan		
White Oak Borough	Yes, for Long Run Watershed		Yes, McKeesport Auth. pretreatment plan	Yes	

Financial Information

REVENUES				
User Charges:			\$2,183,350	
Grants:			\$165,880	
Other:			\$429,653	
Total Revenues			\$2,778,883	
EXPENSES				
Operations and Maintenance			\$1,469,500	
Administration:			\$668,090	
Debt Service:			\$343,000	
Other:			\$298,293	
Total Expenses			\$2,778,883	
Surplus(Deficit):			\$0	
Debt Service Coverage Ratio			1.00	
Information Source:		YEAR:	1998	Actual/ Budgeted
Revenues	McKeesport Authority Annual Report (KLH Eng.)			Budgeted
Expenses	McKeesport Authority Annual Report			Budgeted

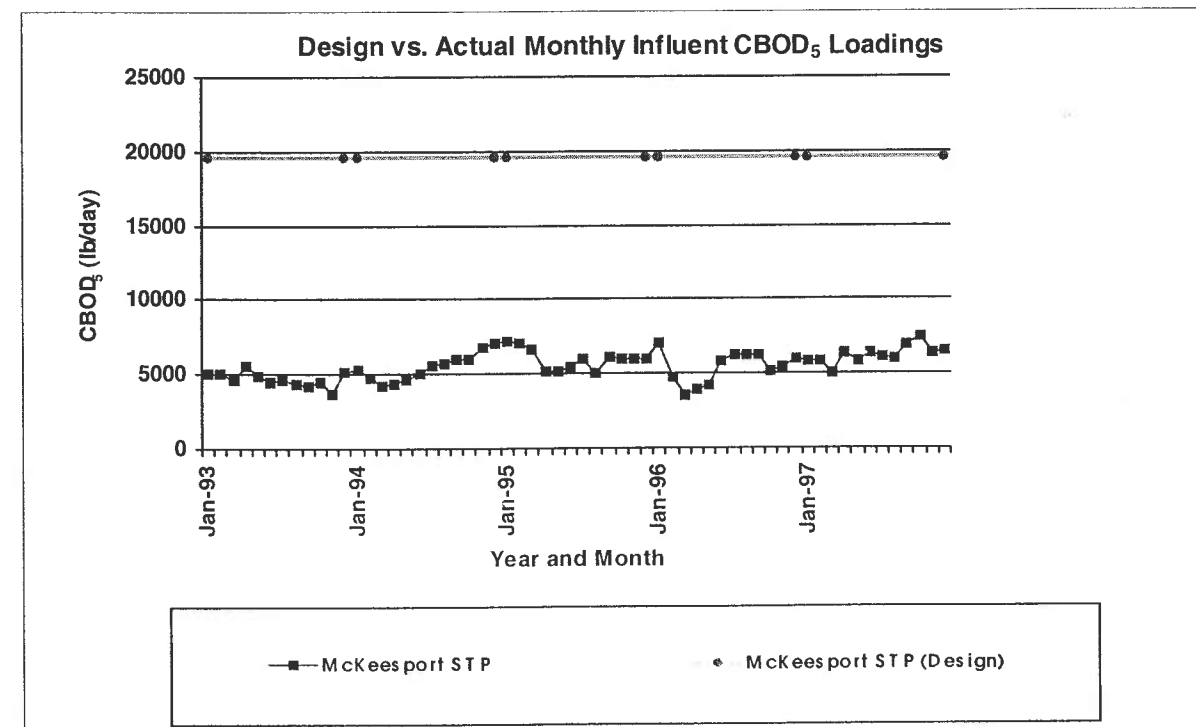
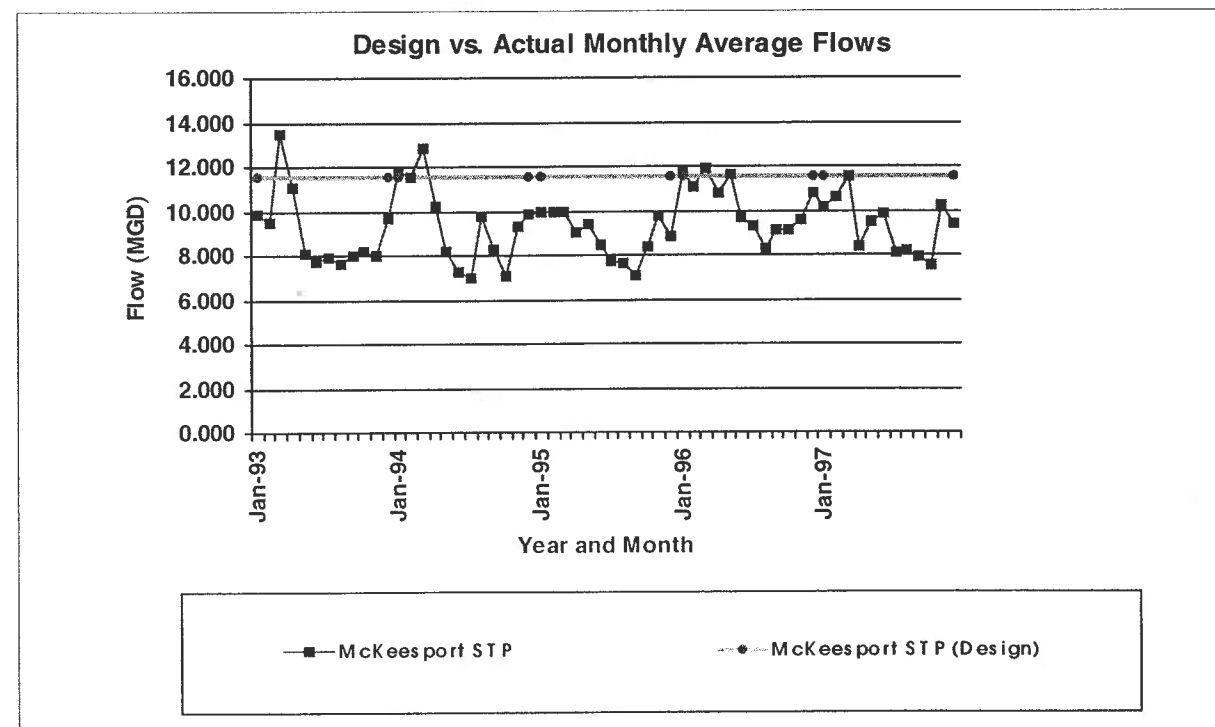


The Municipal Authority of the City of McKeesport

1997 Plant Performance

McKeesport WPCP	Average Daily Flow (mgd)			CBOD ₅ (lb/Day)			TSS (lb/Day) Effluent			Effluent Coliform (Col/100ml)				
	Monthly	Summer	Winter	Monthly Influent	Average Effluent	% Removal	Summer	Winter	Average	Summer	Winter	Average Daily	Summer	Winter
January	10.1			5,840	505	91%			590			21		
February	10.6			5,800	884	85%			619			56		
March	11.5			5,010	863	83%			575			62		
April	8.4			6,334	701	89%			350			17		
May	9.5			5,794	560	90%			320			50		
June	9.9			6,383	526	92%			239			8		
July	8.1			6,055	78	99%			190			3		
August	8.2			5,993	405	94%			235			29		
September	7.9			6,873	380	92%			208			5		
October	7.5			7,416	534	93%			213			6		
November	10.2			6,321	552	91%			336			22		
December	9.4			6,572	541	87%			559			26		
Maximum	11.5	11.5	11.5		884		2,397	2,397	619	2877	2877	62	200	2000
Max as % Limit	100%				37%				22%			31%		
Average	9.3				544				370			25		
3 Month > Limit?	No													

Plant Loading Summary



The Municipal Authority of the City of McKeesport

Collection System Facilities

TREATMENT PLANT	Design Capacity (MGD)	Biological Treatment	Owner	Operator
McKeesport WPCP	11.5	Activated Sludge	MACM	MACM
<u>Pump Station</u>	<u>Peak Capacity</u>	<u>Avg Daily Flow</u>	<u>Owner</u>	<u>Operator</u>
28th St.			MACM	MACM
Boston	4.1 mgd	1 mgd	ETSA	ETSA
Cliff St.			MACM	MACM
Glenn Ave.	50 gpm		Port Vue B.	Port Vue B.
Long Run			MACM	MACM
Lower Center St.	30 gpm		Versailles B.	Versailles B.
Muse Lane			White Oak B.	White Oak B.
Perry Street Ejector			MACM	MACM
River Rd.	0.69 mgd	0.117 mgd	Liberty B.	Liberty B.
Upper Center St.	50 gpm		Versailles B.	Versailles B.
<u>Equalization Basin</u>	<u>Capacity</u>	<u>Location</u>	<u>Owner</u>	<u>Operator</u>
None				

Sewer Maintenance Information

<i>Service Community</i>	<i>Maintained By:</i>	<i>Mainten. Done:</i>	<i>Equipment Source</i>	<i>I/I Removal</i>	<i>I/I Flow Monitor</i>
East McKeesport Borough	East McKeesport Boro	As-needed	No Data	<input type="checkbox"/>	<input type="checkbox"/>
Elizabeth Township	ETSA, Contractor	As-needed	Authority, COG	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Glassport Borough	Glassport Borough	As-needed	Street Dept., COG	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Liberty Borough	Liberty Borough	As-needed	COG	<input type="checkbox"/>	<input type="checkbox"/>
McKeesport, City of	MACM	As-needed	Authority	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
North Versailles Township	North Versailles Township	As-needed	Authority	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Portvue Borough	Portvue Borough	Periodic	COG	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Versailles Borough	Versailles Borough	No Data	No Data	<input type="checkbox"/>	<input type="checkbox"/>
White Oak Borough	White Oak Borough Autho	Routine	White Oak Borough Authorit	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

The Municipal Authority of the City of McKeesport

Intermunicipal Agreements

Agreement With	Date Enacted	Agreement Description	Expiration Date	Flow Limits (mgd)	Rate and Surcharge Provisions	Sampling Provisions	Flow Monitoring Provisions	Dispute Resol. Procedure	Basis of Cost Allocation
Borough of Glassport	12/14/79	Agreement states that the Borough of Glassport construct the necessary sewers, pumping stations, and treatment works to collect and convey sewage to the City of McKeesport for treatment	Until date of expiration of the legal existence of the Authority) or until the expiration of one caleneder year following the payment in full of all bonds	None		Required for industrial customers	None		Costs are allocated based on water usage
City of McKeesport	04/21/59	Appendix A stating that the City of McKeesport discontinue the discharge of untreated sewage into waters and to construct the necessary sewers, pumping stations, and treatment works to collect and convey sewage to a site for treatment	Until date of expiration of the legal existence of the Authority or until the expiration of one caleneder year following the payment in full of all bonds	None		Required for industrial customers	None		Costs are allocated based on water usage
East McKeesport, Borough of	02/12/73	Agreement states that the Borough of East McKeesport construct the necessary sewers, pumping stations, and treatment works to collect and convey sewage to the City of McKeesport for treatment	Until date of expiration of the legal existence of the Authority) or until the expiration of one caleneder year following the payment in full of all bonds	None		Required for industrial customers	None		Costs are allocated based on water usage
Elizabeth, Township of	02/15/60	Modification to original agreement stating that paragraphs 1 and 2 on page 2 be deleted and paragraph M on page 7 be rescinded	Shall remain in force for a period of 10 years from the date the Authority of the City of McKeesport begins to operate its sewage disposal plant						
Elizabeth, Township of	02/15/60	Agreement states that the Township of Elizabeth construct the necessary sewers, pumping stations, and treatment works to collect and convey sewage to the City of McKeesport for treatment	Until date of expiration of the legal existence of the Authority) or until the expiration of one caleneder year following the payment in full of all bonds	None		Required for industrial customers	None		Costs are allocated based on water usage
Liberty, Borough of	06/22/61	Agreement states that the Borough of Liberty construct the necessary sewers, pumping stations, and treatment works to collect and convey sewage to the City of McKeesport for treatment	Until date of expiration of the legal existence of the Authority) or until the expiration of one caleneder year following the payment in full of all bonds	None		Required for industrial customers	None		Costs are allocated based on water usage
McKeesport, City of	12/29/49	Agreement states that the City of McKeesport discontinue the discharge of untreated sewage into waters and to construct the necessary sewers, pumping stations, and treatment works to collect and convey sewage to a site for treatment	Until 1/1/90 (or other date of expiration of the legal existence of the Authority) or until the expiration of one caleneder year following the payment in full of all bonds	None		Required for industrial customers	None		Costs are allocated based on water usage
North Versailles, Township of	04/06/53	Agreement states that the Township of North Versailles construct the necessary sewers, pumping stations, and treatment works to collect and convey sewage to the City of McKeesport for treatment	Until date of expiration of the legal existence of the Authority) or until the expiration of one caleneder year following the payment in full of all bonds	None		Required for industrial customers	None		Costs are allocated based on water usage
Port Vue, Borough of	09/04/62	Agreement states that the Authority accepts the sum of \$13,014.94 from the Borough of Port Vue for the treatment of sewage in the year of 1961							
Port Vue, Borough of	05/03/64	Modification to original agreement stating that the Authority will pay 95.2% of the total sewage service charges	Will be in effect until the Borough of Port Vue produces sufficient sewer revenues in order to make the payments						
Port Vue, Borough of	03/06/59	Agreement states that the Borough of Port Vue construct the necessary sewers, pumping stations, and treatment works to collect and convey sewage to the City of McKeesport for treatment	Until date of expiration of the legal existence of the Authority) or until the expiration of one caleneder year following the payment in full of all bonds	None		Required for industrial customers	None		Costs are allocated based on water usage
Versailles, Borough of	07/13/53	Changes to original agreement that modify Sections G and H							
Versailles, Borough of	03/09/64	Modification to original agreement stating that the Authority will pay 95.2% of the total sewage service charges	Will be in effect until the Borough of Versailles produces sufficient sewer revenues in order to make the payments						

The Municipal Authority of the City of McKeesport

Intermunicipal Agreements

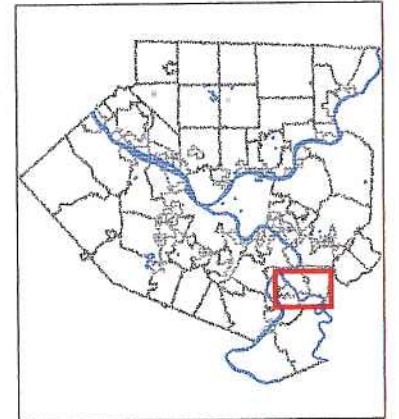
Agreement With	Date Enacted	Agreement Description	Expiration Date	Flow Limits (mgd)	Rate and Surcharge Provisions	Sampling Provisions	Flow Monitoring Provisions	Dispute Resol. Procedure	Basis of Cost Allocation
Versailles, Borough of	11/12/51	Agreement states that the Borough of Versailles construct the necessary sewers, pumping stations, and treatment works to collect and convey sewage to the City of McKeesport for treatment	Until date of expiration of the legal existence of the Authority) or until the expiration of one caleneder year following the payment in full of all bonds	None		Required for industrial customers	None		Costs are allocated based on water usage
White Oak, Borough of	06/03/58	Agreement states that the Borough of White Oak construct the necessary sewers, pumping stations, and treatment works to collect and convey sewage to the City of McKeesport for treatment	Until date of expiration of the legal existence of the Authority) or until the expiration of one caleneder year following the payment in full of all bonds	None		Required for industrial customers	None		Costs are allocated based on water usage

Municipal Authority of the City of McKeesport

Water Pollution Control Facility Service Area and Collection System

Allegheny County
Department of Economic Development

Allegheny County, PA

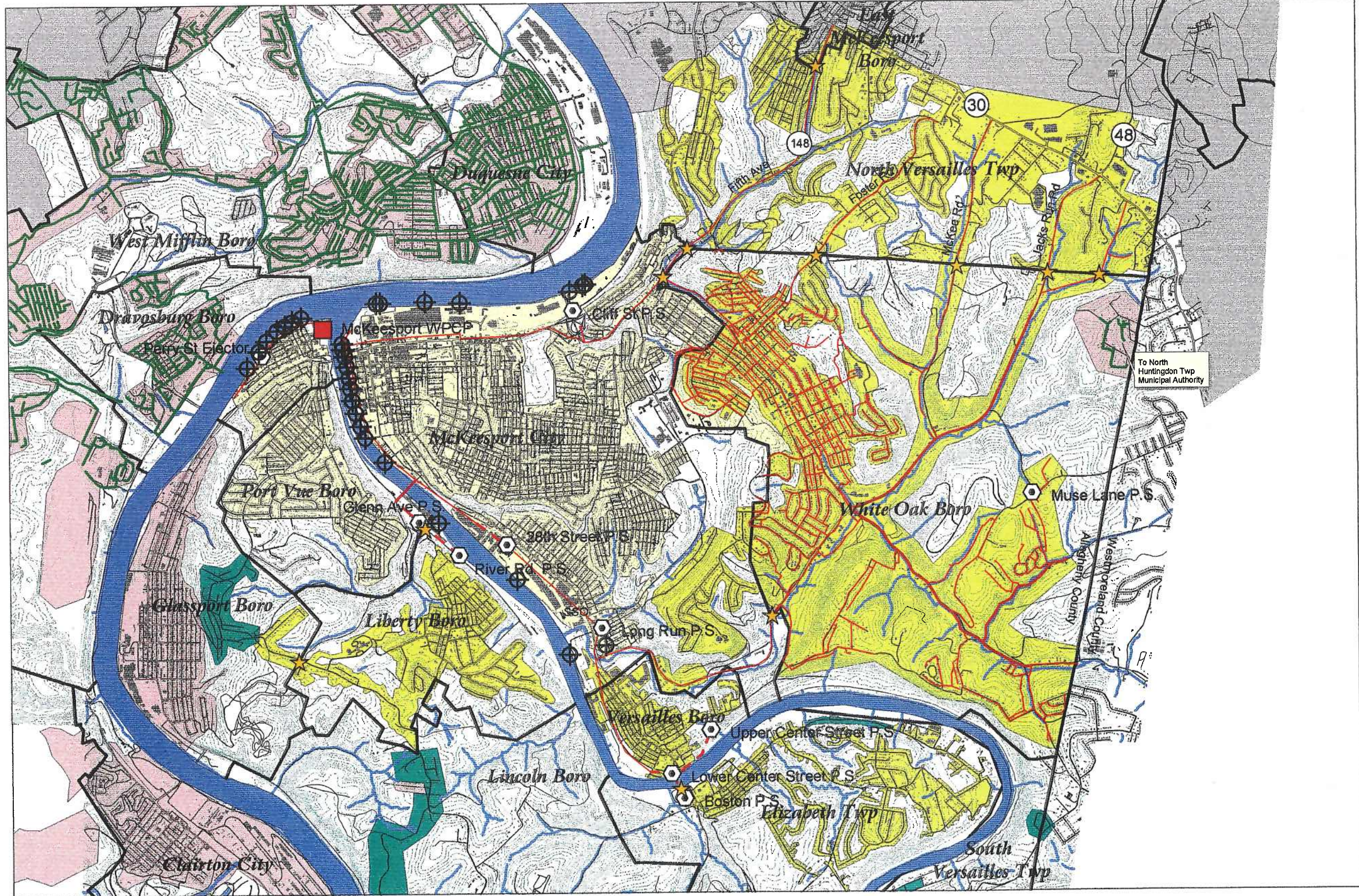


1000 0 1000 2000 Feet

- Public Treatment Facility
 - Existing STP
 - Pump Station
 - Combined Sewer Overflow
 - Intermunicipal Connection
 - Municipal Boundary
 - Contour
 - Hydrologic Feature
 - Building
- Collection System
 - Combined
 - Separate
 - On - Lot Problem Area
- Pipe Type
 - Collector
 - Force Main
 - Trunk
- Neighboring Service Area
- Neighboring Collection System
- ALCOSAN Service Area

Not Field Verified

Source: KLH Engineers Inc.
White Oak Digital Sewer Lines
Glenn Engineering and Assoc. Ltd.



Moon Township Municipal Authority

The Moon Township Municipal Authority (MTMA) is a sewer and water authority. The MTMA provides sanitary sewer service to a service area population equivalent of 58,688 in portions of Moon, Robinson, Findlay, and North Fayette Townships. In addition, the MTMA provides service to the Pittsburgh International Airport (PIA). MTMA owns and operates two treatment plants, including the Montour Run Wastewater Pollution Control Plant (WPCP) and the Flaugherty Run Sewage Treatment Plant (STP), and all the collector and interceptor sewers and pump stations located in the township. In 1999, Moon Township and Coraopolis Borough created the Riverview Sanitary Authority (RSA) to manage and operate the Coraopolis WPCF.

The Montour Run WPCP, with a design capacity of 6.2 mgd, and a service area equivalent population of 55,348 is the third largest treatment plant in Allegheny County. Montour Run WPCP serves customers from the Townships of Moon, Robinson, North Fayette and Findlay, as well as the PIA, the Pennsylvania Air National Guard, and the U. S. Air Force Reserve Base. Originally built in 1973, the 3.1-mgd treatment facility was expanded to 6.2-mgd in 1991. The annual average hydraulic loading in 1997 was approximately 4.0 mgd. The permitted organic loading for the treatment plant is 10,200 lb CBOD₅/day. In 1997, the annual average organic loading was 5,671 lb BOD₅/day. The plant discharges to the Ohio River by an outfall built in the mid-'80's.

The Montour Run service area population is projected to increase to approximately 82,700 by 2015; this will result in a 49 percent increase to the hydraulic and organic loadings to the treatment plant. The hydraulic loading is projected to increase to approximately 5.75 mgd, and the organic loading is projected to increase to approximately 8,500 lb CBOD₅/day. The plant's hydraulic and organic loading capacities appear to be adequate for projected average daily flow and loading conditions in 2015.

The Flaugherty Run STP was built in 1994 to replace a series of package treatment plants dispersed throughout the Flaugherty Run Drainage Area in Moon Township. The 1.0-mgd sequencing batch reactor plant was designed for future growth. With the addition of five tanks (4 SBR and 1 Digester), the plant will have a capacity of 3.0-mgd. Presently, the Flaugherty Run plant has an annual average hydraulic loading of 0.35 mgd. The plant is permitted for an organic loading of 2,085 lb CBOD₅/day; the annual average organic loading in 1997 was 510 lb CBOD₅/day. The Flaugherty Run plant serves an equivalent population of 3,340 persons from Moon Township. The ultimate service area for the treatment works includes areas in neighboring Findlay and Hopewell Townships.

The Flaugherty Run service area population of approximately 3,340 is projected to increase to approximately 4,800 by 2015. Based on the 2015 population increase, the hydraulic and organic loadings to the treatment plant are expected to increase by 42 percent. The hydraulic loading is projected to increase to approximately 0.49 mgd, and the organic loading is projected to increase to approximately 730 lb CBOD₅/day. The hydraulic and organic loading capacities of the plant appear to be adequate for average daily flow and loading conditions in 2015.

The MTMA owns and operates 12 pump stations of which four are tributary to the MTMA's plants. The Enlow Road and McCutcheon Road pumping stations convey wastewater flows to the Montour Run WPCP. North Fayette Township has a pump station located at the Pointe at North Fayette restaurant complex, which conveys flow to the Montour Run WPCP. The Amato pumping station conveys wastewater flows to the Flaugherty Run STP. The Bon Meade Plan No. 11 pumping station will be eliminated when gravity sewers are extended to serve a new housing plan. Eight pump stations are tributary to the Coraopolis WPCF. Stations are inspected a minimum of three times per week by MTMA personnel that includes routine lubrication and service attention.

MTMA is responsible for the collection system in Moon Township and has some responsibility for the Montour Run interceptor, which serves the Airport property. The older sewers are a source of infiltration and inflow (I/I), and the MTMA has taken an aggressive approach to reduce I/I. MTMA's goal is to televise 100% of all the clay sewers in the township. MTMA reports that there are no problems in the PVC sewers built in the township since the 1970's. MTMA personnel inspect the sewer system frequently to locate blockages or bypasses, and utilize outside contractors on an as-needed basis. MTMA is a member of the Char-West Council of Government (CWCOG) and has utilized their sewer jet truck for system maintenance. North Fayette, Findlay, and Robinson Townships are responsible for their own collection systems and perform routine operation and maintenance procedures as needed.

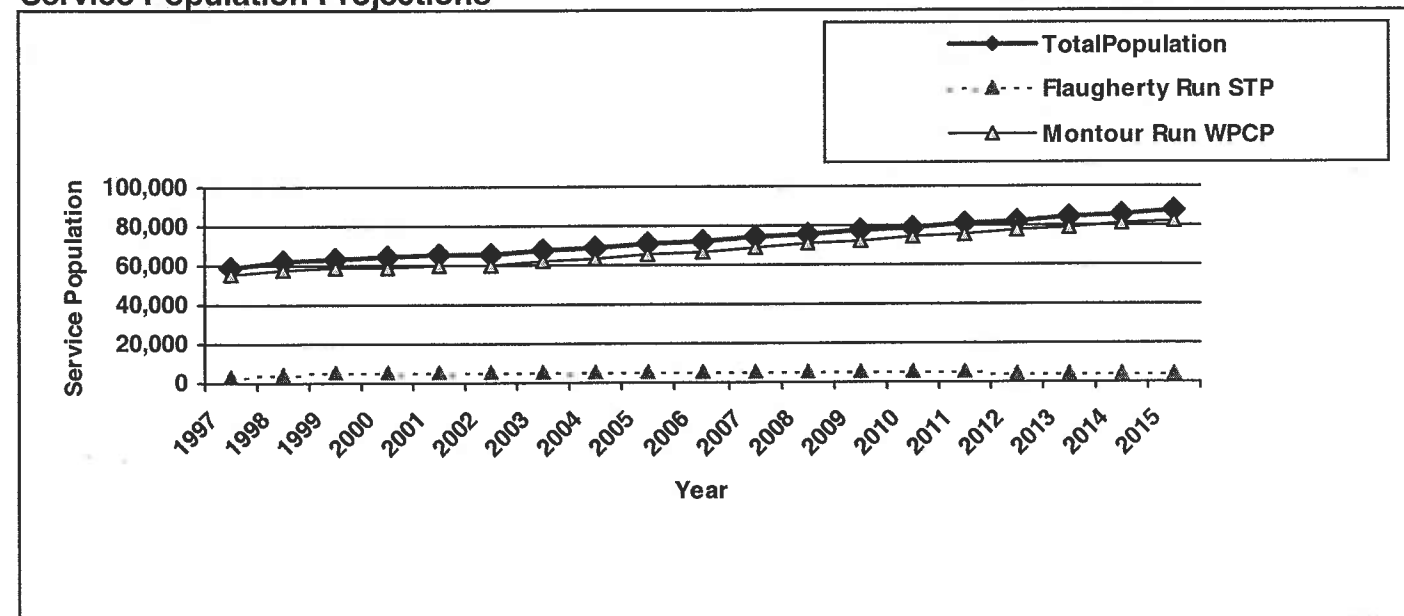
Service Area Summary

POTW Name	1997 Service Population	2015 Service Population	Municipality	Type Of Sewer System
Flaugherty Run STP	3340	4754	Moon Township	Separate
Montour Run WPCP	55348	82678	Findlay Township	Separate
			Moon Township	Separate
			North Fayette Township	Separate
			Robinson Township	Separate

Treatment Process Summary

POTW Name	Equalization	Screening	Comminution	Grit Removal	Prechlorination	Primary Treatment	Activated Sludge	Contact Aeration	Trickling Filter	Disinfection	Dechlorination	Filtration	Reaeration	Thickening	Aerobic Digestion	Anaerobic Digestion	Lime Stabilization	Composting	Thermal Processing	Dewatering	Land Application	Landfill	Incineration	Haul to other STP	Odor Control
Flaugherty Run STP		■					■																		
Montour Run WPCP		■	■	■			■						■	■							■				

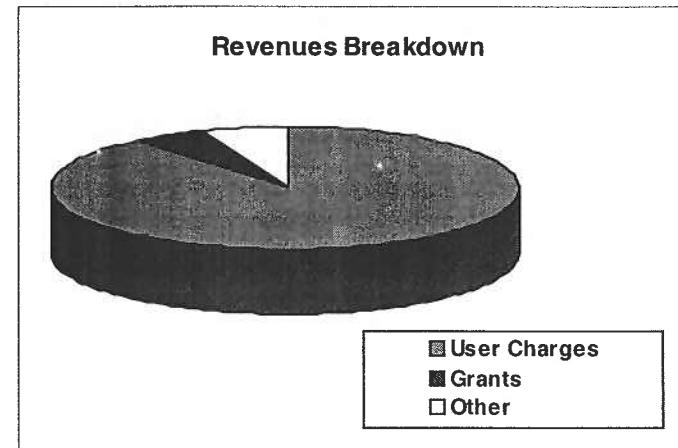
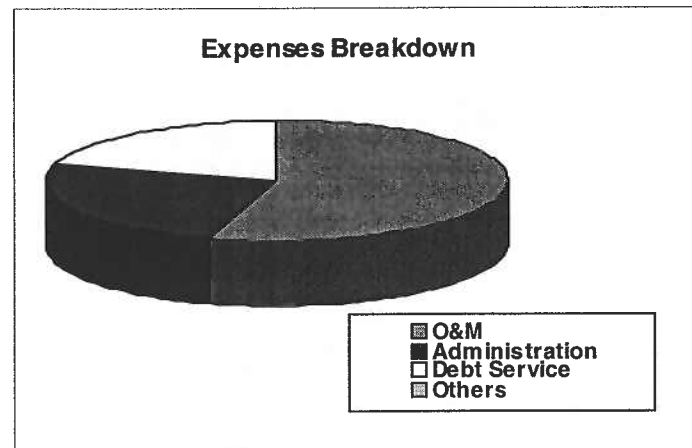
Service Population Projections



Moon Township Municipal Authority

Sewer Use Ordinances

Municipality	Corrective Action Plan	Grease Trap Requirement	Industrial Pretreatment Program	Illicit Connection Inspection At Sale	Surcharge
Findlay Township	No	Yes	Yes, MTMA's pretreatment plan	No	Yes
Moon Township	No	Yes	Yes	Yes	No
North Fayette Township	No		Yes, MTMA's pretreatment ordinance	No	
Robinson Township	No	Yes	Yes, adopted MTMA's pretreatment ordinance	Yes	No

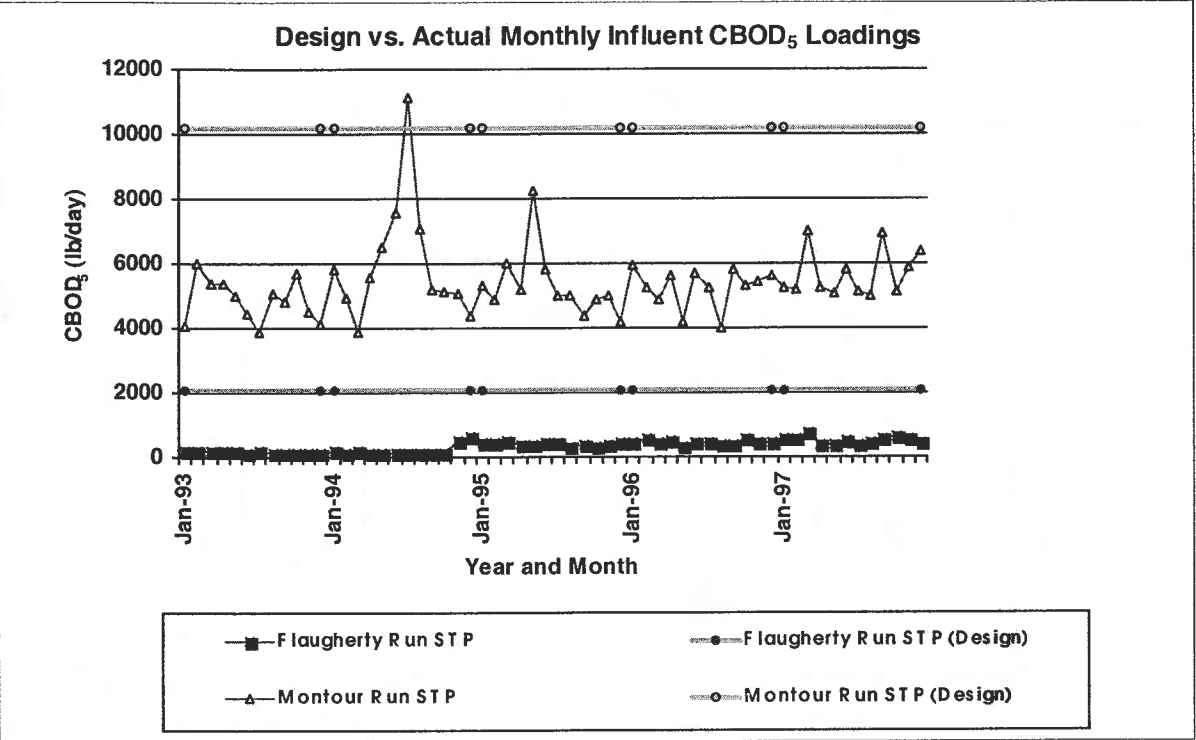
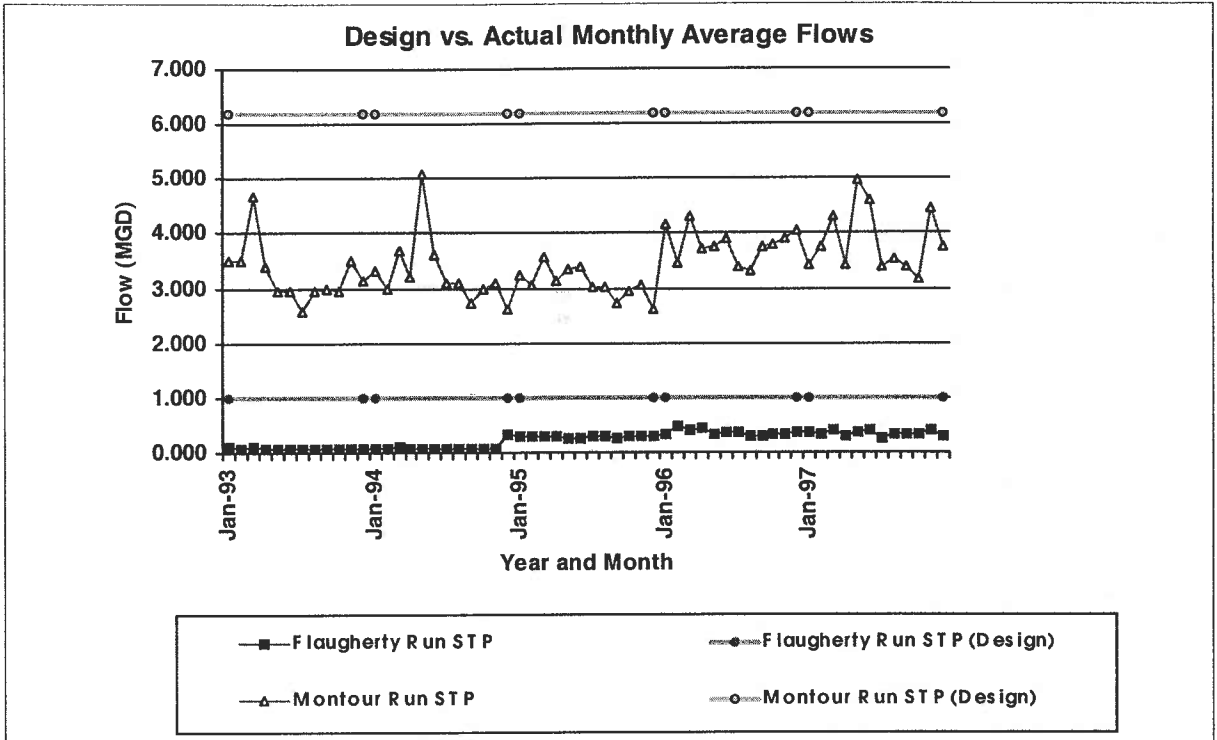


Financial Information

REVENUES		
User Charges:		\$4,396,547
Grants:		\$252,539
Other:		\$300,986
Total Revenues		\$4,950,072
EXPENSES		
Operations and Maintenance		\$1,722,727
Administration:		\$775,944
Debt Service:		\$649,499
Other:		\$0
Total Expenses		\$3,148,170
Surplus(Deficit):		\$1,801,902
Debt Service Coverage Ratio		3.77
Information Source:	YEAR: 1997	Actual/Budgeted
Revenues	Statistics For Municipal Authorities in PA	Actual
Expenses	Statistics For Municipal Authorities in PA	Actual

Moon Township Municipal Authority

Plant Loading Summary



Moon Township Municipal Authority

Collection System Facilities

TREATMENT PLANT	Design Capacity (MGD)	Biological Treatment	Owner	Operator
Flaugherty Run STP	1	Extended Aeration	MTMA	MOON
<u>Pump Station</u>	<u>Peak Capacity</u>	<u>Avg Daily Flow</u>	<u>Owner</u>	<u>Operator</u>
Amato	28 gpm		MTMA	MTMA
Bon Meade Plan No. 11	80 gpm		MTMA	MTMA
<u>Equalization Basin</u>	<u>Capacity</u>	<u>Location</u>	<u>Owner</u>	<u>Operator</u>
None				

TREATMENT PLANT	Design Capacity (MGD)	Biological Treatment	Owner	Operator
Montour Run WPCP	6.2	Contact Stabilization	MTMA	MOON
<u>Pump Station</u>	<u>Peak Capacity</u>	<u>Avg Daily Flow</u>	<u>Owner</u>	<u>Operator</u>
DiCicco			MATR	MATR
Enlow Rd.	170 gpm		MTMA	MTMA
McCutcheon Rd.	100 gpm		MTMA	MTMA
Petrie Road	120 gpm		MATR	MATR
Pointe at North Fayette	550 gpm	55 gpm	North Fayette Twp.	North Fayette Twp.
<u>Equalization Basin</u>	<u>Capacity</u>	<u>Location</u>	<u>Owner</u>	<u>Operator</u>
None				

Sewer Maintenance Information

<i>Service Community</i>	<i>Maintained By:</i>	<i>Mainten. Done:</i>	<i>Equipment Source</i>	<i>I/I Removal</i>	<i>I/I Flow Monitor</i>
Findlay Township	Findlay Township	As-needed	COG	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Moon Township	MTMA	Routine	MTMA, COG	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
North Fayette Township	Dept. of Public Works	As-needed	No Data	<input type="checkbox"/>	<input type="checkbox"/>
Robinson Township	MATR, Contractor	Routine	Authority	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Moon Township Municipal Authority

Intermunicipal Agreements

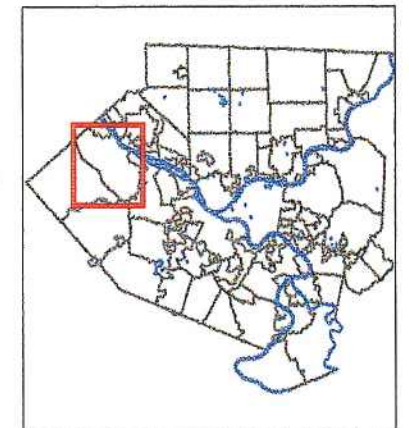
Agreement With	Date Enacted	Agreement Description	Expiration Date	Flow Limits (mgd)	Rate and Surcharge Provisions	Sampling Provisions	Flow Monitoring Provisions	Dispute Resol. Procedure	Basis of Cost Allocation
Allegheny Co.	03/30/95	The agreement states that the Authority agrees to accept delivery of all domestic wastewater originating at Pittsburgh International Airport into the conveyance system for treatment at the Montour Run Water Pollution Control Facility	2020	None		Cooperate w/ Auth. in investigation of non-domestic wastewater discharges			Water consumption
Municipal Authority of the Twp. Of Robinson	02/01/71	Agreement states that Robinson Twp. will make provisions for the transportation, treatment, and disposal of sewage of the Montour Run Watershed Area for treatment by the MTMA	Until the date of the expiration of the legal existence of the Moon Authority or until the expiration of one calender year following the payment in full of the bonds	None			None	Arbitration	Charged on actual costs - MTMA makes no money
Township of Findlay	05/21/97	Findlay enters agreement with MTMA for wastewater conveyance and treatment of the area tributary to the Flaugherty Run STP	Remain in effect so long as the Moon Authority owns and operates its Flaugherty Run Wastewater conveyance and Treatment System						MTMA will charge lesser of: retail sewer rate charge to residents of Moon or rate calculated by Moon's engineer equal to total annual cost of Flaugherty Run wastewater system by number of EDU's served by system
Township of Findlay	12/08/71	Agreement states that the Township of Findlay will make provisions for the transportation, treatment, and disposal of sewage of the Montour Run Watershed Area for treatment by the MTMA	Until the date of the expiration of the legal existence of the Moon Authority or until the expiration of one calender year following the payment in full of the bonds	None			None	Arbitration	Charged on actual costs - MTMA makes no money
Township of Findlay	01/05/98	Moon Clinton Road Sanitary Sewer Extension Agreement executed as a portion of Findlay became accessible to MTMA's wastewater collection and pumping system tributary to the Montour Run STP	Until the date of the expiration of the legal existence of the Moon Authority or until the expiration of one calender year following the payment in full of the bonds						\$261 per EDU Moon charges Findlay to proportionate share of cost for pumping station
Township of North Fayette	02/03/72	Agreement states that the Township of North Fayette will make provisions for the transportation, treatment, and disposal of sewage of the Montour Run Watershed Area for treatment by the MTMA	Until the date of the expiration of the legal existence of the Moon Authority or until the expiration of one calender year following the payment in full of the bonds	None			None	Arbitration	Charged on actual costs - MTMA makes no money

Moon Township Municipal Authority

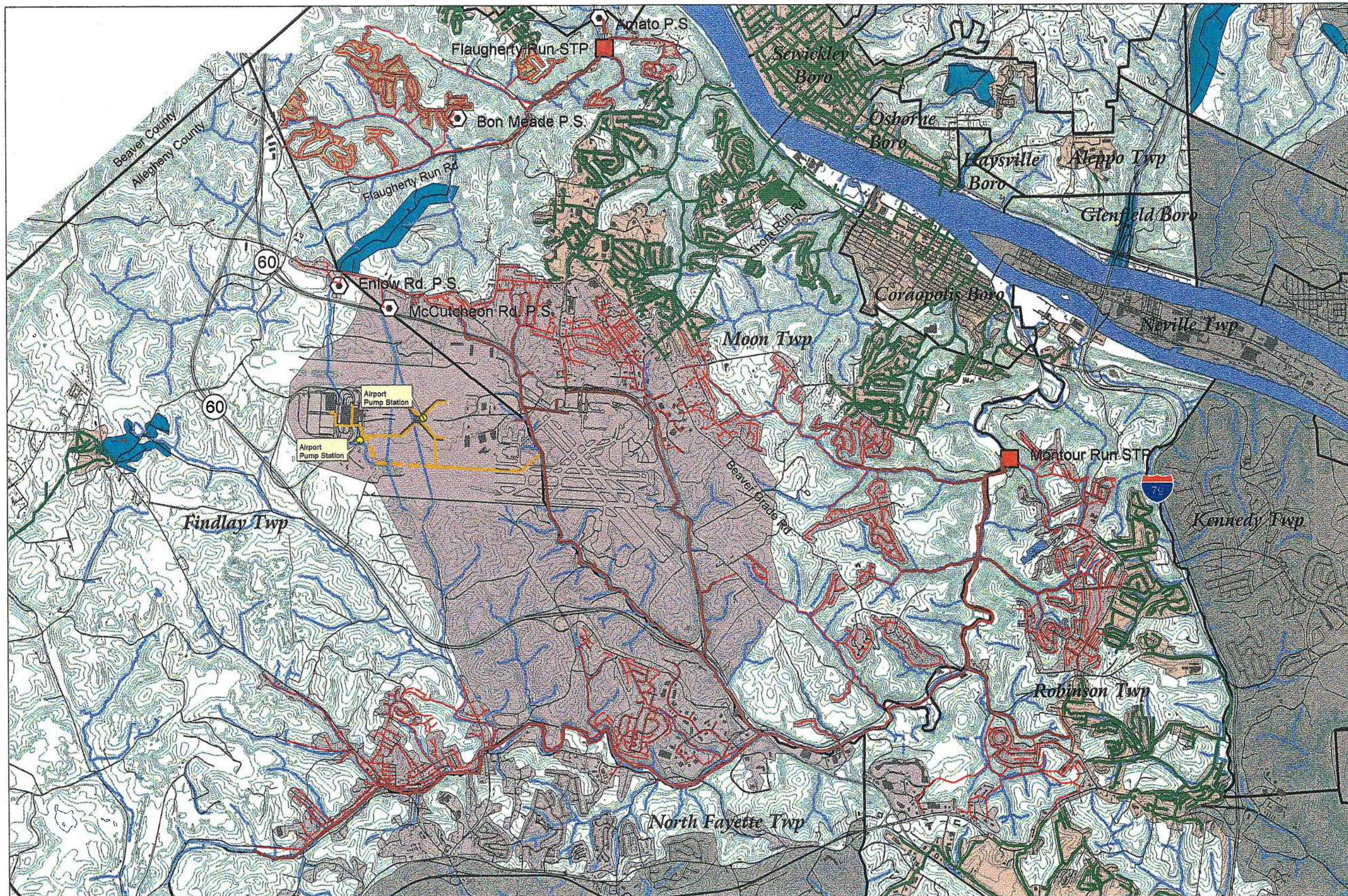
Water Pollution Control Facilities
Service Areas and Collection
Systems

Allegheny County
Department of Economic Development

Allegheny County, PA



900 0 900 1800 Feet



- Public Treatment Facility
- Existing STP
- Pump Station
- Municipal Boundary
- Major Road
- Contour
- Hydrologic Feature
- Building
- Moon Township
Collection System
- Flougherty Run STP Service Area
Separate System
- Montour Run STP Service Area
Separate System
- On - Lot Problem Area
- Pipe Type
- Collector
- Force Main
- Trunk
- Allegheny County
Department of Aviation
To Moon Twp Municipal Authority
- Collector
- Force Main
- Neighboring Service Area
- Neighboring Collection System
- ALCOSAN Service Area



Not Field Verified
Source: Moon Twp. Water Distribution Map
Allegheny County Health Department

Borough of Oakmont

The Borough of Oakmont owns and operates the Oakmont Borough Sewage Treatment Plant (STP) serving approximately 7,000 persons in the Oakmont Borough. In addition, Oakmont Country Club is served. The Oakmont Borough STP is a 1.2-mgd extended aeration type activated sludge treatment plant that discharges to the Allegheny River. The permitted organic loading to the treatment plant is 2,040 lb CBOD₅/day. There are three aeration tanks at the Oakmont STP and one tank can be used as either an aeration tank or an anaerobic digester. This gives Oakmont the flexibility to run the plant as either a contact stabilization or an extended aeration plant. The average monthly flow at the plant in 1997 was 1.155 mgd and the average monthly organic loading in 1997 was 1,287 lb CBOD₅/day.

The Oakmont STP was built in the 1960's to provide primary treatment. In the 1970's, the plant was upgraded to secondary treatment using activated sludge, but had problems with high flows. In the 1990's, the plant was again upgraded. Flow enters the Oakmont treatment facility through two separate conveyance systems, the "North System", which is a gravity collection system, and the "South System", which supplies flow through pumping. The flows from the two systems are monitored using separate Parshall flumes. Raw sewage entering the facility is metered in Parshall flumes and receives preliminary treatment in screening and grit removal units. Secondary treatment is provided in the form of the activated sludge treatment process. Excess solids produced during the activated sludge process are thickened, anaerobically digested, dewatered by a centrifuge, and disposed. Disinfection is accomplished using chlorine; however, the Borough is investigating alternative disinfection methods.

The entire Oakmont service area is sewered. The existing sewer system serving the Borough of Oakmont consists of approximately 22 miles of gravity sewer ranging from 8 to 24 inches in diameter. The collection system is primarily sanitary; however, small areas of the Borough have combined sewers. According to sanitary and storm sewer system drawings provided by Oakmont Borough, there is a 24-inch combined sewer on Pennsylvania Avenue, and a 30-inch combined sewer on Washington Avenue. There are three sewage subsystems in Oakmont including Plum Creek, Washington Avenue (comprise the "South System") and gravity drainage (comprises the "North System"). All three areas had a bypass, but the Pennsylvania Avenue bypass was eliminated in 1993. There is an emergency bypass located at the treatment plant.

The gravity drainage system and the Washington Avenue pump station have combined sewer overflows. The Plum Creek pump station has a sanitary sewer overflow. Due to the frequency of hydraulic overloading at the treatment plant over the past several years, a corrective action plan developed in September 1995. This plan includes installing permanent flow monitors, installing permanent flow monitors on unpermitted bypass points, conducting subsystem flow monitoring, conducting smoke and dye testing, inspecting manholes, repairing manholes and performing sewer section flow isolation monitoring. Infiltration and inflow problems in the Washington Avenue drainage basin are being addressed first as it suffers most from overflows during heavy rains.

The sewer system tributary to the Oakmont Borough STP is currently in good condition. The Borough uses outside contractors to perform sewer cleaning services. The cleaning is generally performed with rodding equipment or bucket machines. The schedule for sewer cleaning is determined by the Borough, as needed. In low-lying areas of the system which are prone to blockage, routine cleaning is performed every two to three years. In more steeply sloped sections of the system, cleaning is performed on an as-needed basis. The STP employs four certified operators in addition to a consulting engineer to run the plant. The Borough presently operates three pump stations in the system including the Washington Avenue P.S., the Plum Creek P.S., and the Fairways P.S. which serves the Fairways Village condominiums.

The Borough of Oakmont service area population of approximately 7,000 is projected to increase to approximately 7,400 by 2015. Based on the 2015 population increase, the hydraulic and organic loading to the treatment plant are expected to increase by six percent. The hydraulic loading is projected to increase to approximately 1.22 mgd, and the organic loading is projected to increase to approximately 1,400 lb CBOD₅/day. The projected organic loading capacity of the plant appears to be adequate for the organic loading condition in 2015, but the projected hydraulic loading to the plant will be at the permitted limit.

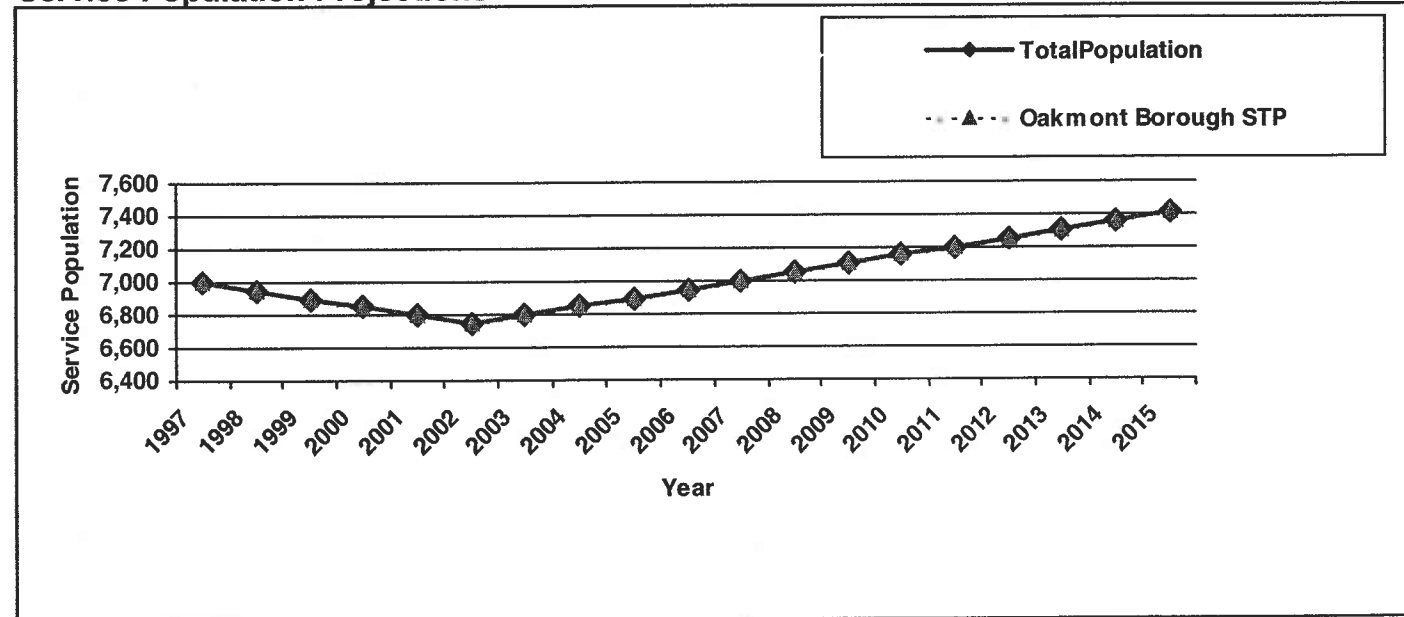
Service Area Summary

POTW Name	1997 Service Population	2015 Service Population	Municipality	Type Of Sewer System
Oakmont Borough STP	7000	7412	Oakmont Borough	Combined

Treatment Process Summary

POTW Name	Equalization	Screening	Comminution	Grit Removal	Prechlorination	Primary Treatment	Activated Sludge	Extended Aeration	Contact Stabilization	Trickling Filter	Disinfection	Dechlorination	Filtration	Reaeration	Thickening	Aerobic Digestion	Anaerobic Digestion	Line Stabilization	Composting	Thermal Processing	Dewatering	Land Application	Landfill	Incineration	Haul to other STP	Odor Control	
Oakmont Borough STP		■		■		■																					

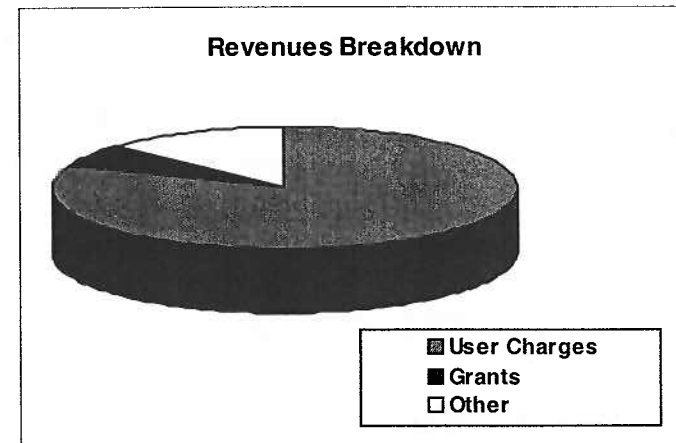
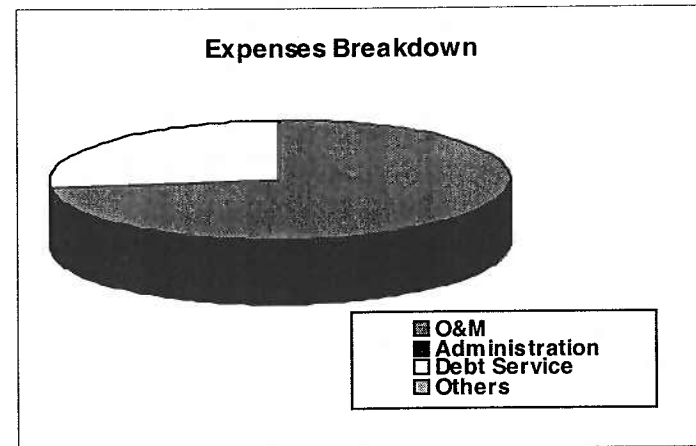
Service Population Projections



Borough of Oakmont

Sewer Use Ordinances

Municipality	Corrective Action Plan	Grease Trap Requirement	Industrial Pretreatment Program	Illicit Connection Inspection At Sale	Surcharge
Oakmont Borough	Yes	Yes	Yes	Yes	



Financial Information

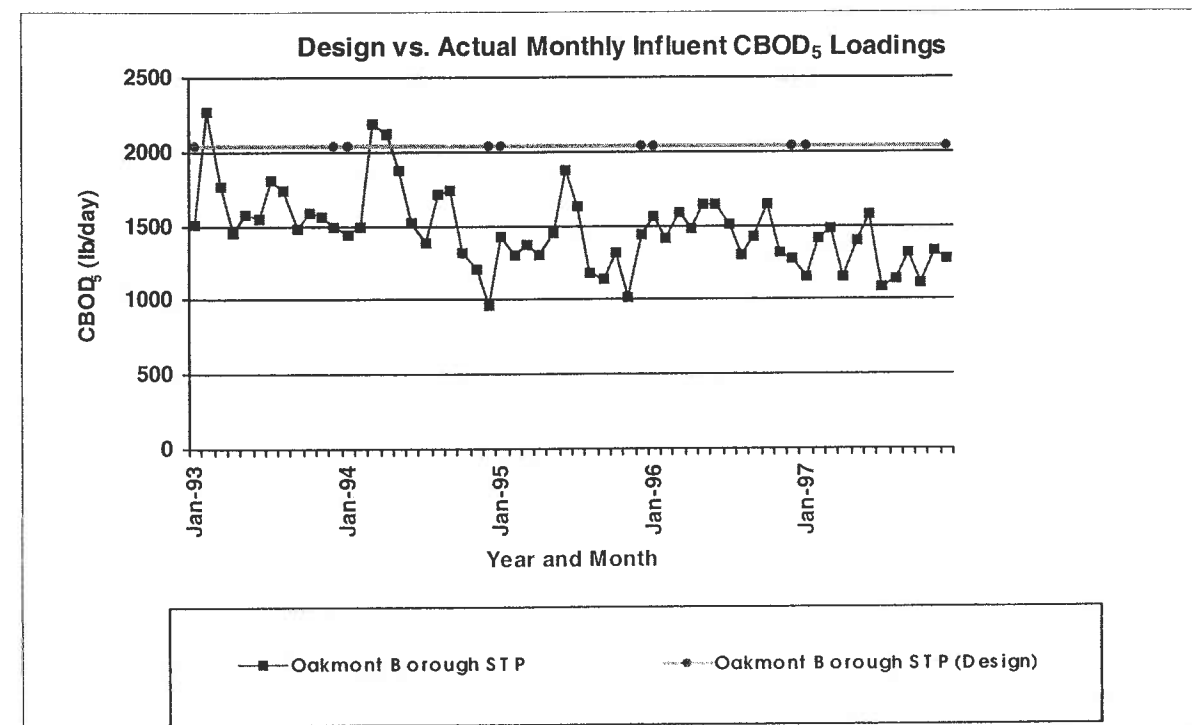
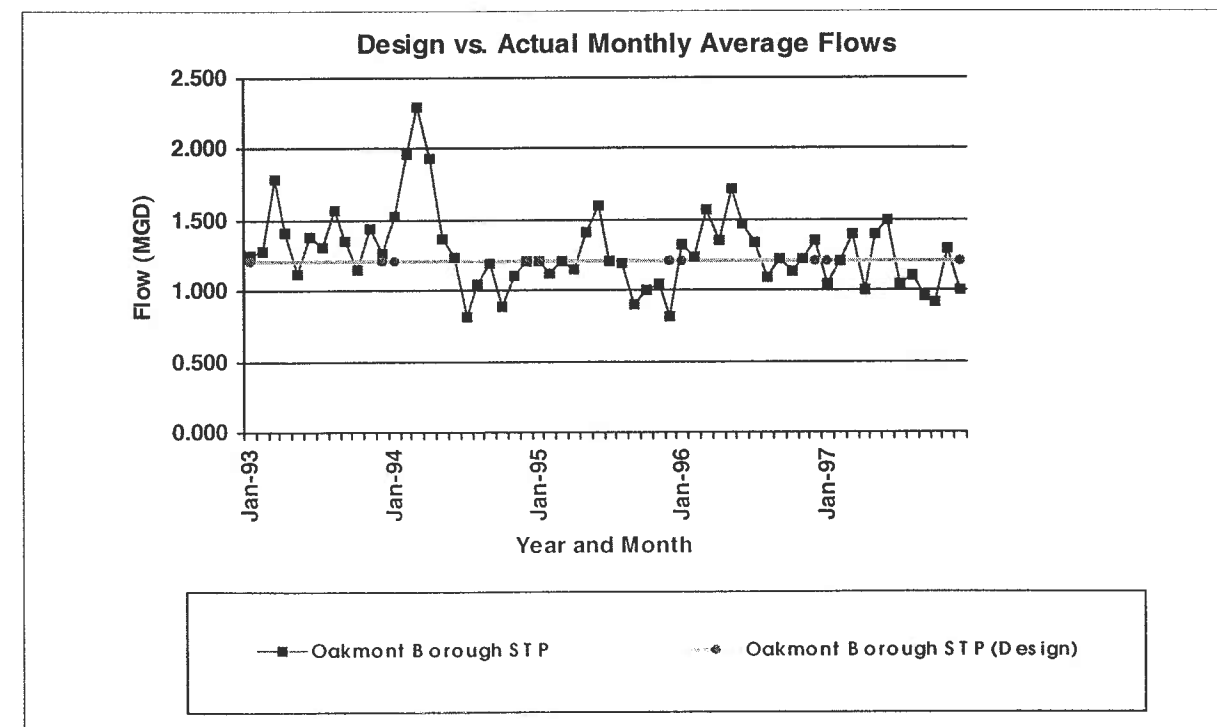
REVENUES		
User Charges:		\$1,024,849
Grants:		\$71,990
Other:		\$166,140
Total Revenues		\$1,262,979
EXPENSES		
Operations and Maintenance		\$838,578
Administration:		\$0
Debt Service:		\$308,074
Other:		\$0
Total Expenses		\$1,146,652
Surplus(Deficit):		\$116,327
Debt Service Coverage Ratio		1.38
	YEAR:	1998
		Actual/ Budgeted
Information Source:		
Revenues	Borough of Oakmont WWTP Budget Worksheet	Budgeted
Expenses	Borough of Oakmont WWTP Budget Sheet	Budgeted

Borough of Oakmont

1997 Plant Performance

Oakmont Borough STP	Average Daily Flow (mgd)			CBOD ₅ (lb/Day)			Permit Limits			TSS (lb/Day) Effluent			Permit Limits			Effluent Coliform (Col./100ml)			Permit Limits		
	Monthly	Summer	Winter	Monthly Influent	Average Effluent	% Removal	Summer	Winter	Average	Summer	Winter	Average Daily	Summer	Winter							
January	1.05			1,153	94	92%			120			201									
February	1.20			1,408	88	94%			125			987									
March	1.40			1,476	107	93%			140			353									
April	1.00			1,157	89	92%			110			284									
May	1.40			1,404	130	91%			136			110									
June	1.50			1,582	161	90%			118			84									
July	1.04			1,083	70	94%			90			92									
August	1.10			1,141	53	95%			78			49									
September	0.96			1,319	103	92%			100			61									
October	0.92			1,113	60	95%			66			23									
November	1.29			1,325	103	92%			140			16									
December	1.00			1,281	106	92%			118			49									
Maximum	1.50	1.20	1.20		161.0		250	250	140	300	300	987	200	2000							
Max as % Limit	125%				64%				47%			49%									
Average	1.16				97.0				112			192									
3 Month > Limit?	No																				

Plant Loading Summary



Borough of Oakmont

Collection System Facilities

TREATMENT PLANT	Design Capacity (MGD)	Biological Treatment	Owner	Operator
Oakmont Borough STP	1.2	Activated Sludge	OAKM	OAKM

Pump Station	Peak Capacity	Avg Daily Flow	Owner	Operator
Fairways	0.216 mgd	not monitored	OAKM	OAKM
Plum Creek	1.44 mgd	part of 0.655 mgd	OAKM	Oakmont B.
Washington Ave.	0.87 mgd	part of 0.655 mgd	OAKM	Oakmont B.

Equalization Basin	Capacity	Location	Owner	Operator
None				

Sewer Maintenance Information

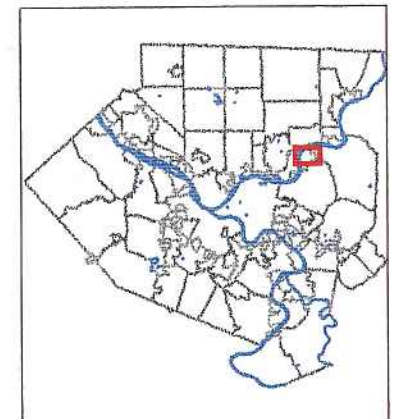
<i>Service Community</i>	<i>Maintained By:</i>	<i>Mainten. Done:</i>	<i>Equipment Source</i>	<i>I/I Removal</i>	<i>I/I Flow Monitor</i>
Oakmont Borough	Contractor	As-needed	Borough, Water Authority	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Borough of Oakmont

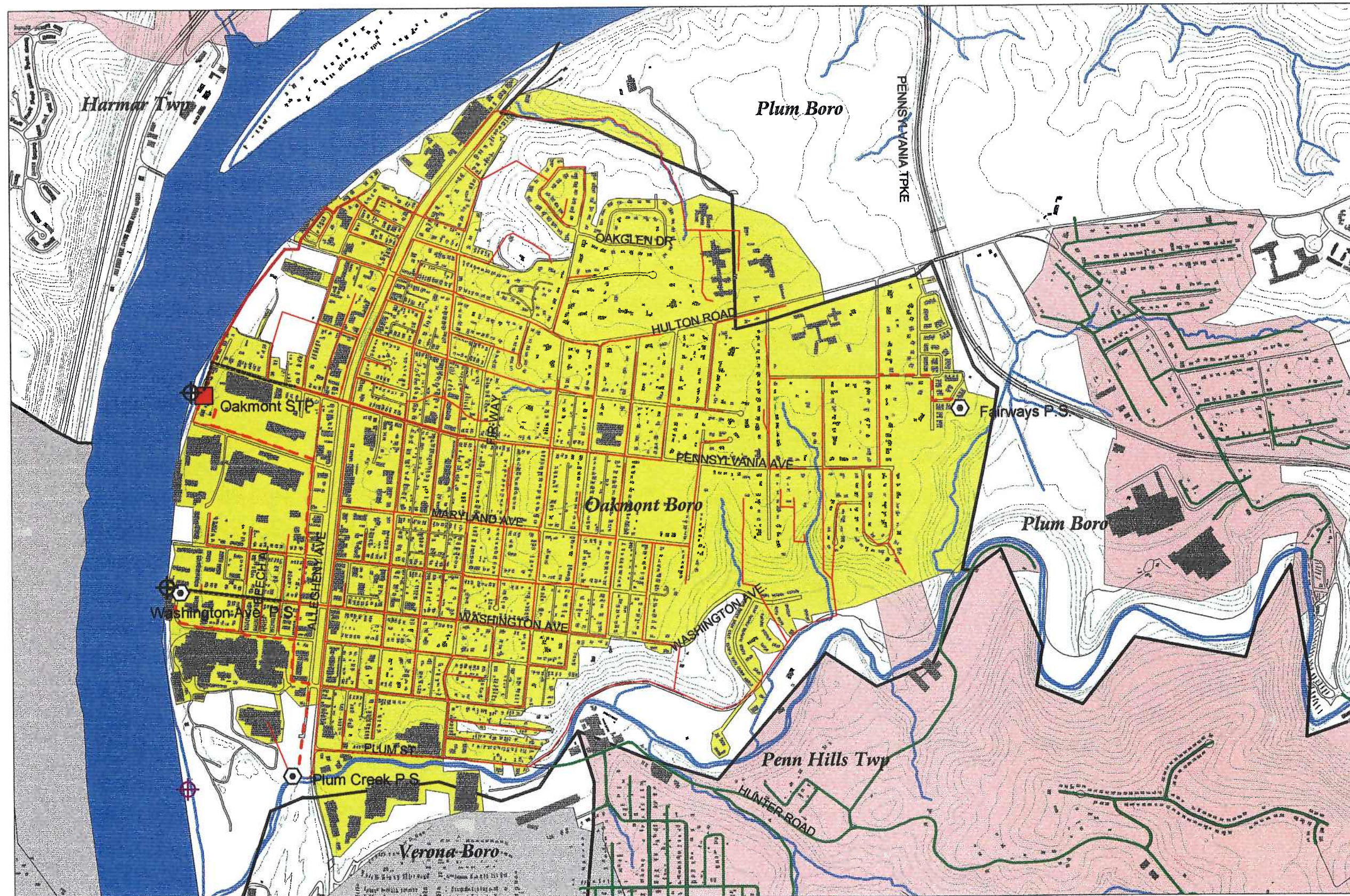
Water Pollution Control Facility Service Area and Collection System

Allegheny County Department of Economic Development

Allegheny County, PA



300 0 300 600 Feet



- Public Treatment Facility
- Existing STP
- Pump Station
- Combined Sewer Outfall
- Sanitary Sewer Outfall
- Municipal Boundary
- Major Road
- Contour
- Hydrologic Feature
- Building
- Collection System
- Separate
- Pipe Type
- Collector
- Force Main
- Trunk
- Combined Sewerline
- Neighboring Service Area
- Neighboring Collection System
- ALCOSAN Service Area
- Not Field Verified

Source: Boro. of Oakmont Storm and Sanitary Sewer System Map

Ohio Township Sanitary Authority

The Ohio Township Sanitary Authority (OTSA) is a treatment and collection authority that serves a portion of Ohio Township. There are five members on the authority board comprised of Ohio Township residents. The Authority owns the Windy Knoll Sewage Treatment Plant (STP), a 0.1-mgd sequential batch reactor (SBR) type plant. The Windy Knoll STP discharges treated wastewater to Toms Run. Much of the eastern portion of Ohio Township is served by ALCOSAN (via Franklin Park and McCandless Townships) with the remaining areas using on-lot systems.

In 1996, the Windy Knoll STP was converted from an extended aeration package-type facility to an SBR type plant. The hydraulic capacity of the plant increased from 0.03-mgd to 0.1-mgd, when the plant was converted. Also as a result of the plant conversion, the organic capacity of the plant increased from 48 lb CBOD₅/day to 170 lb CBOD₅/day. The following wastewater treatment processes are employed by the plant: comminution, bar screening, flow monitoring, flow equalization, pH adjustment, biological process / sedimentation (Sequencing Batch Reactor), and UV disinfection. The average monthly flow to the plant in 1997 was 0.044-mgd. The average monthly organic loading was 57.1 lb BOD₅/day.

The operation and maintenance of the Windy Knoll STP is contracted by OTSA to Wastewater Specialty Services, Inc.

The Windy Knoll collection system is a separate sanitary sewer system. Sewer system maintenance, when required, is performed by Contractors hired by OTSA. Work includes sewer cleaning, root removal, and replacement work. The general maintenance procedure followed by the OTSA is to inspect areas where problems frequently occur on a regular basis. Other areas are only inspected when problems arise. In the inspection of the collection system, personnel inspect manholes for signs of structural damages, blockages, unusually high sewage flows, etc. In 1997, the OTSA dye-tested all roof drains in the older area of Windy Knoll and found that none were connected. To reduce infiltration and inflow, all sewer extensions are air-tested and manholes are vacuum tested. OTSA's Engineer visually inspects laterals from newly constructed buildings to ensure that no downspouts, area drains, or french drains are connected to the sanitary sewer system.

The OTSA is monitoring the flows tributary to the Lowries Run interceptor in the ALCOSAN service area and also monitors new construction in the watershed. Under an agreement with the McCandless Township Sanitary Authority (MTSA), OTSA owns 6.8% of the Lowries Run interceptor and contributes 6.8% of MTSA's annual maintenance costs for this line. This agreement is currently being renegotiated.

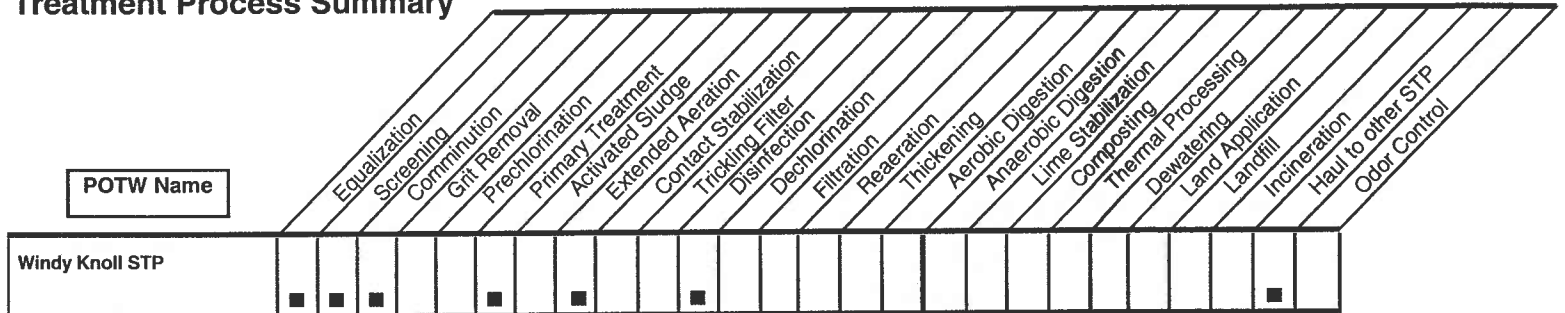
One wastewater pumping station was constructed at the site of the previous Verland Foundation STP. The Verland Foundation pumping station includes two grinder sewage pumps, screening, and an emergency generator. The station is in good condition and overloading is not expected.

The Windy Knoll service area population of approximately 504 is projected to increase to approximately 630 by 2015. Based on the 2015 population increase, the hydraulic and organic loadings to the treatment plant are expected to increase by 25 percent. The hydraulic loading is projected to increase to approximately 0.055 mgd, and the organic loading is projected to increase to approximately 70 lb CBOD₅/day. The hydraulic and organic loading capacities of the plant appear to be adequate for projected average daily flow and loading conditions in 2015.

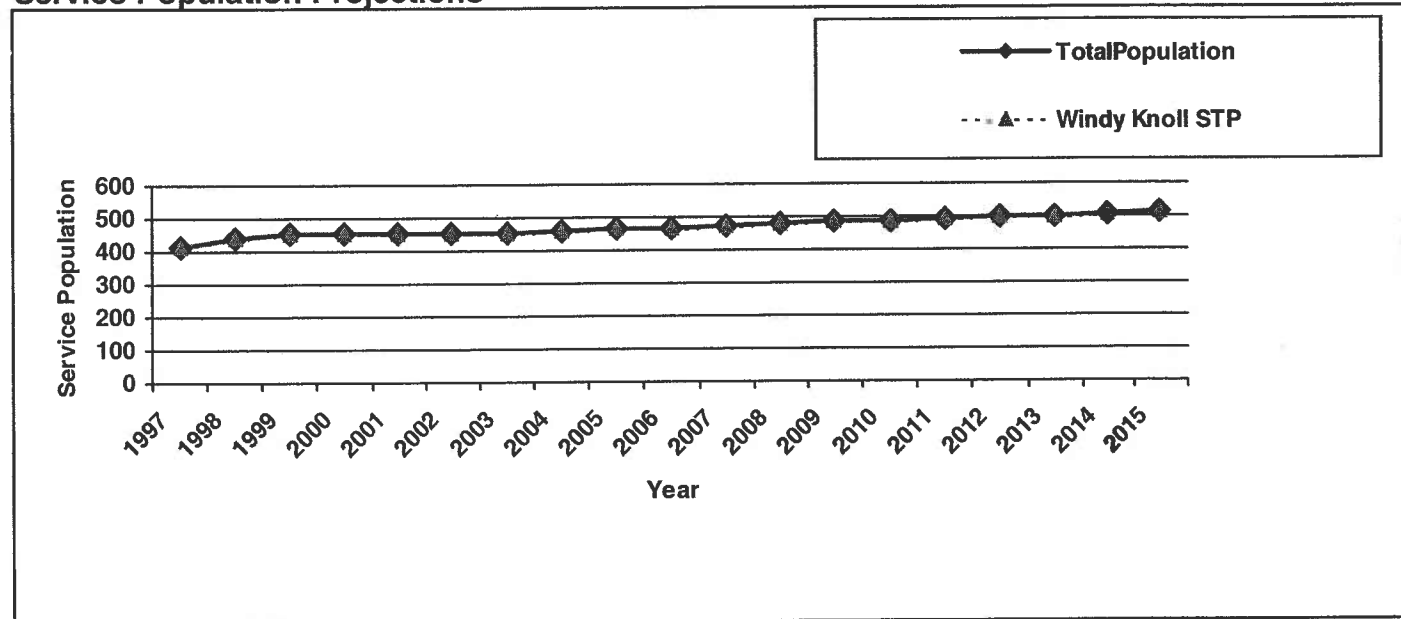
Service Area Summary

POTW Name	1997 Service Population	2015 Service Population	Municipality	Type Of Sewer System
Windy Knoll STP	412	513	Ohio Township	Separate

Treatment Process Summary



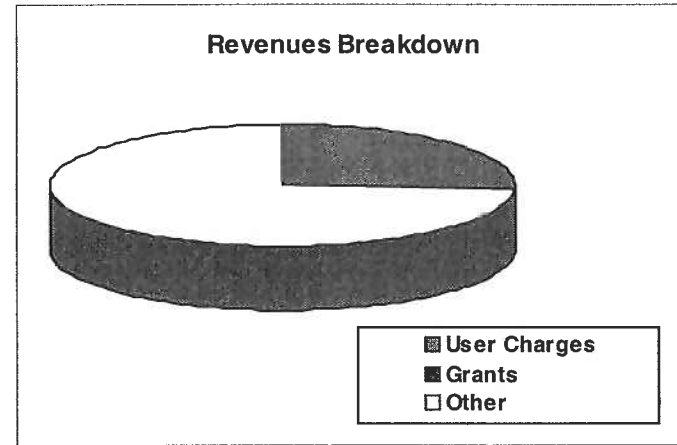
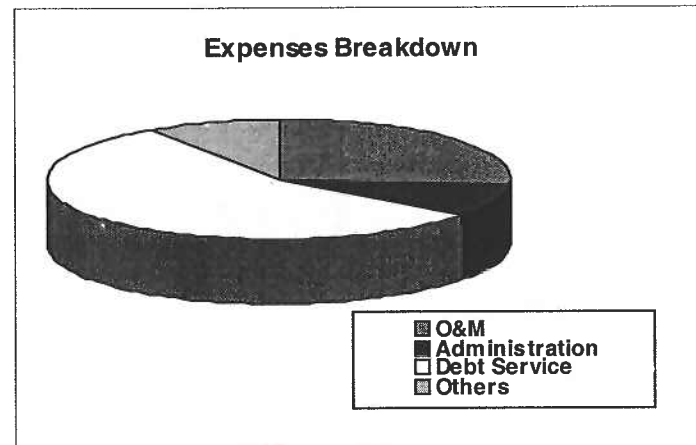
Service Population Projections



Ohio Township Sanitary Authority

Sewer Use Ordinances

Municipality	Corrective Action Plan	Grease Trap Requirement	Industrial Pretreatment Program	Illicit Connection Inspection At Sale	Surcharge
Ohio Township	No	Yes	ALCOSAN	Yes	



Financial Information

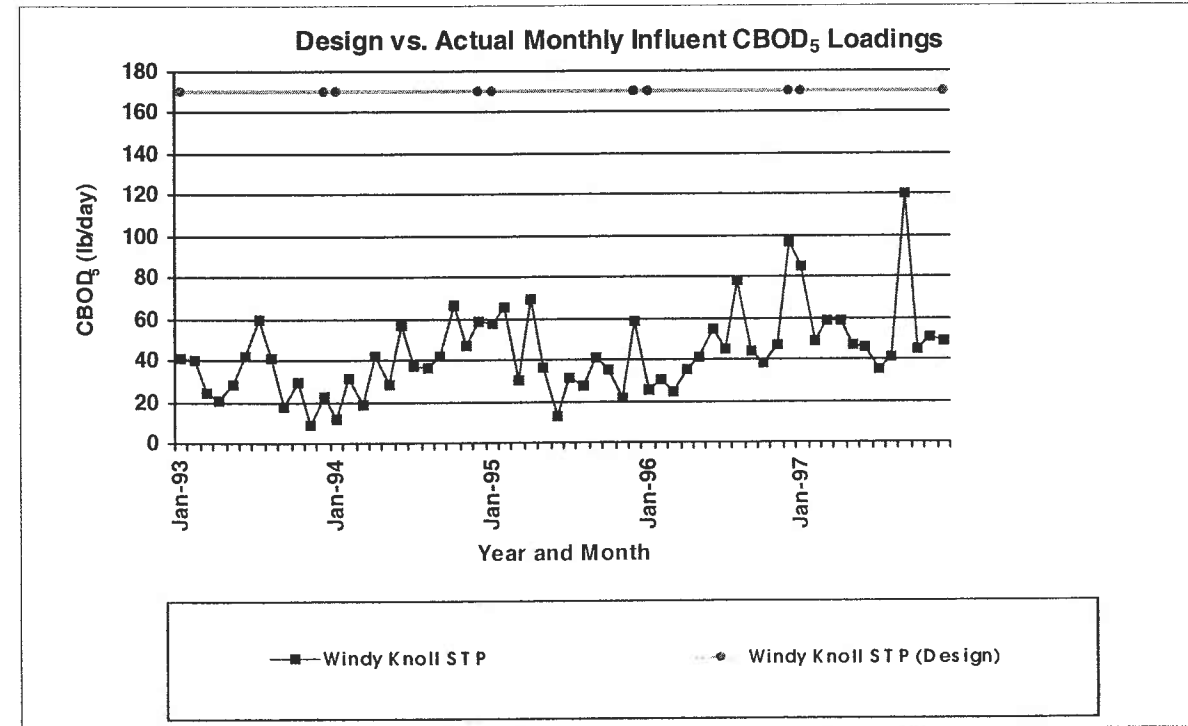
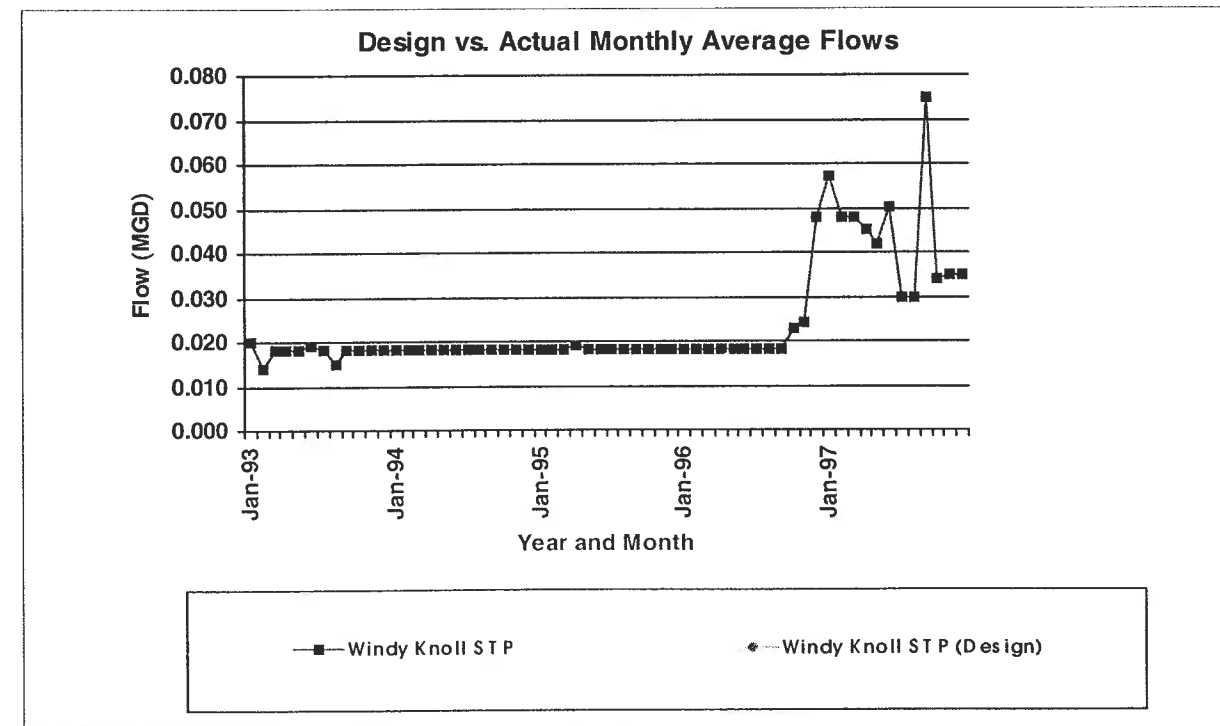
REVENUES		
User Charges:		\$191,356
Grants:		\$0
Other:		\$549,569
Total Revenues		\$740,925
EXPENSES		
Operations and Maintenance		\$100,536
Administration:		\$31,647
Debt Service:		\$205,627
Other:		\$34,500
Total Expenses		\$372,310
Surplus(Deficit):		\$368,615
Debt Service Coverage Ratio		2.74
Information Source:	YEAR: 1997	Actual/Budgeted
Revenues	Statistics For Municipal Authorities in PA	Actual
Expenses	Statistics For Municipal Authorities in PA	Actual

Ohio Township Sanitary Authority

1997 Plant Performance

Windy Knoll STP	Average Daily Flow (mgd)			CBOD ₅ (lb/Day)			Permit Limits			TSS (lb/Day) Effluent			Permit Limits			Effluent Ammonia Nitrogen (mg/l)			Permit Limits			Effluent Coliform (Col./100ml)			Permit Limits		
	Monthly	Summer	Winter	Monthly Influent	Average Effluent	% Removal	Summer	Winter	Average	Summer	Winter	Average	Summer	Winter	Average	Summer	Winter	Average Daily	Summer	Winter	Average Daily	Summer	Winter				
January	0.057			85.5	3.7	96%			4.4			1.00						138									
February	0.048			48.7	2.3	95%			3.3			0.63						107									
March	0.048			58.3	2.3	96%			1.1			1.37						24									
April	0.045			58.8	2.3	96%			1.4			0.91						89									
May	0.042			47.1	2.8	94%			2.6			1.39						971	E								
June	0.050			45.6	3.1	93%			4.9			2.52	E					31									
July	0.030			34.9	2.6	93%			2.2			3.20	E					776	E								
August	0.030			41.0	3.3	92%			3.9			4.22	E					90									
September	0.075			120.5	3.0	98%			14.2	E		3.26	E					38									
October	0.034			45.4	1.5	97%			2.6			2.33	E					220	E								
November	0.035			50.4	2.2	96%			3.4			1.74						491									
December	0.035			48.8	3.9	92%			4.3			2.10						385									
Maximum	0.08	0.1	0.1		3.9		8.3	8.3	14.2	8.3	8.3	4.22	2.0	3.0	971	200	2000										
Max as % Limit	75%				47%				171%			211%						486%									
Average	0.04				2.7				4.0			2.06						280									
3 Month > Limit?	No																										

Plant Loading Summary



Ohio Township Sanitary Authority

Collection System Facilities

TREATMENT PLANT	Design Capacity (MGD)	Biological Treatment	Owner	Operator
Windy Knoll STP	0.1	Extended Aeration	OTSA	Contractor
<u>Pump Station</u>	<u>Peak Capacity</u>	<u>Avg Daily Flow</u>	<u>Owner</u>	<u>Operator</u>
None				
<u>Equalization Basin</u>	<u>Capacity</u>	<u>Location</u>	<u>Owner</u>	<u>Operator</u>
None				

Sewer Maintenance Information

<i>Service Community</i>	<i>Maintained By:</i>	<i>Mainten. Done:</i>	<i>Equipment Source</i>	<i>I/I Removal</i>	<i>I/I Flow Monitor</i>
Ohio Township	Contractor	As-needed	No Data	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Ohio Township Sanitary Authority

Intermunicipal Agreements

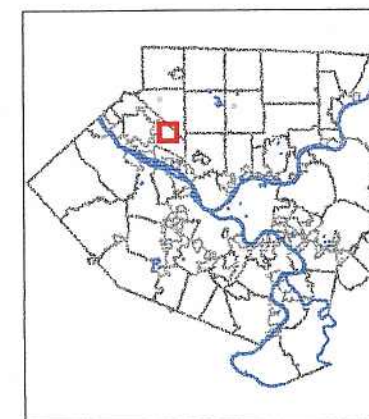
Agreement With	Date Enacted	Agreement Description	Expiration Date	Flow Limits (mgd)	Rate and Surcharge Provisions	Sampling Provisions	Flow Monitoring Provisions	Dispute Resol. Procedure	Basis of Cost Allocation
Franklin Park	Agreement not available	Agreement for Bear Run interceptor		Yes					Based on the percentage of flow contributed by the municipality
McCandless Township	1970	Agreement for Lowries Run area		Yes				Arbitration	Based on the percentage of flow contributed by the municipality
Ross Township	1970	Agreement for Lowries Run		Yes				Arbitration	Based on the percentage of flow contributed by the municipality

Ohio Township Sanitary Authority

Water Pollution Control Facility
Service Area and Collection System

Allegheny County
Department of Economic Development

Allegheny County, PA



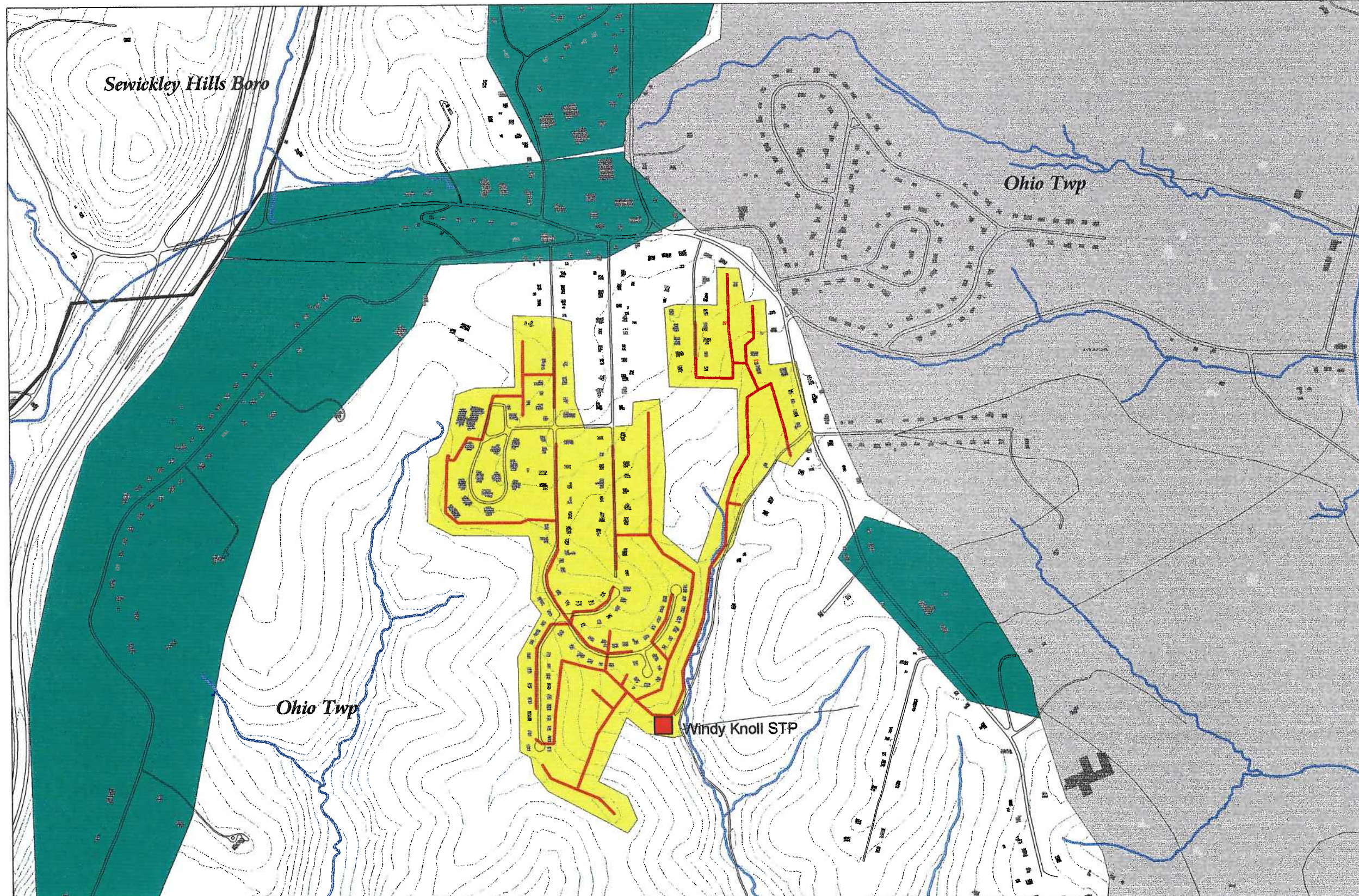
200 0 200 400 Feet

- Public Treatment Facility
- Existing STP
- Municipal Boundary
- Major Road
- Contour
- Hydrologic Feature
- Building
- Collection System
- Separate
- Trunk Line
- On - Lot Problem Area
- ALCOSAN Service Area



Not Field Verified

Source: NIRA Consulting Engineers, Inc.



Municipality of Penn Hills

The Municipality of Penn Hills (MPH) owns and maintains approximately 500 miles of interceptor and collector sewers, two treatment plants, 10 pump stations and six equalization basins. The MPH serves 95 percent of the properties in Penn Hills equating to a service population of 48,500 (1997). About 77 percent of the served population are customers to the ALCOSAN system, and the remainder are served by two Penn Hills wastewater treatment facilities; the Plum Creek Sewage Treatment Plant (22 percent), and the Lincoln Road Sewage Treatment Plant (1 percent).

The Plum Creek Sewage Treatment Plant (STP) accepts and treats sewage from 8,906 customers from Penn Hills and Plum Borough. The plant is a 3.7-mgd extended aeration treatment facility and it discharges to the Allegheny River, a warm water fishery. In 1997, the average annual daily flow to the plant was 1.905 mgd and the average annual organic loading was 1,861 lb CBOD₅/day. The Plum Creek STP treats all flows received at the plant, and has exceeded its maximum instantaneous flow limit of 9.25 mgd on occasion with no impact on plant operations.

Although the Penn Hills population is declining, there is potential for growth in the Plum Creek watershed. Plum Borough is currently negotiating with Penn Hills for additional capacity at the Plum Creek STP. Since there are hydraulic restrictions in the Plum Creek interceptor, Plum Borough would need to build their own interceptor line in the Plum Creek watershed. If Penn Hills agrees to sell Plum additional capacity, Penn Hills will need to build an equalization tank to accommodate high wet-weather flows and I/I. In 1993, a Corrective Action Plan was approved for Penn Hills for the Plum Creek watershed. To date, MPH has conducted extensive flow monitoring, manhole inspections, dye testing, and internal television inspections to reduce I/I.

The Plum Creek service area population of approximately 24,150 is projected to increase to approximately 27,900 by 2015. Based on the 2015 population increase, the hydraulic and organic loading to the treatment plant are expected to increase by 15 percent. The hydraulic loading is projected to increase to approximately 2.2 mgd, and the organic loading is projected to increase to approximately 2,100 lb CBOD₅/day. The hydraulic and organic loading capacities of the plant appear to be adequate for projected average daily flow and loading conditions in 2015.

The Lincoln Road STP is a 0.24-mgd extended aeration plant that serves approximately 209 customers located in Penn Hills. It has a permitted organic loading of 408 lb CBOD₅/day. The treated effluent is then discharged into Shades Run, a tributary to the Allegheny River. In 1997, the average annual daily flow to the plant was 0.087 mgd and the average annual organic loading was 141 lb CBOD₅/day. The Lincoln Road service area population of approximately 541 is projected to increase to approximately 580 by 2015.

Based on the 2015 population increase, the hydraulic and organic loadings are expected to increase by six percent. The hydraulic loading is projected to increase to approximately 0.09 mgd, and the organic loading is projected to increase to approximately 150 lb CBOD₅/day. The hydraulic and organic loading capacities of the plant appear to be adequate for projected average daily flow and loading conditions in 2015.

Penn Hills Water Pollution Control Department has a staff of 22 including 12 certified operators and seven maintenance workers. The Plum Creek STP is manned round-the-clock and an operator checks the Lincoln Road STP daily. There is a written maintenance program that consists of daily checklists and logs for each shift and identifies monthly, quarterly, and semi-annual tasks. The Lincoln Road STP is checked on a daily basis by one of the operators.

Penn Hills currently contracts out the operations of its ten pump stations. Four pump stations are located in the Plum Creek and the Lincoln Road watersheds - Plum Creek, Jade, Paxico, and Meadow pump stations; the rest are tributary to the ALCOSAN system. The MPH completed major modifications to the pump stations in 1992 including the installation of telemetry and alarms, back-up generators, and ventilation upgrading.

MPH has a preventative maintenance program on the collection system and has dedicated a four-man crew to flushing and cleaning the sewers. They clean approximately one-fourth of the system every year and televise approximately 20,000 l. f. per year. In an emergency situation, MPH is able to supplement the crew with additional Water Pollution Control Department employees. The Plum Borough Municipal Authority (PBMA) is responsible for sanitary sewers located in Plum Borough. All sewers are cleaned and maintained on a regular schedule. Areas where problems frequently occur are inspected more often. The majority of the PBMA sanitary sewer system is eight years old and is in very good condition.

Prior to 1996, MPH operated three additional STP's - Sandy Creek, Gascola, and Long Road. A Federal Court Order issued in 1996 ordered Penn Hills to abandon these plants. They have since been converted into flow equalization facilities that discharge to the ALCOSAN STP. There are three additional equalization tanks tributary to the ALCOSAN system. These are located at the Lincoln Road pump station, the former Jefferson Road pump station, and the former Rodi Road pump station. Flow to ALCOSAN is limited and each tank has an overflow in case the tank becomes full.

There are two Sanitary Sewer Overflow (SSO) locations within Penn Hills. A-45 is an SSO in Verona that serves approximately 365 homes from Penn Hills and Verona. TR-05 is an SSO in Wilkins Township that serves approximately 110 homes from Penn Hills, most of Wilkins Township, and a portion of Churchill. It has been proposed to seal both SSOs and send the flow to ALCOSAN.

Municipality of Penn Hills

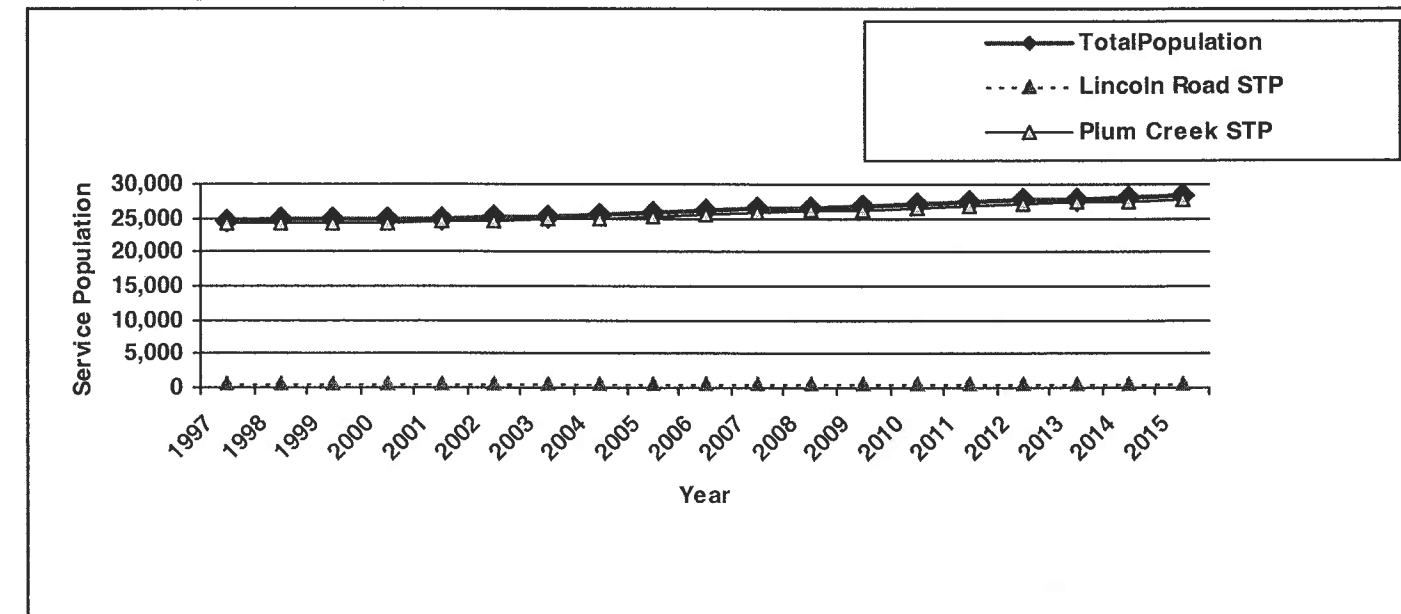
Service Area Summary

POTW Name	1997 Service Population	2015 Service Population	Municipality	Type Of Sewer System
Lincoln Road STP	541	575	Penn Hills, Municipality of	Separate
Plum Creek STP	24150	27859	Penn Hills, Municipality of Plum Borough	Separate

Treatment Process Summary

POTW Name	Equalization	Screening	Comminution	Grit Removal	Prechlorination	Primary Treatment	Activated Sludge	Extended Aeration	Contact Stabilization	Trickling Filter	Disinfection	Dechlorination	Filtration	Reaeration	Thickening	Aerobic Digestion	Anaerobic Digestion	Line Stabilization	Composting	Thermal Processing	Dewatering	Land Application	Landfill	Incineration	Haul to other STP	Odor Control
Lincoln Road STP																										
Plum Creek STP																										

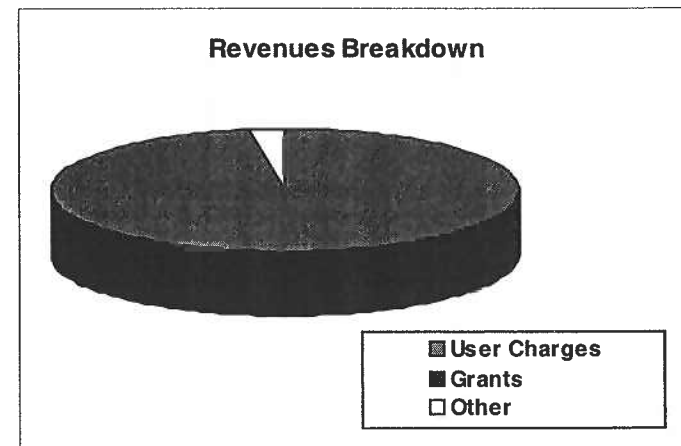
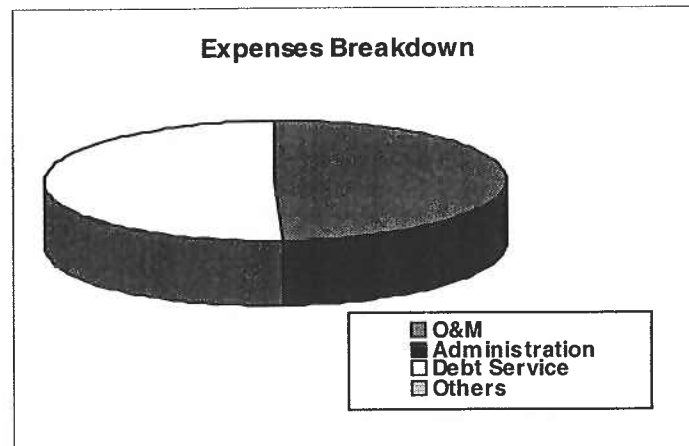
Service Population Projections



Municipality of Penn Hills

Sewer Use Ordinances

Municipality	Corrective Action Plan	Grease Trap Requirement	Industrial Pretreatment Program	Illicit Connection Inspection At Sale	Surcharge
Penn Hills, Municipality of	Yes; Plum Creek watershed	Yes	ALCOSAN; only areas served by ALCOSAN	Yes, dye testing	Yes
Plum Borough	Yes	Yes, required at restaurants	ALCOSAN	Yes, dye testing	

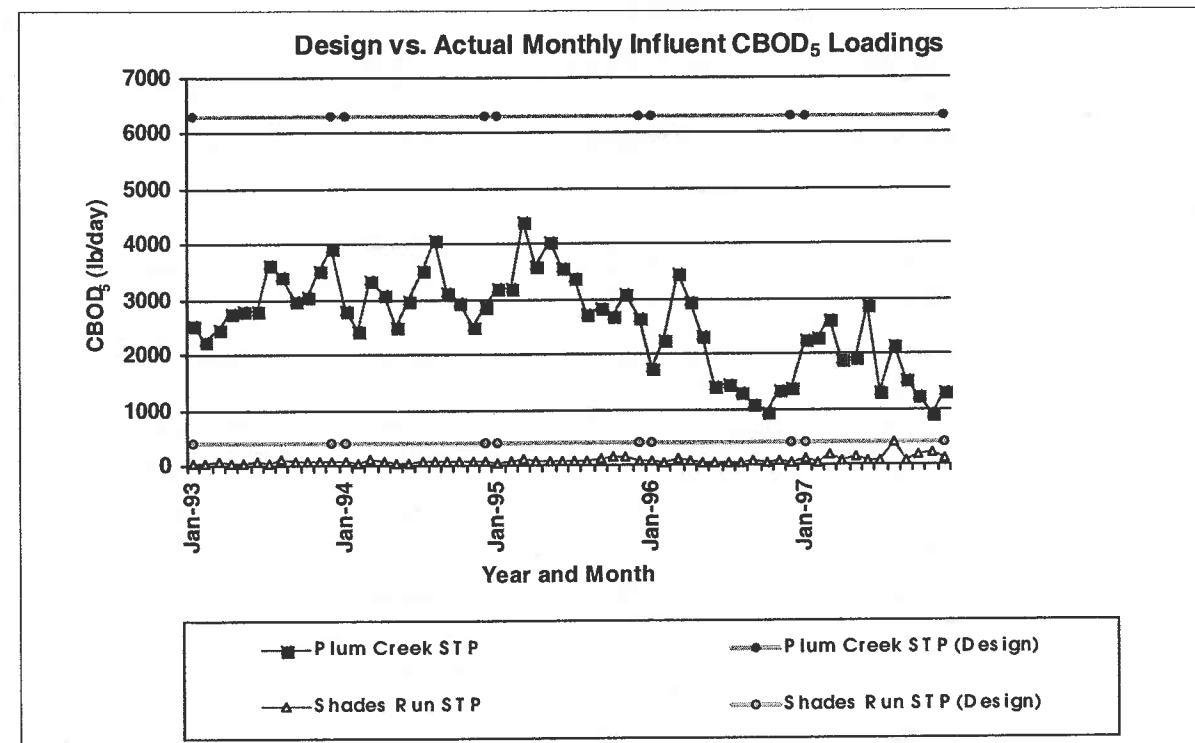
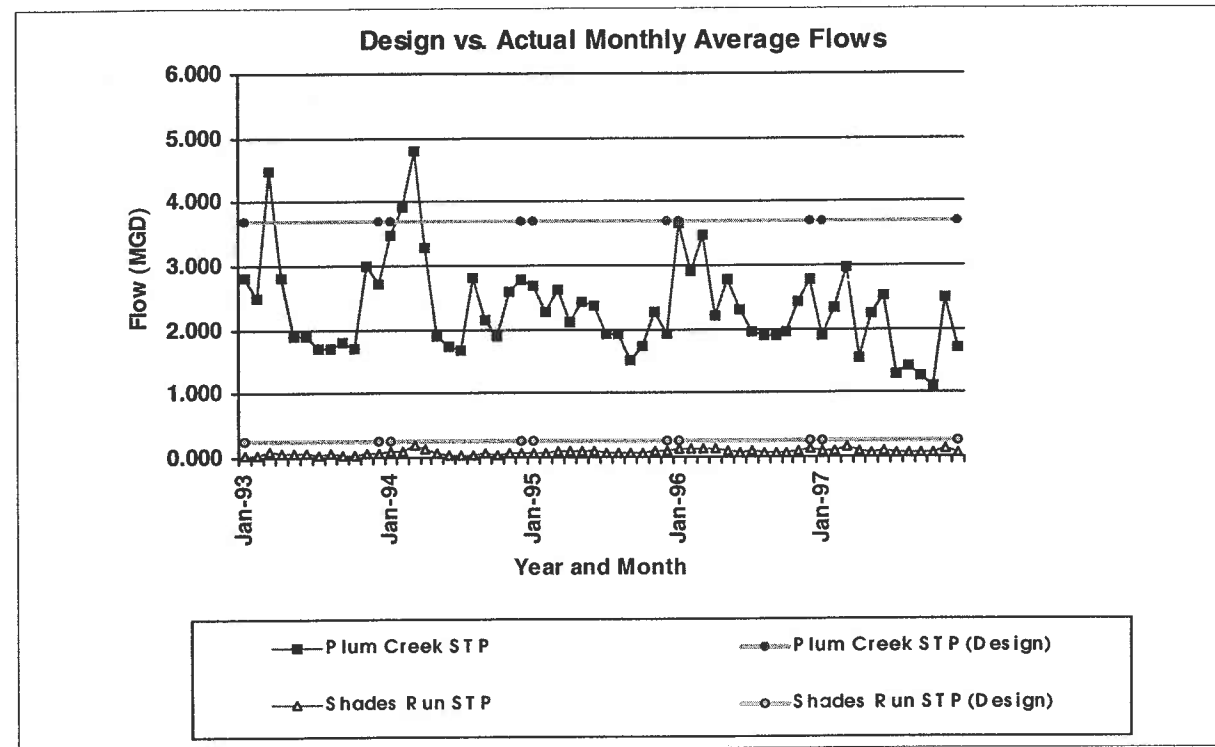


Financial Information

REVENUES		
User Charges:		\$8,218,725
Grants:		\$1,355
Other:		\$220,000
Total Revenues		\$8,440,080
EXPENSES		
Operations and Maintenance		\$3,631,015
Administration:		\$0
Debt Service:		\$3,695,778
Other:		\$0
Total Expenses		\$7,326,793
Surplus(Deficit):		\$1,113,287
Debt Service Coverage Ratio		1.30
Information Source:	YEAR: 1998	Actual/Budgeted
Revenues	Penn Hills 1999 Fiscal Plan	Budgeted
Expenses	Penn Hills 1999 Fiscal Plan	Budgeted

Municipality of Penn Hills

Plant Loading Summary



Municipality of Penn Hills

Collection System Facilities

TREATMENT PLANT	Design Capacity (MGD)	Biological Treatment	Owner	Operator
Lincoln Road STP	0.24	Extended Aeration	PNHLS	PNHLS
<u>Pump Station</u>	<u>Peak Capacity</u>	<u>Avg Daily Flow</u>	<u>Owner</u>	<u>Operator</u>
Paxico	95 gpm		PNHLS	Contractor
<u>Equalization Basin</u>	<u>Capacity</u>	<u>Location</u>	<u>Owner</u>	<u>Operator</u>
None				

TREATMENT PLANT	Design Capacity (MGD)	Biological Treatment	Owner	Operator
Plum Creek STP	3.7	Extended Aeration	PNHLS	PNHLS
<u>Pump Station</u>	<u>Peak Capacity</u>	<u>Avg Daily Flow</u>	<u>Owner</u>	<u>Operator</u>
East Oakmont	300 gpm		PBMA	PBMA
Jade	100 gpm		PNHLS	Contractor
Meadow	22 gpm		PNHLS	Contractor
Plum Creek	1,200 gpm		PNHLS	Contractor
Ramparts	180 gpm		PBMA	PBMA
<u>Equalization Basin</u>	<u>Capacity</u>	<u>Location</u>	<u>Owner</u>	<u>Operator</u>
None				

Sewer Maintenance Information

<i>Service Community</i>	<i>Maintained By:</i>	<i>Mainten. Done:</i>	<i>Equipment Source</i>	<i>I/I Removal</i>	<i>I/I Flow Monitor</i>
Penn Hills, Municipality of	MPH, Contractor	Routine	Municipality, COG	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Plum Borough	PBMA, Contractor	Routine	Authority	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Municipality of Penn Hills

Intermunicipal Agreements

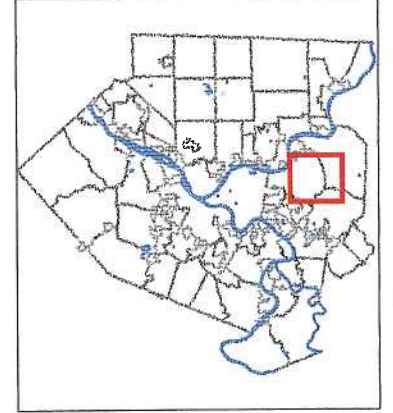
Agreement With	Date Enacted	Agreement Description	Expiration Date	Flow Limits (mgd)	Rate and Surcharge Provisions	Sampling Provisions	Flow Monitoring Provisions	Dispute Resol. Procedure	Basis of Cost Allocation
ALCOSAN	1995	Penn Hills	Bonds + 1 year	4.58 mgd	Yes	As-needed	Yes	No	Flow Meter
City of Pittsburgh	Agreement not available	Agreement for conveyance of sewage from Penn Hills into the City of Pittsburgh							
Plum Borough	07/25/88	Agreement for Plum to plan, design, finance, and construct sewer lines to convey sewage to Penn Hills / Plum Creek Plant		300 gallons per EDU per day, on an average monthly flow of 2 consecutive months	Plum shall pay a premium to Penn Hills for the excess total water contribution	Has option to require periodic sampling but doesn't enforce it	Excess flows monitored by meters	Arbitration	Based on water consumption
Verona Borough	07/09/68	Penn Hills to pay Verona Boro \$10,000 for connections in South Verona Hills, Verona Rd., Shannon Rd., Indian Creek, Fifth St., etc.		None					
Verona Borough	03/05/84	Penn Hills to pay Verona \$50.00 tap in fee for each connection in Scenic Heights area. Penn Hills to pay Verona \$45,000 for reconstruction costs for the Wildwood Ave. sewer. Penn Hills to pay Verona \$10.00 annual fee for all users into the Wildwood Ave. sewer		None					
Verona Borough	1927	Original service agreement for Penn Hills users connected to Verona Boro sewers							
Wilkins, Township of	10/04/65	Agreement that the portion of the two municipalities known as "Eastmont" has its sanitary sewer bypassed to an interceptor known as Thompson Run Sewer to be eventually treated by ALCOSAN		None		None	None	None	Penn Hills pays pro-rated share (1.5% cost Thompson Run Intercep, 17% constr cost Eastmont Sewage Disp. Plant by-pass line & maint./repair cost trunk line extend from Penn Hills-Wilkins boundary); share of cost (1.5% maint./repair cost Thompson Run Intercept Sewer)
Wilkinsburg Borough	Agreement not available	Agreement that Penn Hills will convey sewage from a portion of Wilkinsburg Borough through Penn Hills, to the ALCOSAN collection system							

Municipality of Penn Hills

Water Pollution Control Facilities Service Areas and Collection Systems

Allegheny County
Department of Economic Development

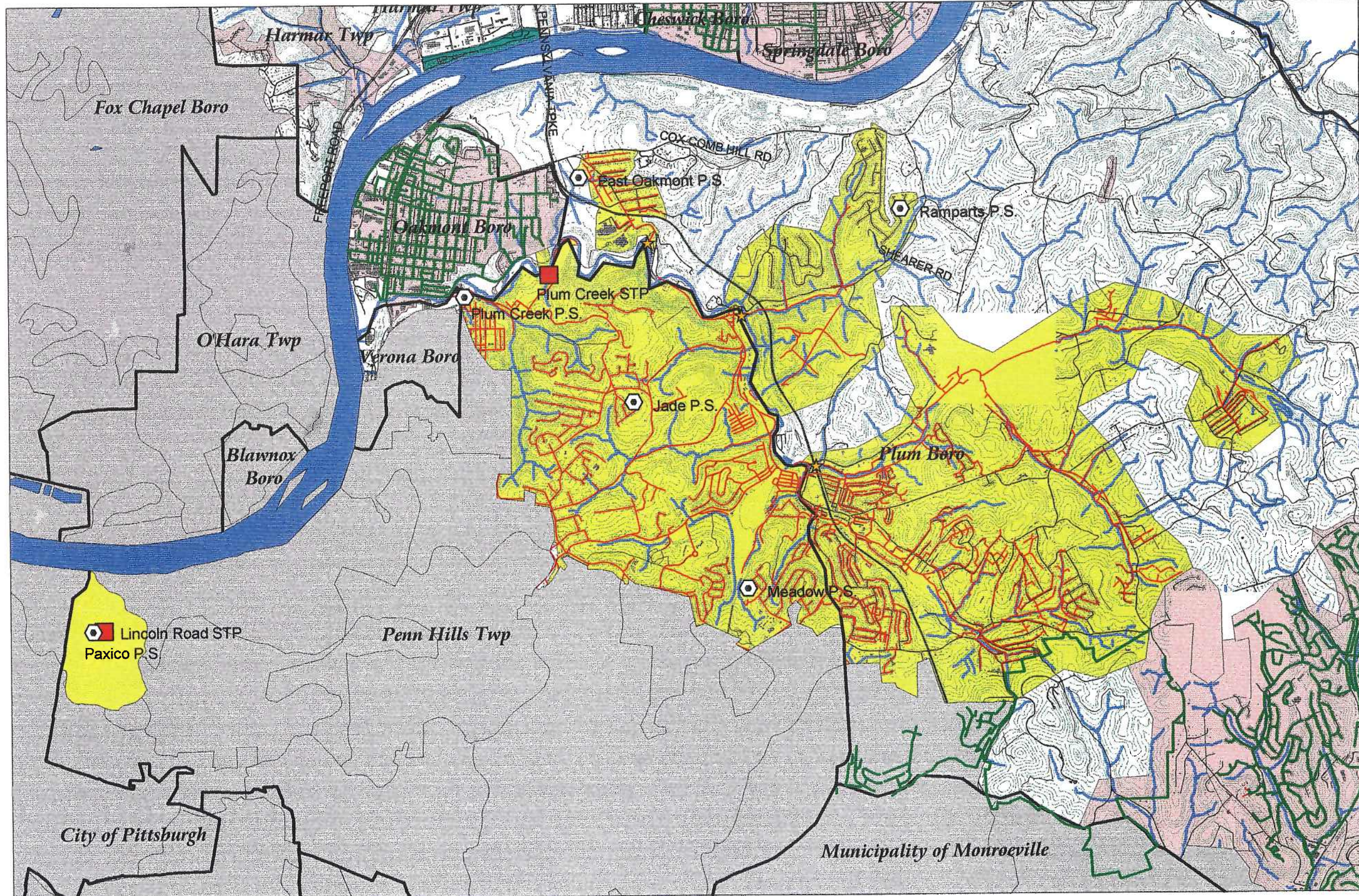
Allegheny County, PA



1000 0 1000 2000 Feet

- Public Treatment Facility**
- Existing STP
- Pump Station
- Intermunicipal Connection
- Municipal Boundary
- Major Road
- Contour
- Hydrologic Feature
- Building
- Collection System**
- Separate
- On - Lot Problem Area
- Pipe Type**
- Collector
- Force Main
- Trunk
- Neighboring Service Area
- Neighboring Collection System
- ALCOSAN Service Area

Not Field Verified
Source: Penn Hills Municipal Map



Pennsbury Village Borough

Pennsbury Village Borough operates the Pennsbury Village Sewage Treatment Plant (STP) serving approximately 473 customers in the Pennsbury Village Borough. The Pennsbury Village STP is a 0.17-mgd extended aeration package plant that discharges to an unnamed tributary of Cambells Run. The average monthly flow in 1997 was 0.06 mgd.

The Pennsbury Village STP was built in the late 1960's and has had no ongoing problems, major plant rehabilitation or equipment replacement. The only notable item was the replacement of the comminutor at the plant with a master aerator grinder. Plant processes at the plant include aeration, settling, and disinfection using chlorine tablets. Sludge is periodically wasted to the sludge holding tank, otherwise it is returned to the aeration tanks. No future capacity expansions are anticipated at this time.

The Pennsbury Village Borough owns and maintains the separate 8-inch sanitary sewer lines. Maintenance (e.g., cleaning) is completed by contracted personnel and is done on an as-needed basis; however, the Borough does not have a formal I/I program. The Borough does not own any of its own equipment and so all sewer maintenance equipment is rented through the Chartiers Council of Governments (CCOG). Daily operation and maintenance at the Pennsbury Village STP including flow monitoring is completed by the one full time operator as recommended by manufacturer's instructions. Any laboratory testing is sent to an outside laboratory. There is no formal renewal and replacement program for major equipment. Borough funds are allocated on an as-needed basis for equipment needs. There is one pump station for the Pennsbury Village service area that was installed in the late 1960's when the plant was built.

The Pennsbury Village Borough service area population of approximately 775 is projected to increase to approximately 780 by 2015. Based on the 2015 population increase, the hydraulic loading to the treatment plant is expected to increase by one percent. The hydraulic loading is projected to increase to approximately 0.060 mgd. The hydraulic loading capacity of the plant appears to be adequate for projected average daily flow condition in 2015.

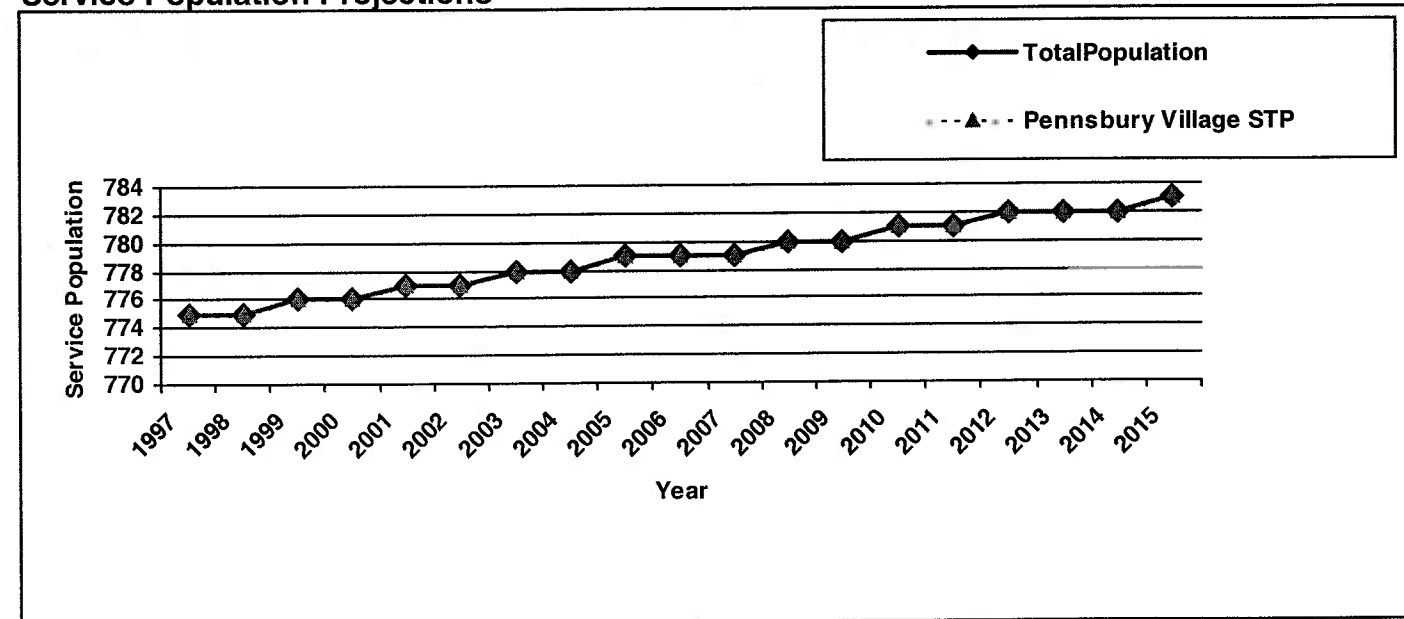
Service Area Summary

POTW Name	1997 Service Population	2015 Service Population	Municipality	Type Of Sewer System
Pennsbury Village STP	775	783	Pennsbury Village Borough	Separate

Treatment Process Summary

POTW Name	Equalization	Screening	Comminution	Grit Removal	Prechlorination	Primary Treatment	Activated Sludge	Extended Aeration	Contact Aeration	Trickling Filter	Disinfection	Dechlorination	Filtration	Reaeration	Thickening	Aerobic Digestion	Anaerobic Digestion	Lime Stabilization	Composting	Thermal Processing	Dewatering	Land Application	Landfill	Incineration	Haul to other STP	Odor Control
Pennsbury Village STP		■				■	■				■															■

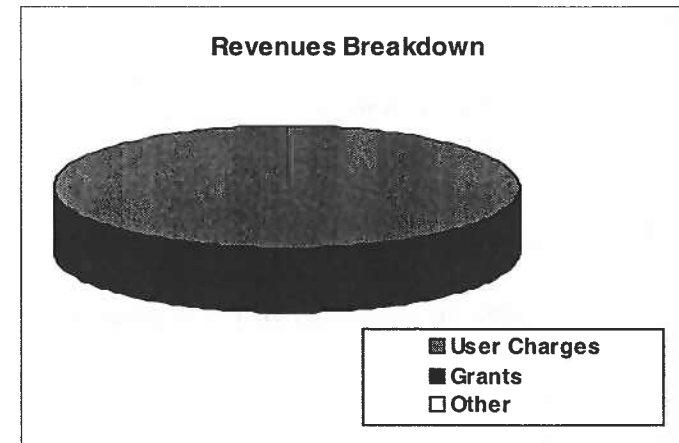
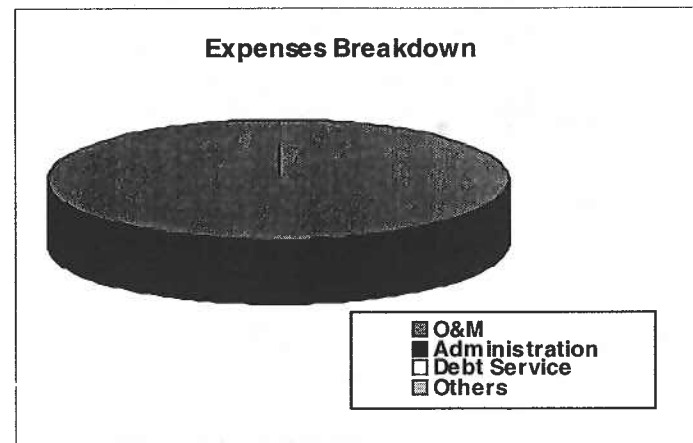
Service Population Projections



Pennsbury Village Borough

Sewer Use Ordinances

Municipality	Corrective Action Plan	Grease Trap Requirement	Industrial Pretreatment Program	Illicit Connection Inspection At Sale	Surcharge
Pennsbury Village Borough	No	No	No	No	



Financial Information

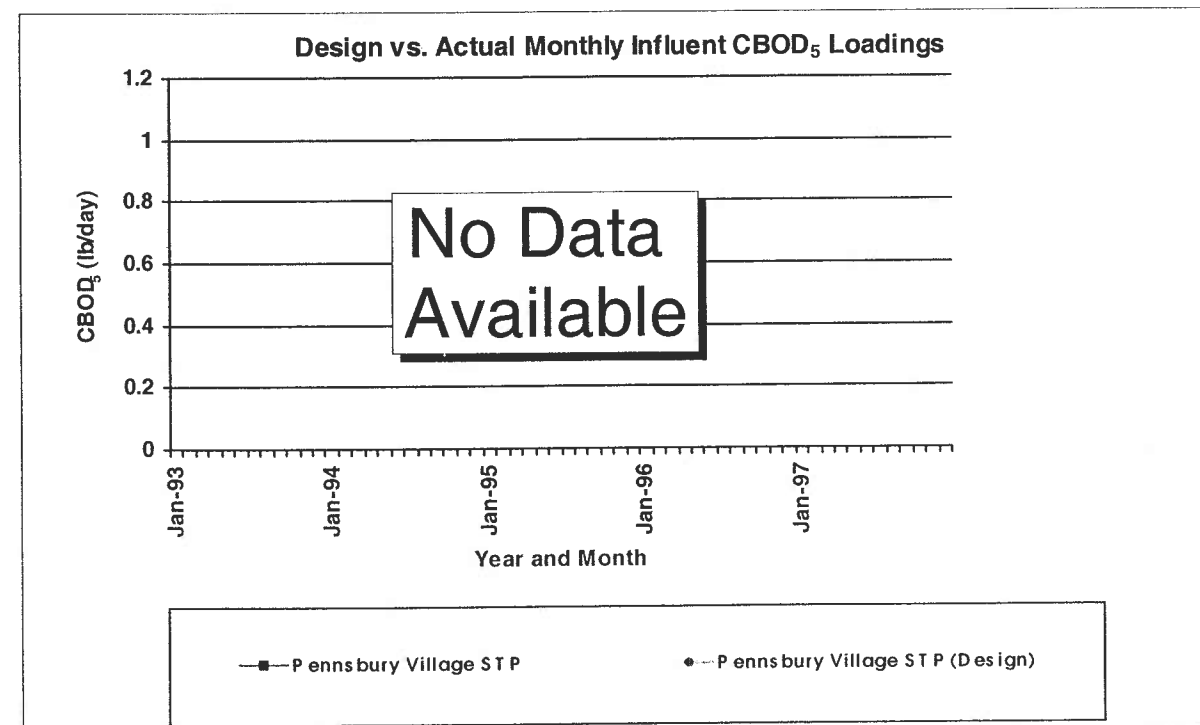
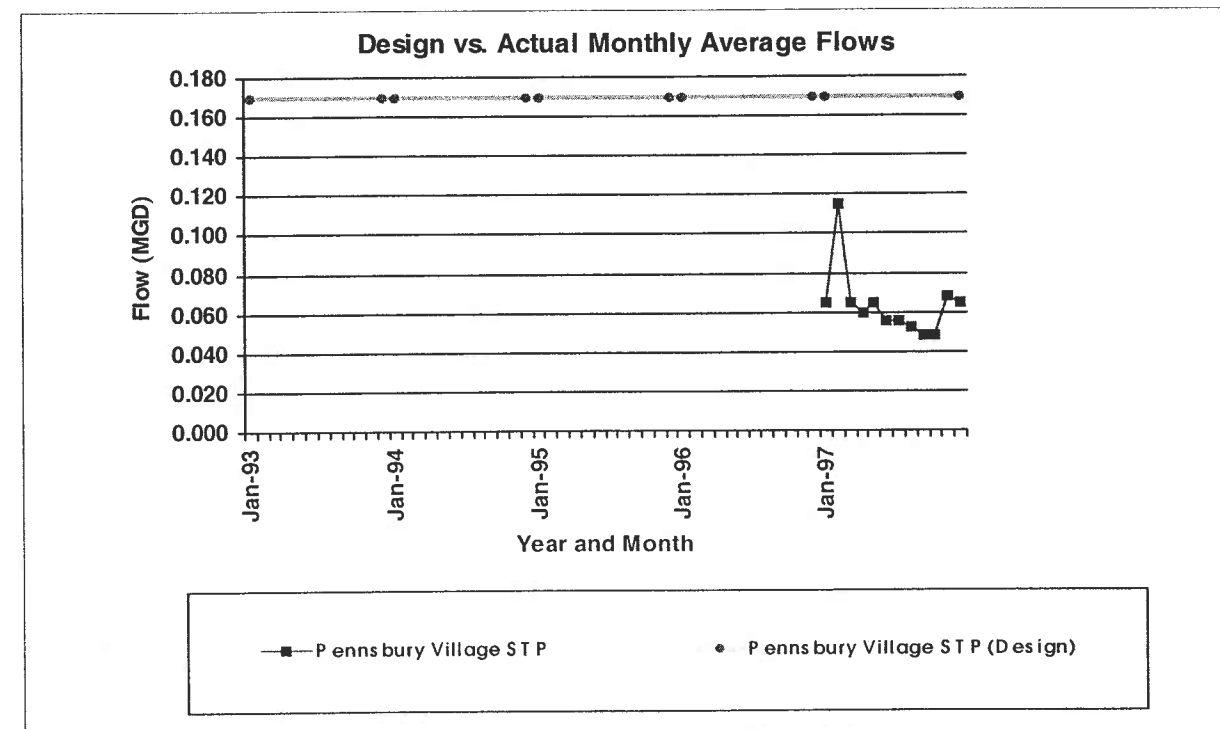
REVENUES		
User Charges:		\$39,495
Grants:		\$0
Other:		\$0
Total Revenues		\$39,495
EXPENSES		
Operations and Maintenance		\$39,495
Administration:		\$0
Debt Service:		\$0
Other:		\$0
Total Expenses		\$39,495
Surplus(Deficit):		\$0
Debt Service Coverage Ratio		
	YEAR:	1995
		Actual/Budgeted
Information Source:		
Revenues	Local Government Financial Statistics (PaDCED)	Actual
Expenses	Local Government Financial Statistics (PaDCED)	Actual

Pennsbury Village Borough

1997 Plant Performance

Pennsbury Village STP	Average Daily Flow (mgd)			CBOD ₅ (lb/Day)			TSS (lb/Day) Effluent			Effluent Coliform (Col./100ml)		
	Monthly	Summer	Winter	Average Effluent	Summer	Winter	Average	Summer	Winter	Average Daily	Summer	Winter
January	0.065			2			2			27		
February	0.115			3			4			9		
March	0.065			2			3			160		
April	0.060			2			4			273		
May	0.065			2			3			55		
June	0.055			2			6			79		
July	0.055			1			4			241	E	
August	0.052			1			4			20		
September	0.048			1			5			45		
October	0.048			1			6			1		
November	0.068			1			15			3		
December	0.065			1			11			1		
Maximum	0.12	0.17	0.17	2.87	35	35	15	42	42	273	200	2000
Max as %Limit	68%			8%			35%			136%		
Average	0.06			2			6			76		
3 Month > Limit?	No											

Plant Loading Summary



Pennsbury Village Borough

Collection System Facilities

TREATMENT PLANT	Design Capacity (MGD)	Biological Treatment	Owner	Operator
Pennsbury Village STP	0.17	Extended Aeration	PNSBRY	PNSBRY

Pump Station	Peak Capacity	Avg Daily Flow	Owner	Operator
Unnamed			PNSBRY	Contractor

Equalization Basin	Capacity	Location	Owner	Operator
None				

Sewer Maintenance Information

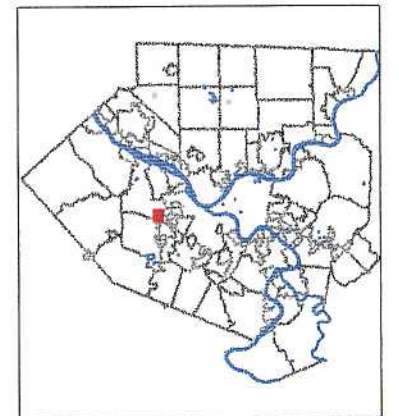
<i>Service Community</i>	<i>Maintained By:</i>	<i>Mainten. Done:</i>	<i>Equipment Source</i>	<i>I/I Removal</i>	<i>I/I Flow Monitor</i>
Pennsbury Village Borough	Contractor	As-needed	None	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Pennsbury Village Borough

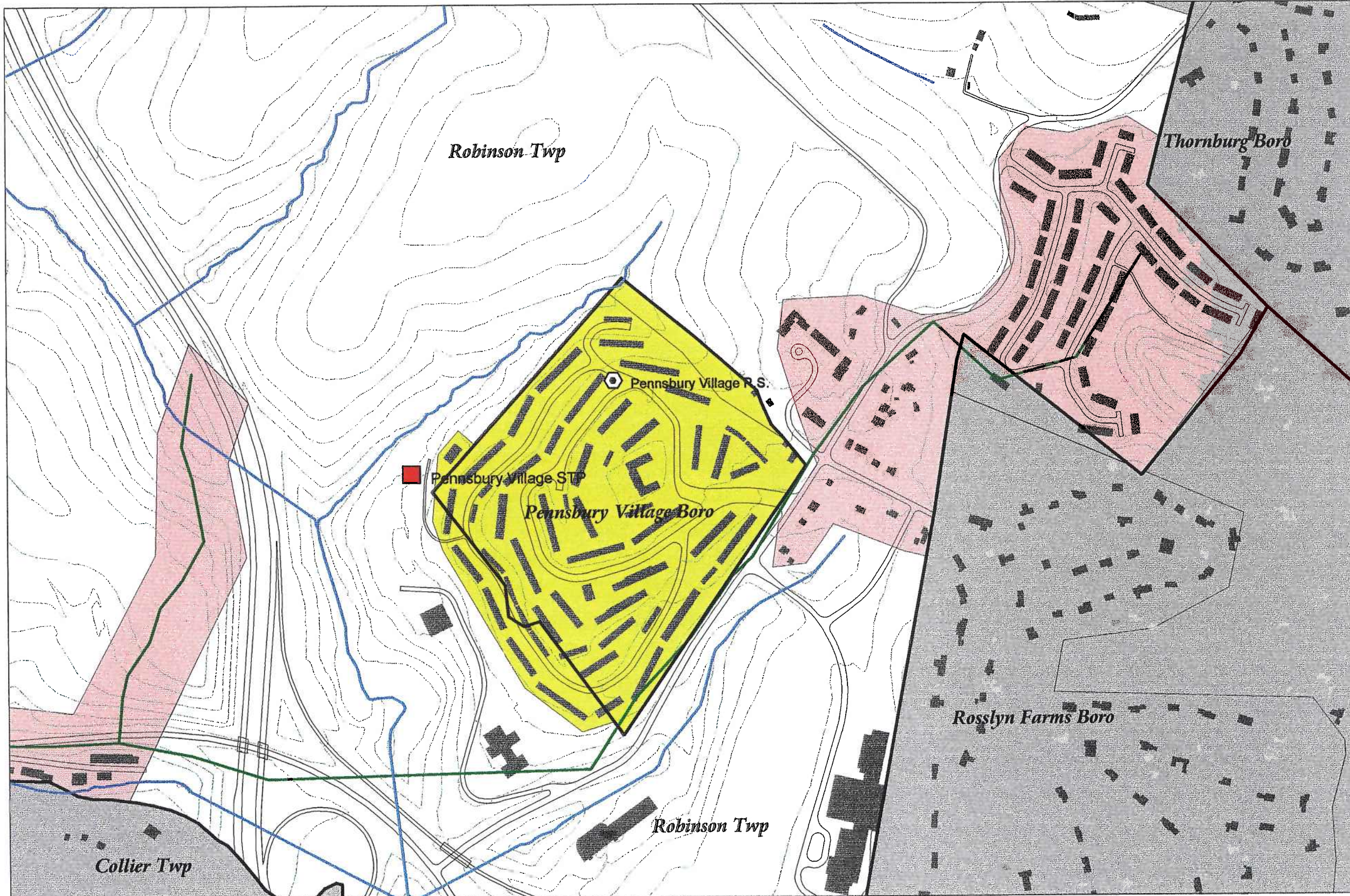
Water Pollution Control Facility Service Area and Collection System

Allegheny County
Department of Economic Development

Allegheny County, PA



100 0 100 200 Feet



- Public Treatment Facility
- Existing STP
- Pump Station
- Municipal Boundary
- Major Road
- Contour
- Hydrologic Feature
- Building
- Collection System
- Separate
- Neighboring Service Area
- Neighboring Collection System
- ALCOSAN Service Area

Not Field Verified

Source: NIRA Consulting Engineers, Inc.



Pleasant Hills Authority

The Pleasant Hills Authority (PHA) is a treatment and collection authority that serves approximately 9,337 customers from all of the Pleasant Hills Borough and parts of Baldwin Borough, Whitehall Borough, Bethel Park, South Park Township, Jefferson Hills Borough. A few businesses from West Mifflin are also served. PHA was created in 1952 to plan and provide wastewater treatment facilities for the Borough of Pleasant Hills. The plant is a 5.0-mgd conventional activated sludge treatment plant that is discharged to Lick Run, a tributary of Peters Creek which empties into the Monongahela River.

The Pleasant Hills STP capacity was expanded and upgraded in 1990 from 3.0 to 5.0 mgd to alleviate hydraulic overloading. It is permitted for a corresponding organic load of 7,004 lb CBOD₅/day. The expanded and upgraded wastewater treatment facility utilizes the original facilities in conjunction with additional raw sewage pumping, grit removal, primary clarification and secondary clarification at the first stage of the activated sludge process. The second stage includes second stage aeration and clarification. Lime is added prior to the second stage to maintain the alkalinity required for the nitrification process. A new chlorine contact tank with aeration to increase the dissolved oxygen is also provided. Sludge handling facilities include the original anaerobic digesters and sludge drying beds supplemented by a belt thickener and belt filter press. The average monthly flow to the Pleasant Hills Sewage Treatment Plant in 1997 was 2.53 mgd. The average monthly organic loading was 2,390 lb CBOD₅/day.

PHA owns and maintains the Pleasant Hills Sewage Treatment Plant (STP), 11.5 miles of interceptors, and two pump stations (Sunrise Drive and Lewis Run). Pleasant Hills Borough performs maintenance on the collection system within the Borough and the Tassel Lane Pump Station. In conformance with the Borough's Comprehensive Corrective Action Plan, eight road department personnel perform sewer maintenance. The Borough owns four flow monitors to monitor flows in various areas of the watershed. Pleasant Hills Borough is a member of the South Hills Area Council of Government (SHACOG). The Borough utilizes the SHACOG vector trucks, jet rodders, and television inspection equipment. Infiltration and inflow (I/I) removal studies were completed in the East Bruceton system in 1995. Surcharges, basement flooding, and overflows are being addressed and the Borough is considering the construction of an equalization basin. In addition, the Authority has proposed to replace the Colewood Drive and East Bruceton Road interceptor sewers.

The contributing sewers from Pleasant Hills Borough and parts of Baldwin Borough, Whitehall Borough, Bethel Park, South Park Township, and Jefferson Hills Borough are all separate sanitary sewers. Each of these municipalities owns and operates their own collection system. In 1983, the service area municipalities adopted corrective action plans to reduce the amount of infiltration and inflow (I/I) entering their respective systems. At the time, this system consisted of approximately 90 miles of sanitary sewers (including Pleasant Hills Borough). In 1993, the contributing municipalities updated their corrective action plans. In January 1994, the Authority submitted the revised corrective action plan to DEP. All of the contributing municipalities have an active I/I removal or sewer rehabilitation program as part of their corrective action plan.

Three pump stations serve the Pleasant Hills Authority service area and are located in Pleasant Hills Borough. These pump stations include the Lewis Run Pump Station, Sunrise Drive Pump Station, and Tassel Lane Pump Station. The Lewis Run Station has been completely rehabilitated and the pumping capacity increased from 1,400 to 2,400 gpm. The pumps are in good condition and receive regular maintenance. Due to excessive wet weather, two overflows occurred at the Lewis Run P.S. in 1997. A limited number of overflows have occurred, since the installation of the parallel, Lewis Run force main. The STP also overflowed twice during 1997 due to excessive wet weather. As previously discussed the Authority and participating municipalities are participating in corrective action plans in an attempt to alleviate future overflows.

The Pleasant Hills service area population of approximately 23,435 is projected to increase to approximately 28,500 by 2015. Based on the 2015 population increase, the hydraulic and organic loadings to the treatment plant are expected to increase by 22 percent. The hydraulic loading is projected to increase to approximately 3.08 mgd, and the organic loading is projected to increase to approximately 2,900 lb CBOD₅/day. The hydraulic and organic loading capacities of the plant appear to be adequate for projected average daily flow and loading conditions in 2015.

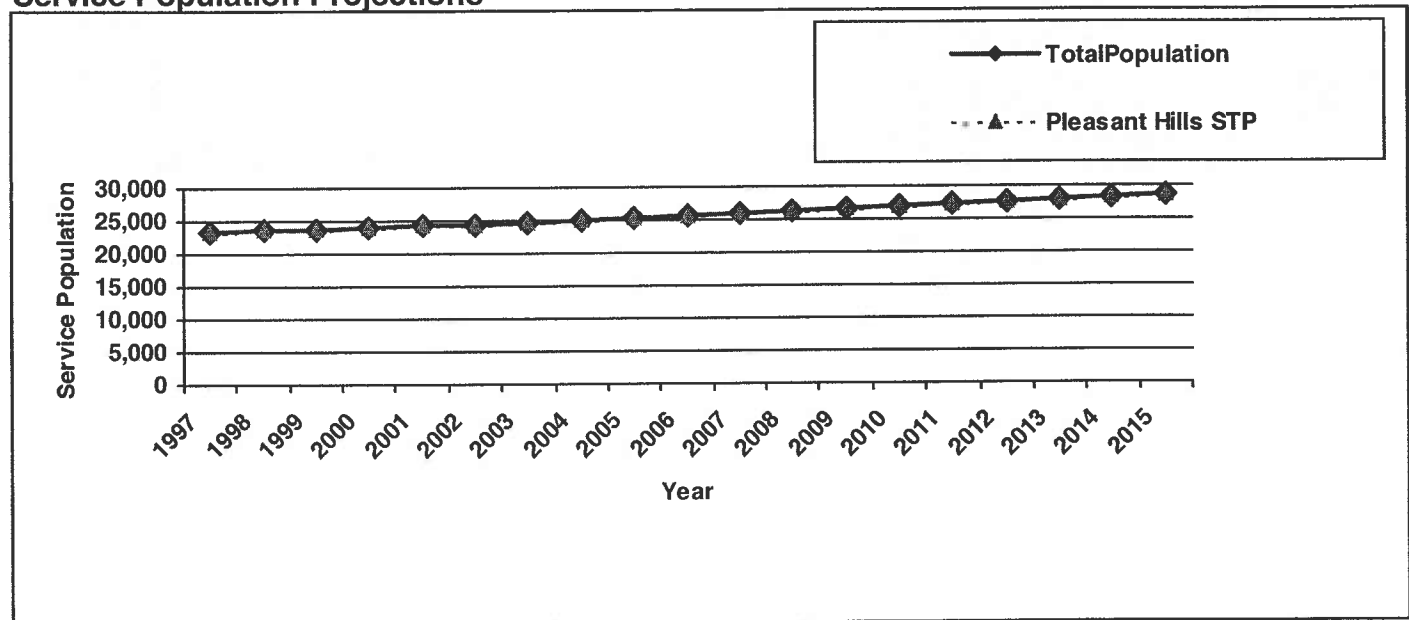
Service Area Summary

POTW Name	1997 Service Population	2015 Service Population	Municipality	Type Of Sewer System
Pleasant Hills STP	23435	28519	Baldwin Borough	Separate
			Bethel Park Borough	Separate
			Jefferson Hills Borough	Separate
			Pleasant Hills Borough	Separate
			South Park Township	Separate
			Whitehall Borough	Separate

Treatment Process Summary

POTW Name	Equalization	Screening	Comminution	Grit Removal	Prechlorination	Primary Treatment	Activated Sludge	Extended Aeration	Contact Aeration	Trickling Filter	Disinfection	Dechlorination	Filtration	Reaeration	Thickening	Aerobic Digestion	Anaerobic Digestion	Lime Stabilization	Composting	Thermal Processing	Dewatering	Land Application	Landfill	Incineration	Haul to other STP	Odor Control
Pleasant Hills STP																										

Service Population Projections



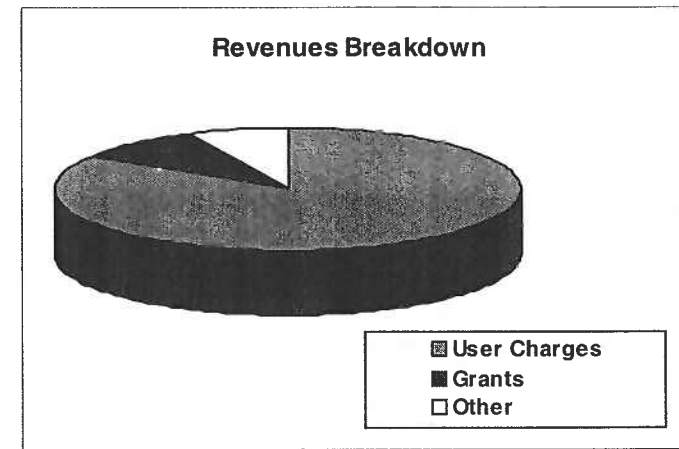
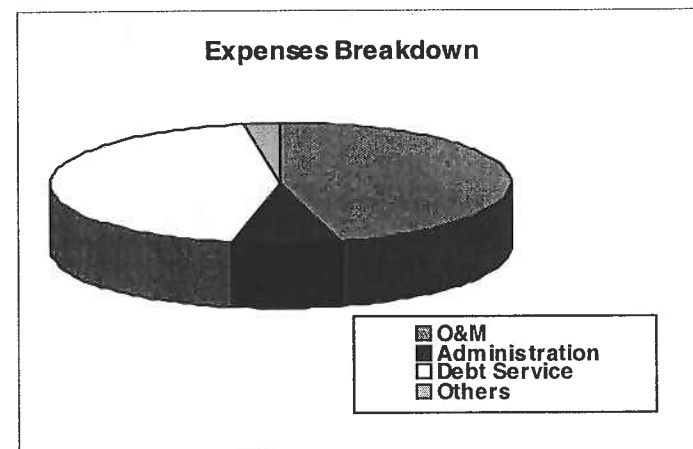
Pleasant Hills Authority

Sewer Use Ordinances

Municipality	Corrective Action Plan	Grease Trap Requirement	Industrial Pretreatment Program	Illicit Connection Inspection At Sale	Surcharge
Baldwin Borough	Yes		ALCOSAN	Yes	
Bethel Park Borough	Yes	Yes	ALCOSAN	Yes, dye testing	
Jefferson Hills Borough	Yes, for West Eliz. & Pleas. Hills STP service areas	Yes	Yes	Yes	No
Pleasant Hills Borough	Yes, original cap in '83, revised cap submitted in '94	Yes	Yes	Yes	No
South Park Township	Yes, for Piney Fork and Lick Run Watersheds	No	No industrial customers	Yes	
Whitehall Borough	Yes		ALCOSAN	Yes	

Financial Information

REVENUES		
User Charges:		\$2,415,957
Grants:		\$256,608
Other:		\$197,614
Total Revenues		\$2,870,179
EXPENSES		
Operations and Maintenance		\$948,053
Administration:		\$154,794
Debt Service:		\$913,700
Other:		\$51,979
Total Expenses		\$2,068,526
Surplus(Deficit):		\$801,653
Debt Service Coverage Ratio		1.88
YEAR:	1997	Actual/ Budgeted
Information Source:		
Revenues	Statistics For Municipal Authorities in PA	Actual
Expenses	Statistics For Municipal Authorities in PA	Actual

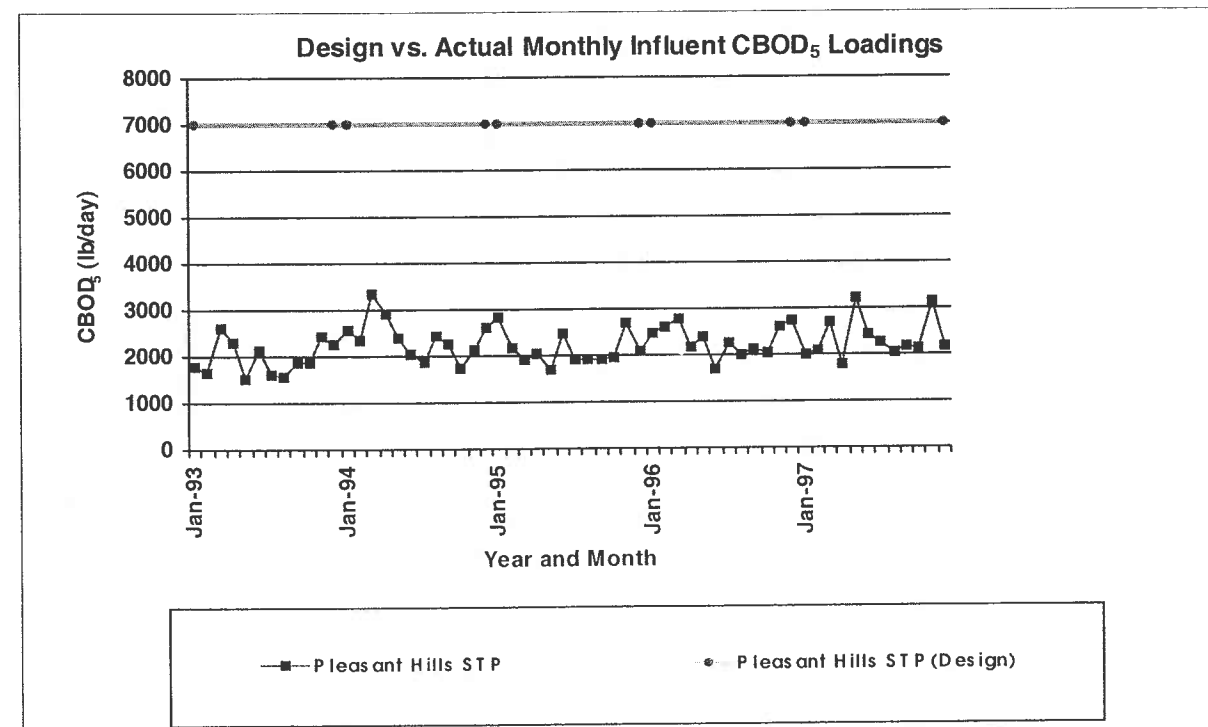
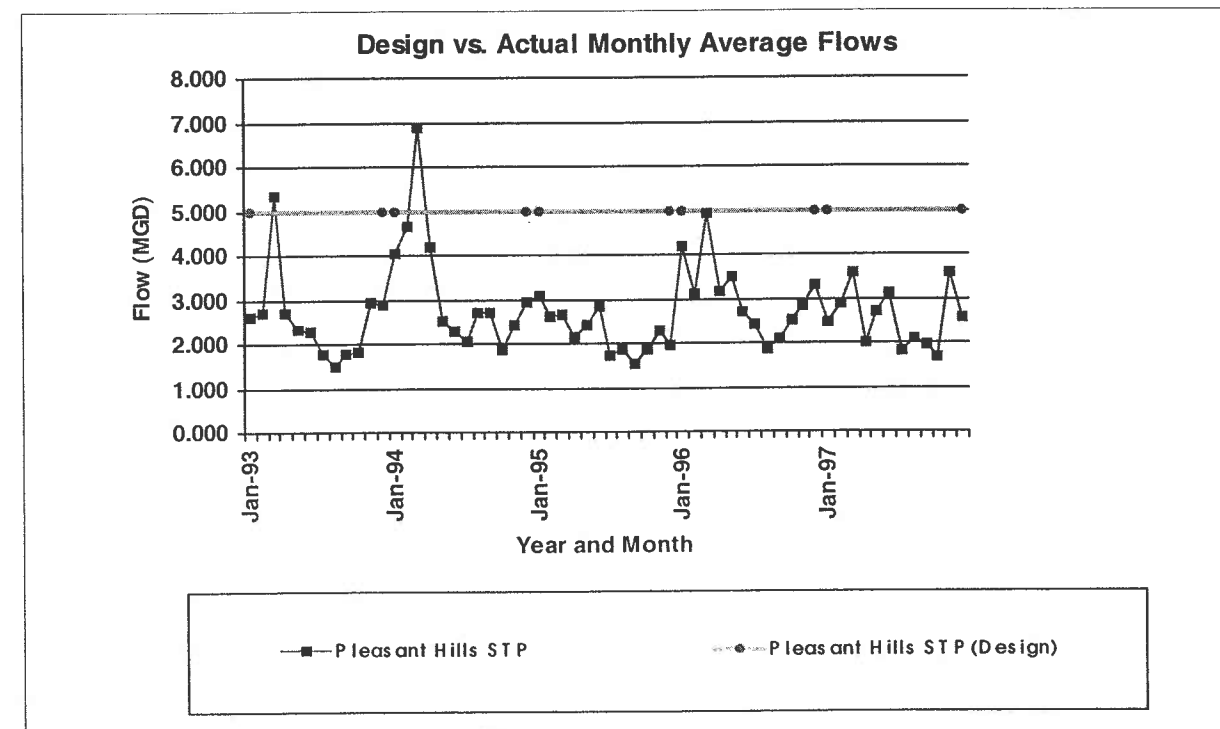


Pleasant Hills Authority

1997 Plant Performance

Pleasant Hills STP	Average Daily Flow (mgd)			CBOD ₅ (lb/Day)			Permit Limits			TSS (lb/Day) Effluent			Permit Limits			Effluent Ammonia Nitrogen (mg/l)			Permit Limits			Effluent Coliform (Col./100ml)			Permit Limits		
	Monthly	Summer	Winter	Monthly Influent	Average Effluent	% Removal	Summer	Winter	Average	Summer	Winter	Average	Summer	Winter	Average	Summer	Winter	Average Daily	Summer	Winter							
January	2.45			2,000	48	98%			159			nd						139									
February	2.86			2,100	63	97%			144			nd						54									
March	3.60			2,700	66	98%			163			nd						48									
April	1.99			1,800	38	98%			103			nd						84									
May	2.68			3,700	46	99%			172			nd						93									
June	3.14			2,430	58	98%			139			nd						52									
July	1.80			2,250	30	99%			97			nd						77									
August	2.09			2,050	43	98%			115			nd						78									
September	1.93			2,190	39	98%			123			nd						79									
October	1.68			2,110	26	99%			108			nd						122									
November	3.59			3,150	81	97%			274			nd						71									
December	2.55			2,190	nd	nd			182			nd						0									
Maximum	3.60	5.00	5.00		81		834	1043	274	1251	1251	nd	1.5	2.5	139	200	2000										
Max as % Limit	72%				10%				22%			nd						70%									
Average	2.53				49				148			nd						75									
3 Month > Limit?	No																										

Plant Loading Summary



Pleasant Hills Authority

Collection System Facilities

TREATMENT PLANT	Design Capacity (MGD)	Biological Treatment	Owner	Operator
Pleasant Hills STP	5	Activated Sludge	PHA	
<u>Pump Station</u>	<u>Peak Capacity</u>	<u>Avg Daily Flow</u>	<u>Owner</u>	<u>Operator</u>
Lewis Run	2,840 gpm		PHA	PHA
Sunrise Drive	700 gpm		PHA	PHA
Tassel Lane	100 gpm		Pleasant Hills B.	Pleasant Hills B.
<u>Equalization Basin</u>	<u>Capacity</u>	<u>Location</u>	<u>Owner</u>	<u>Operator</u>
None				

Sewer Maintenance Information

<i>Service Community</i>	<i>Maintained By:</i>	<i>Mainten. Done:</i>	<i>Equipment Source</i>	<i>I/I Removal</i>	<i>I/I Flow Monitor</i>
Baldwin Borough	Baldwin Borough	Routine	No Data	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Bethel Park Borough	BPMA	Routine	Authority, Public Works	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Jefferson Borough	Local Forces	Routine	COG	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Pleasant Hills Borough	PHMA	Routine	Authority, COG	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
South Park Township	Sewer Maintenance Staff	Routine	Sewer Maint., PWD, COG	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Whitehall Borough	Whitehall Borough	As-needed	No Data	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Pleasant Hills Authority

Intermunicipal Agreements

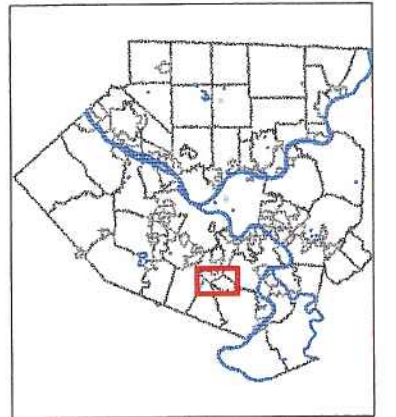
Agreement With	Date Enacted	Agreement Description	Expiration Date	Flow Limits (mgd)	Rate and Surcharge Provisions	Sampling Provisions	Flow Monitoring Provisions	Dispute Resol. Procedure	Basis of Cost Allocation
Baldwin, Borough of	06/01/91	Fifth Supplement of the original service agreement addressing '91 refinancing bonds issued in '65 and '87		None					
Baldwin, Borough of	03/01/58	The Pleasant Hills Authority agrees to furnish sanitary sewer services to the inhabitants of the Borough of Pleasant Hills, Borough of Baldwin, and Township of Snowden (now South Park)		None		None		None	Allocated based on percentage share of water consumption of total water consumption
Baldwin, Borough of	Agreement not available	Sixth Supplement dealing with industrial pretreatment		None					
Pleasant Hills, Borough of	06/01/91	Fifth Supplement of the original service agreement addressing '91 refinancing bonds issued in '65 and '87		None					
Pleasant Hills, Borough of	03/01/58	The Pleasant Hills Authority agrees to furnish sanitary sewer services to the inhabitants of the Borough of Pleasant Hills, Borough of Baldwin, and Township of Snowden (now South Park)		None		None		None	Allocated based on percentage share of water consumption of total water consumption
Pleasant Hills, Borough of	Agreement not available	Sixth Supplement dealing with industrial pretreatment		None					
South Park Township	06/01/91	Fifth Supplement of the original service agreement addressing '91 refinancing bonds issued in '65 and '87		None					
South Park Township	03/01/58	The Pleasant Hills Authority agrees to furnish sanitary sewer services to the inhabitants of the Borough of Pleasant Hills, Borough of Baldwin, and Township of Snowden (now South Park)		None		None		None	Allocated based on percentage share of water consumption of total water consumption
South Park Township	Agreement not available	Sixth Supplement dealing with industrial pretreatment		None					
Whitehall, Borough of	06/01/91	Fifth Supplement of the original service agreement addressing '91 refinancing bonds issued in '65 and '87		None					
Whitehall, Borough of	12/16/59	Joinder agreement between the Pleasant Hills Authority and the Borough of Whitehall		None		None		None	Allocated based on percentage share of water consumption of total water consumption
Whitehall, Borough of	Agreement not available	Sixth Supplement dealing with industrial pretreatment		None					

Pleasant Hills Authority

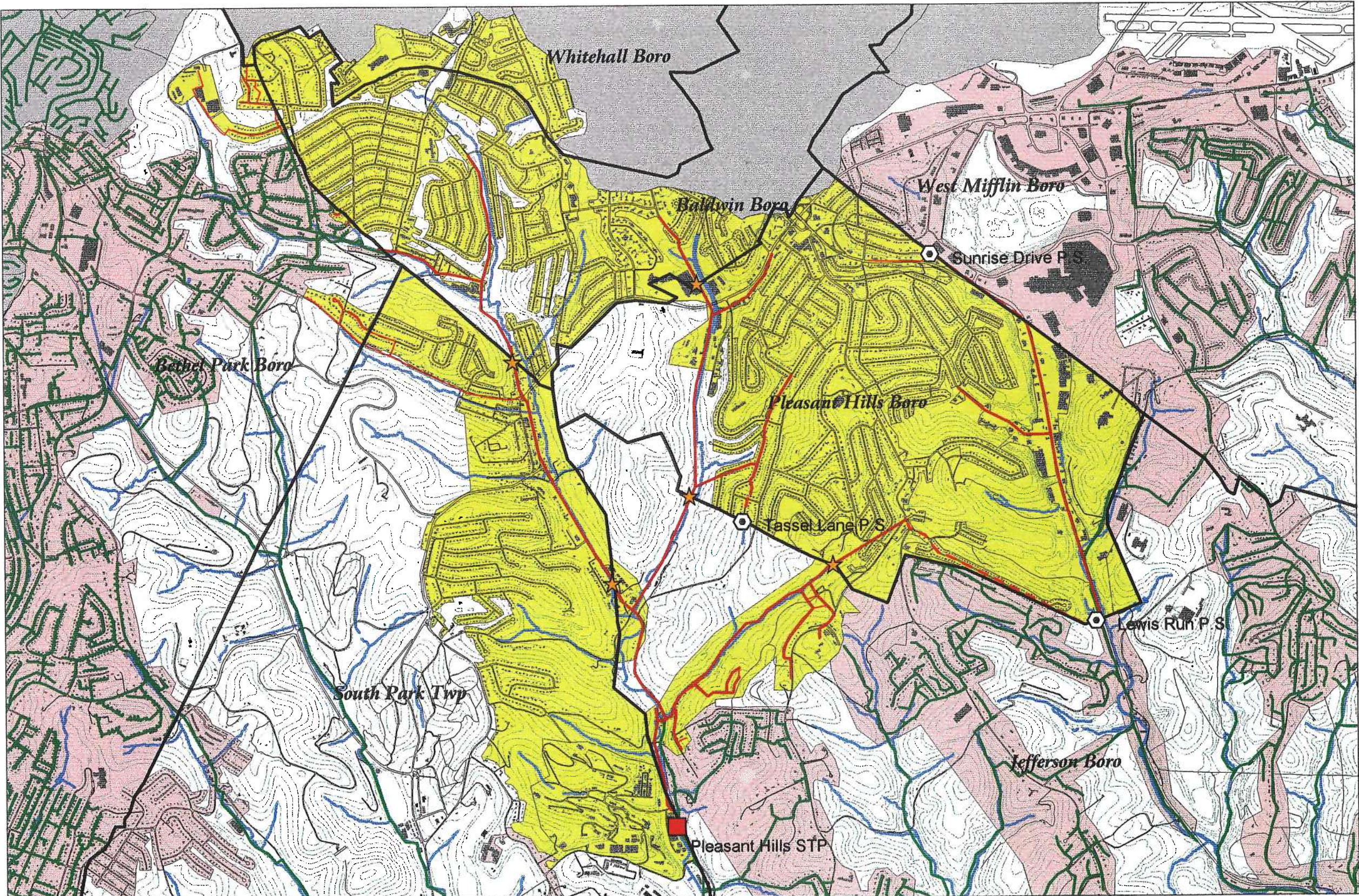
Water Pollution Control Facility Service Area and Collection System

Allegheny County
Department of Economic Development

Allegheny County, PA



600 0 600 1200 Feet



- Public Treatment Facility
 - Existing STP
 - Pump Station
 - Intermunicipal Connection
 - Municipal Boundary
 - Major Road
 - Contour
 - Hydrologic Feature
 - Building
 - Collection System
 - Separate
 - Pipe Type
 - Collector
 - Force Main
 - Trunk
 - Neighboring Service Area
 - Neighboring Collection System
 - ALCOSAN Service Area
- Not Field Verified



Source: Pleasant Hills Authority Sewer Collection System Map
Interceptor Sewage Service Area Map

Plum Borough Municipal Authority

The Plum Borough Municipal Authority (PBMA) is a water and wastewater authority. The Plum Borough sewer authority was formed in 1988 and became a joint water and sewer authority in 1996. The Authority Board is comprised of seven members, all from Plum Borough. Two treatment plants accept and treat sewage flow from approximately 3,970 customers in Plum Borough and Murrysville. However, the majority of the area consisting of 4,335 customers of Plum Borough and located in the Plum Creek Watershed, has sewer lines that transport sewage to the Plum Creek Sewage Treatment Plant in Penn Hills. The Logans Ferry Heights area in Plum Borough has sewer lines that transport sewage to the New Kensington Sewage Treatment Plant. Also, there are two areas in Plum Borough where the collection system conveys sewage to ALCOSAN via Monroeville. PBMA maintains all transmission lines within the municipal boundaries of Plum Borough.

The Holiday Park Sewage Treatment Plant (STP) is a Rotating Biological Contactor (RBC) plant designed to treat an average wet weather flow of 2.24 mgd, an average dry weather flow of 1.52 mgd, and an average organic loading of 3,060 lb CBOD₅/day. The STP receives sewage flow from approximately 3,907 units from Plum Borough and Murrysville located within the Abers Creek drainage basin. One emergency bypass is located at the plant. The average wet and dry weather hydraulic loadings at the plant during 1997 were 1.6 and 0.9 mgd respectively. The average organic loading during 1997 was 1,429 lb CBOD₅/day.

PBMA was under a consent order for overflows and basement flooding that occurred in association with the collection system for the Holiday Park STP. Extensive wastewater flow monitoring was conducted in the Holiday Park Sewer System in order to determine the amount of dry weather infiltration and inflow (I/I) entering the system. In 1997, a 2.1 million-gallon above ground detention basin was installed to collect the excess wastewater. Installation of this detention tank eliminated all seven bypasses.

The Holiday Park service area population of approximately 11,017 is projected to increase to approximately 14,300 by 2015. Based on the 2015 population increase, the hydraulic and organic loadings to the treatment plant are expected to increase by 30 percent. The hydraulic loading is projected to increase to approximately 1.61 mgd, and the organic loading is projected to increase to approximately 1,900 lb CBOD₅/day. The organic loading capacity of the plant appears to be adequate for projected organic loading in 2015. Assuming wet weather peaking needs are served by the detention facility, the hydraulic capacity appears to be adequate for the projected hydraulic loading conditions in 2015.

The Laurel Gardens STP is an extended aeration plant designed to treat an average daily flow of 0.014 mgd and an average organic loading of 23.3 lb CBOD₅/day. The plant receives sanitary sewage from approximately 63 units in Plum Borough along McAllister Drive, Sardis Road, and the Austin/Burton Hall Apartments. The average hydraulic loading at the Laurel Gardens STP during 1997 was 0.007 mgd. The average organic loading was 17 lb CBOD₅/day.

The Laurel Gardens service area population of approximately 178 is projected to increase to approximately 240 by 2015. Based on the 2015 population increase, the hydraulic and organic loadings to the treatment plant are expected to increase by 32 percent. The hydraulic loading is projected to increase to approximately 0.009-mgd, and the organic loading is projected to increase to approximately 20 lb CBOD₅/day. The hydraulic and organic loading capacities of the plant appear to be adequate for projected average daily flow and loading conditions in 2015. At the Holiday Park STP, there is a full-time supervisor from U.S. Filter on staff and four full-time PBMA employees. U.S. Filter operates the Laurel Gardens STP.

Both PBMA employees and private contractors perform maintenance on all sewer systems located within Plum Borough, regardless of which sewage treatment facility accepts the wastewater. Work performed includes root removal, sanitary sewer cleaning, sanitary sewer replacement, high pressure flushing, and video inspection. PBMA owns a jet and TV truck in order to perform this work. All sanitary sewers are cleaned and maintained on a regular schedule. Areas where problems frequently occur are inspected more often. The Franklin Township Municipal Sanitary Authority (FTMSA) maintains the collection system in Murrysville, which transports flow to the Holiday Park STP in Plum Borough.

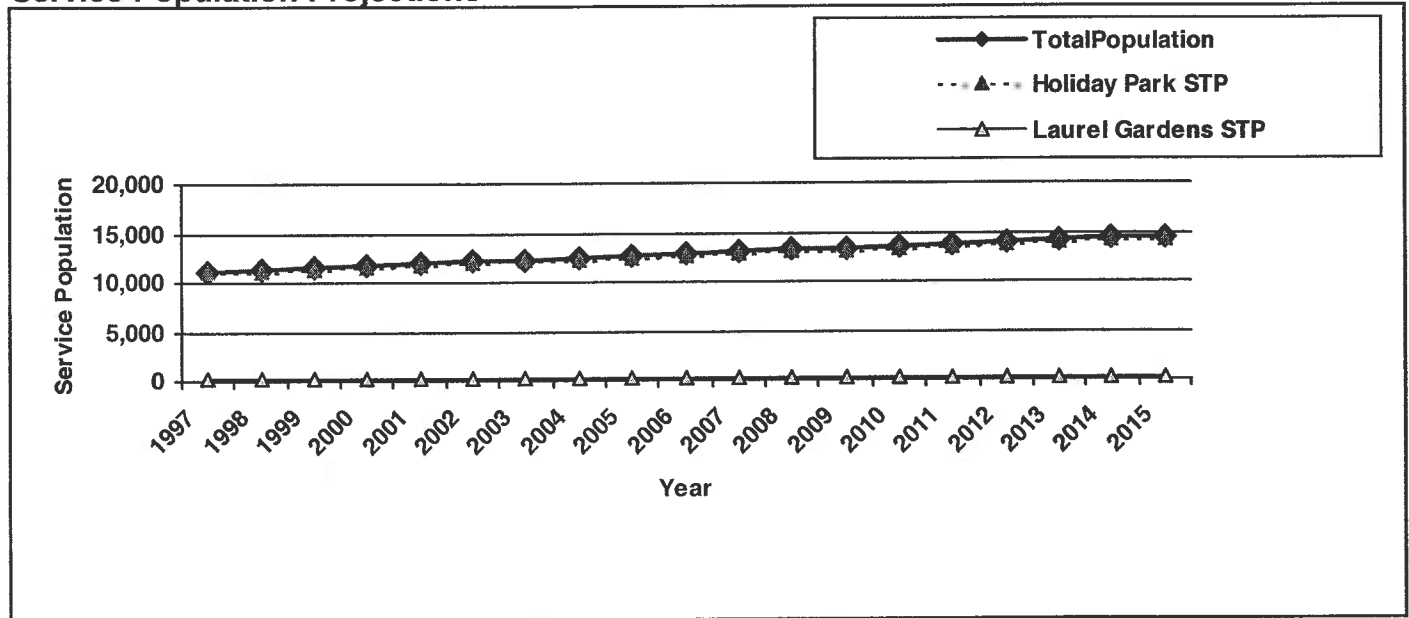
Service Area Summary

POTW Name	1997 Service Population	2015 Service Population	Municipality	Type Of Sewer System
Holiday Park STP	11017	14311	Murrysville, Municipality of Plum Borough	Separate
Laurel Gardens STP	178	235	Plum Borough	Separate

Treatment Process Summary

POTW Name	Equalization	Screening	Comminution	Grit Removal	Prechlorination	Primary Treatment	Activated Sludge	Extended Aeration	Contact Stabilization	Trickling Filter	Disinfection	Dechlorination	Filtration	Reaeration	Thickening	Aerobic Digestion	Anaerobic Digestion	Lime Stabilization	Composting	Thermal Processing	Dewatering	Land Application	Landfill	Incineration	Haul to other STP	Odor Control
Holiday Park STP		■		■			■		■	■																
Laurel Gardens STP		■	■	■			■			■																■

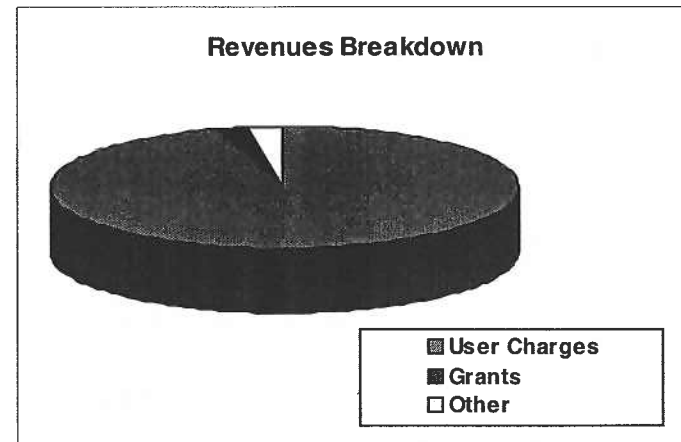
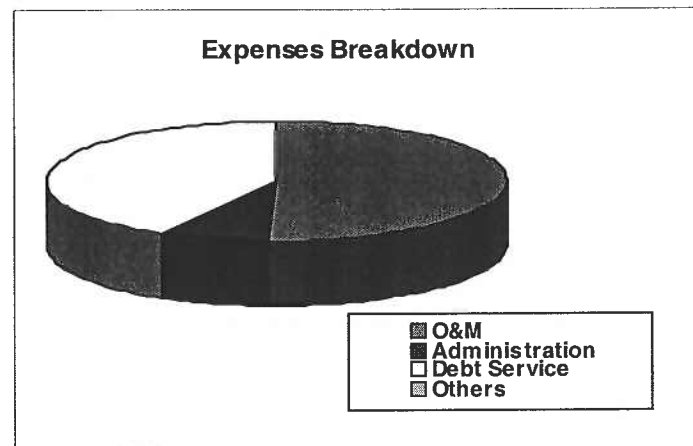
Service Population Projections



Plum Borough Municipal Authority

Sewer Use Ordinances

Municipality	Corrective Action Plan	Grease Trap Requirement	Industrial Pretreatment Program	Illicit Connection Inspection At Sale	Surcharge
Murrysville, Municipality of					
Plum Borough	Yes	Yes, required at restaurants	ALCOSAN	Yes, dye testing	

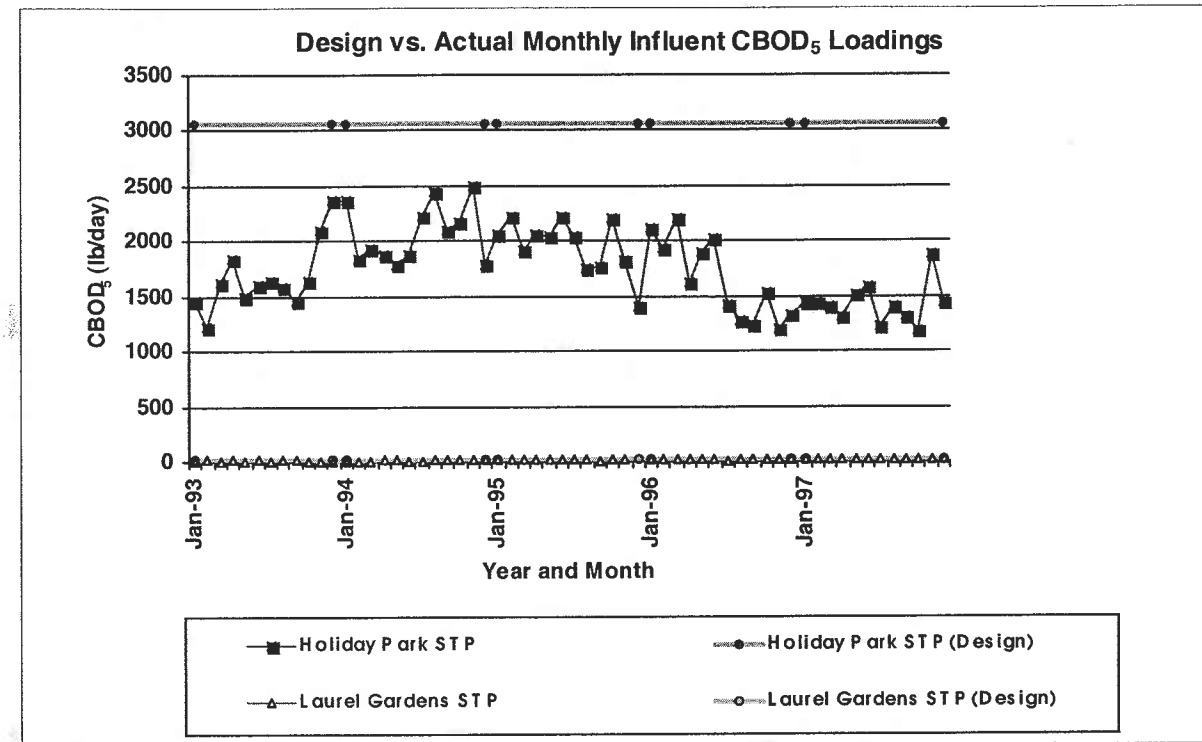
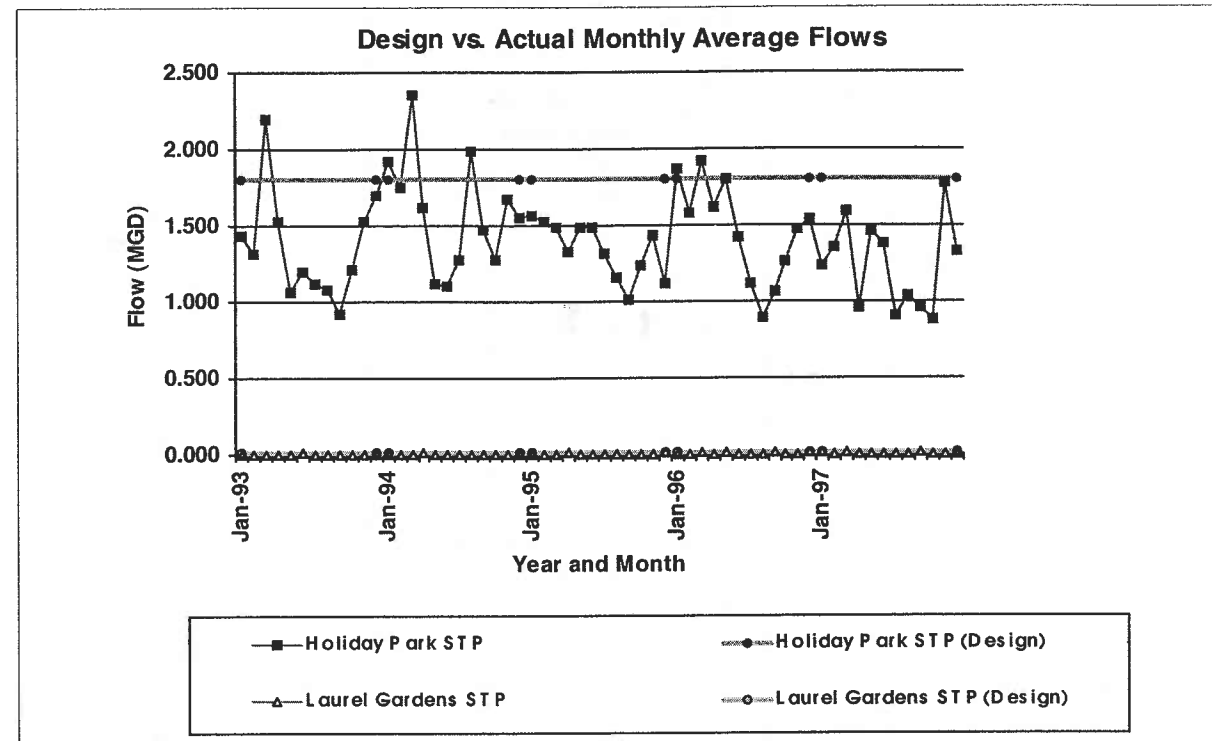


Financial Information

REVENUES		
User Charges:		\$3,397,500
Grants:		\$85,962
Other:		\$84,580
Total Revenues		\$3,568,042
EXPENSES		
Operations and Maintenance		\$1,717,478
Administration:		\$256,000
Debt Service:		\$1,417,000
Other:		\$0
Total Expenses		\$3,390,478
Surplus(Deficit):		\$177,564
Debt Service Coverage Ratio		1.13
Information Source:	YEAR: 1999	Actual/Budgeted
Revenues	Plum Borough Operating Budgets	Budgeted
Expenses	Plum Borough Operating Budgets	Budgeted

Plum Borough Municipal Authority

Plant Loading Summary



Plum Borough Municipal Authority

Collection System Facilities

TREATMENT PLANT	Design Capacity (MGD)	Biological Treatment	Owner	Operator
Holiday Park STP	2.24	Contact Stabilization	PBMA	U.S. Filter;PBMA

Pump Station	Peak Capacity	Avg Daily Flow	Owner	Operator
None				

Equalization Basin	Capacity	Location	Owner	Operator
Holiday Park STP	2.1 million-gallons	At Plant	PBMA	PBMA

TREATMENT PLANT	Design Capacity (MGD)	Biological Treatment	Owner	Operator
Laurel Gardens STP	0.014	Extended Aeration	PBMA	U.S. Filter

Pump Station	Peak Capacity	Avg Daily Flow	Owner	Operator
None				

Equalization Basin	Capacity	Location	Owner	Operator
None				

Sewer Maintenance Information

<i>Service Community</i>	<i>Maintained By:</i>	<i>Mainten. Done:</i>	<i>Equipment Source</i>	<i>I/I Removal</i>	<i>I/I Flow Monitor</i>
Murrysville, Municipality of Plum Borough	FTMSA PBMA, Contractor	Routine	Authority	<input type="checkbox"/>	<input type="checkbox"/>
				<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Plum Borough Municipal Authority

Intermunicipal Agreements

Agreement With	Agreement Date	Agreement Description	Expiration Date	Flow Limits (mgd)	Rate and Surcharge Provisions	Sampling Provisions	Flow Monitoring Provisions	Dispute Resol. Procedure	Basis of Cost Allocation
ALCOSAN	1989	New	Bonds + 1 year	As-needed	No	No	No	Water Use	
ALCOSAN	12/13/93	ALCOSAN, City of Pgh, Plum Boro and Plum Boro Mun. Sewer Auth. amends service area defined in 6/8/89 agreement to include Markhaven service area and install flow meters at connection points b/w Plum Boro and ALCOSAN system	Until date of expiration of legal existence of ALCOSAN or until exp. of one calendar yr after pymnt of all bonds, notes and other legal obligations of ALCOSAN	Maximum 0.250 mgd from Plum Borough.	If infiltration rate exceeds 300 gpd per inch of dia. per mile of pipe plus 0.250 mgd, Plum pays ALCOSAN's excess sewage charges.	Continuous flow monitoring at points of connection	None	Water consumption	
ALCOSAN	06/08/89	ALCOSAN, City of Pgh and Plum Boro for sewage treatment at ALCOSAN	Until date of expiration of legal existence of ALCOSAN or until exp. of one calendar yr after pymnt of all bonds, notes and other legal obligations of ALCOSAN, whichever is later.	Maximum 0.250 mgd from Plum Borough.	If infiltration rate exceeds 300 gpd per inch of dia. per mile of pipe plus 0.250 mgd, Plum pays ALCOSAN's excess sewage charges.	None	None	Water consumption	
ALCOSAN	01/29/98	The City of Pittsburgh and ALCOSAN enlarge the Project Z service area	Expiration of legal existence of ALCOSAN or until expiration of one calendar year following the payment in full of all bonds	0.035 mgd	Yes	Water usage			
ALCOSAN	05/22/91	ALCOSAN, City of Pgh, Plum Boro and Plum Boro Mun. Sewer Auth. to transfer rights, duties and responsibilities of service agreements for treatment at ALCOSAN from Plum Boro to Plum Boro Mun. Sewer Auth.	Until date of expiration of legal existence of ALCOSAN or until exp. of one calendar yr after pymnt of all bonds, notes and other legal obligations of ALCOSAN, whichever is later.	Maximum 0.250 mgd from Plum Borough.	If infiltration rate exceeds 300 gpd per inch of dia. per mile of pipe plus 0.250 mgd, Plum pays ALCOSAN's excess sewage charges.	None	None	Water consumption	
City of New Kensington	02/01/82	City of New Kensington, Municipal Sanitary Authority of the City of New Kensington (MSACNK), Borough of Plum, and Plum Borough Municipal Sanitary Authority (PBMA) for sewage treatment by New Kensington STP	Agreement terminated at option of MSACNK if industrial wastes originating in Plum Borough create a hazard or interfere with New Kensington STP operation.	Maximum of 100,000 gpd	If upon inspection by MSACNK, there is storm water, surface water, or excess l/i, being discharged	Arbitration	None	Percentage of plant capacity utilized	
City of Pittsburgh	06/08/89	ALCOSAN, City of Pgh, and Plum Boro for sewage treatment at ALCOSAN	Until date of expiration of legal existence of ALCOSAN or until exp. of one calendar yr after pymnt of all bonds, notes and other legal obligations of ALCOSAN, whichever is later.	Maximum 0.250 mgd from Plum Borough.	If infiltration rate exceeds 300 gpd per inch of dia. per mile of pipe plus 0.250 mgd, Plum pays ALCOSAN's excess sewage charges.	None	None	Water consumption	
City of Pittsburgh	05/22/91	ALCOSAN, City of Pgh, Plum Boro, and Plum Boro Mun. Sewer Auth. to transfer rights, duties, and responsibilities of service agreements for treatment at ALCOSAN from Plum Boro to Plum Boro Mun. Sewer Auth.	Until date of expiration of legal existence of ALCOSAN or until exp. of one calendar yr after pymnt of all bonds, notes and other legal obligations of ALCOSAN, whichever is later.	Maximum 0.250 mgd from Plum Borough.	If infiltration rate exceeds 300 gpd per inch of dia. per mile of pipe plus 0.250 mgd, Plum pays ALCOSAN's excess sewage charges.	None	None	Water consumption	
City of Pittsburgh	12/13/93	ALCOSAN, City of Pgh, Plum Boro and Plum Boro Mun. Sewer Auth. amends service area defined in 6/8/89 agreement to incl. Markhaven service area and install flow meters at connection points b/w Plum Boro and ALCOSAN system	Until date of expiration of legal existence of ALCOSAN or until exp. of one calendar yr after pymnt of all bonds, notes and other legal obligations of ALCOSAN, whichever is later.	Maximum 0.250 mgd from Plum Borough.	If infiltration rate exceeds 300 gpd per inch of dia. per mile of pipe plus 0.250 mgd, Plum pays ALCOSAN's excess sewage charges.	Continuous flow monitoring at points of connection	None	Water consumption	
City of Pittsburgh	01/29/98	The City of Pittsburgh and ALCOSAN enlarge the Project Z service area	Expiration of legal existence of ALCOSAN or until expiration of one calendar year following the payment in full of all bonds	0.035 mgd	Yes	Water usage			
Franklin Township Municipal Sanitary Authority	03/04/85	Agreement for conveyance and treatment of sewage from Murrysville at the Holiday Park STP				Water usage			
Municipal Sanitary Authority of the City of New Kensington	02/01/82	City of New Kensington, Municipal Sanitary Authority of the City of New Kensington (MSACNK), Borough of Plum, and Plum Borough Municipal Sanitary Authority (PBMA) for sewage treatment by New Kensington STP	Agreement terminated at option of MSACNK if industrial wastes originating in Plum Borough create a hazard or interfere with New Kensington STP operation.	Maximum of 100,000 gpd	If upon inspection by MSACNK, there is storm water, surface water, or excess l/i, being discharged	Arbitration	None	Percentage of plant capacity utilized	
Municipality of Monroeville	09/04/96	PBMA to permit Monroeville to continue service to the area of Route 286 in the establishments. Monroeville to provide service to the area of Route 286 in the Borough of Plum.				None	None		PBMA shall pay the same rate as Monroeville customers pay minus the ALCOSAN charge being paid directly to ALCOSAN by PBMA

Plum Borough Municipal Authority

Intermunicipal Agreements

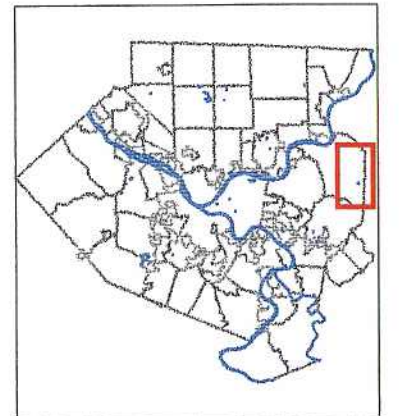
Agreement With	Date Enacted	Agreement Description	Expiration Date	Flow Limits (mgd)	Rate and Surcharge Provisions	Sampling Provisions	Flow Monitoring Provisions	Dispute Resol. Procedure	Basis of Cost Allocation
Municipality of Monroeville	03/12/85	Borough of Plum and Municipality of Monroeville for sewage treatment at ALCOSAN	None	Max. infiltration rate is 150 gpd per inch dia. of pipe per mile.	If infiltration rate > 150 gpd/in per diam/mi of pipe, Plum will evaluate sewer system to determine corrective action and submit to Monroeville.	None	Measuring flume at connection location.	None	Water consumption
Municipality of Monroeville	12/09/93	Plum Borough Municipal Sewer Authority and Municipality of Monroeville amending 6/8/89 agreement service area and peak flow rate		Peak flow rate of 650,000 gpd.					
Municipality of Penn Hills	07/25/88	Agreement for Plum to plan, design, finance, and construct sewer lines to convey sewage to Penn Hills / Plum Creek Plant		300 gallons per EDU per day, on an average monthly flow of 2 consecutive months	Plum shall pay a premium to Penn Hills for the excess total water contribution	Has option to require periodic sampling but doesn't enforce it	Excess flows monitored by meters	Arbitration	Based on water consumption
Plum Borough	02/01/82	City of New Kensington, Municipal Sanitary Authority of the City of New Kensington (MSACNK), Borough of Plum, and Plum Borough Municipal Sanitary Authority (PBMA) for sewage treatment by New Kensington STP	Agreement terminated at option of MSACNK if industrial wastes originating in Plum Borough create a hazard or interfere with New Kensington STP operation.	Maximum of 100,000 gpd	If upon inspection by MSACNK, there is storm water, surface water, or excess I/I, being discharged			Arbitration	Percentage of plant capacity utilized
Plum Borough	01/29/98	The City of Pittsburgh and ALCOSAN enlarge the Project Z service area	Expiration of legal existance of ALCOSAN or until expiration of one calender year following the payment in full of all bonds	0.035 mgd			Yes		Water usage
Plum Borough	03/12/85	Borough of Plum and Municipality of Monroeville for sewage treatment at ALCOSAN	None	Max. infiltration rate is 150 gpd per inch dia. of pipe per mile.	If infiltration rate > 150 gpd/in per diam/mi of pipe, Plum will evaluate sewer system to determine corrective action and submit to Monroeville.	None	Measuring flume at connection location.	None	Water consumption
Plum Borough	12/09/93	Plum Borough Municipal Sewer Authority and Municipality of Monroeville amending 6/8/89 agreement service area and peak flow rate		Peak flow rate of 650,000 gpd.					

Plum Borough Municipal Authority

Water Pollution Control Facilities
Service Areas and Collection
Systems

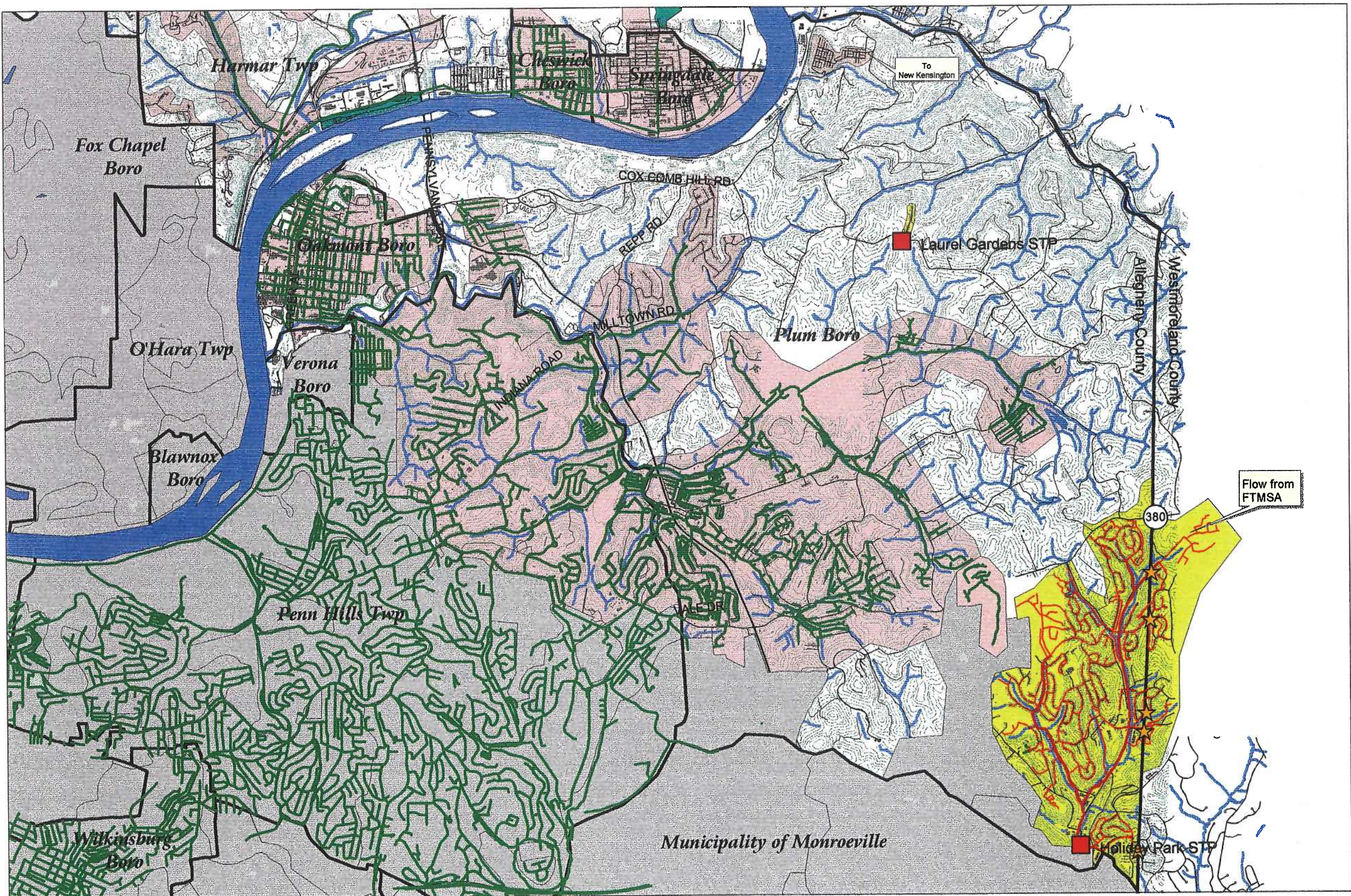
Allegheny County
Department of Economic Development

Allegheny County, PA



1000 0 1000 2000 Feet

Flow from
FTMSA



- Public Treatment Facility
 - Existing STP
 - Intermunicipal Connection
- Municipal Boundary
- Major Road
- Contour
- Hydrologic Feature
- Building
- Collection System
 - Separate
 - On - Lot Problem Area
- Pipe Type
 - Collector
 - Force Main
 - Trunk
- Neighboring Service Area
- Neighboring Collection System
- ALCOSAN Service Area



Not Field Verified
Source: Plum Boro.

Township of Richland

Richland Township lies at the juncture of four different watersheds: Breakneck Creek, Glade Run, Deer Creek, and Pine Creek. Wastewater generated in the Township flows into four different watersheds. Through its Sanitary Department, Richland Township is responsible for operating and maintaining the Fairwinds Wastewater Treatment Facility, the Fairwinds pump station, and the majority of the collection system in the Township. The Department reports to the Township's five-member Board of Supervisors.

The Fairwinds STP currently serves 72 customers and is permitted for 0.052 mgd. The average hydraulic load for 1997 was 0.015 mgd. The permitted organic loading capacity of the treatment plant is 89 lb CBOD₅/day. Although the projected hydraulic loading for the next five years is well below the permitted capacity, Richland will decommission this plant upon the completion of the Little Deer Creek Drainage Area interceptor sewer. This interceptor will tie the Fairwinds service area and the Bakerstown area into the Deer Creek Drainage Basin Authority's (system for transport to the Allegheny Valley Joint Sewer Authority (AVJSA) treatment plant. The Fairwinds Pump Station will remain in service for several more years. The St. George Drive holding tank will also be eliminated upon the completion of this interceptor.

Presently, separate sanitary sewers serve the Pine Creek and Deer Creek watersheds. Richland maintains all the collection systems in the Township with the exception of the northwest corner of the township tributary to the Breakneck Creek Regional Authority's Water Pollution Control Facility. This area had been served by the 0.02 mgd Chessrown Avenue Water Pollution Plant which was decommissioned in 1998. The Breakneck Creek Regional Authority maintains the sewers in Richland tributary to their wastewater treatment facility.

The Willow Run and Crouse Run drainage areas are served by an interceptor that transports wastewater to Hampton Township. The Willow Run interceptor, built in 1993, is limited to a 120 customer maximum. By the year 2010, all existing homes within the Willow Run drainage area will be sewered. Richland Township owns and maintains these interceptors to the point of intermunicipal connection with Hampton Township. Wastewater treatment is provided by the Allison Park Water Pollution Control Plant which is owned by the Hampton Township Sanitary Authority and operated by the Township of Hampton under a lease agreement with HTSA.

The West Branch Deer Creek drainage area is sewered by an interceptor that transports wastewater to the DCDBA's collection system for treatment by the Allegheny Valley Joint Sanitary Authority (AVJSA). Richland Township will own and maintain the interceptor to Middle Road in West Deer Township. Richland Township will assume ownership and maintenance responsibility for the Little Deer Creek Interceptor until the time when 132 homes from West Deer Township are connected to the line. At that time, Richland will be responsible for maintaining the portion of the interceptor line that lies in Richland Township.

The northeast corner of Richland Township falls in the Glade Run Watershed. This area consists of 672 sparsely populated acres and currently utilizes on-lot septic systems that have experienced problems. The Glade Run watershed collection system in Middlesex Township (Butler County) could potentially provide service to this area. The west side of Richland Township falls into the Montour Run Watershed and the 1,542-acre area has no public sewage facilities. There are no known on-lot problems in this area, however, if sewers were provided, this area could flow by gravity to the McCandless Township Sanitary Authority's Pine Creek STP.

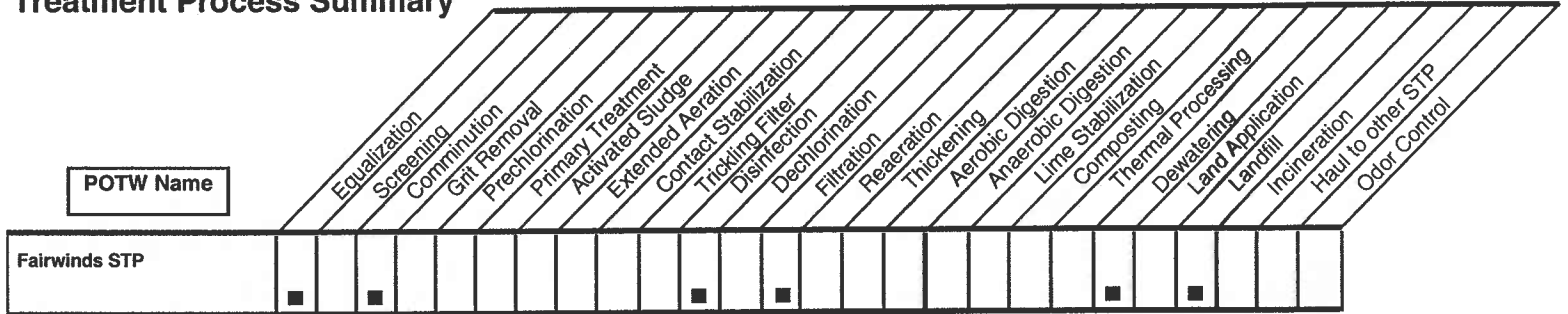
The Sanitary Department in Richland Township performs maintenance on the sewer system that includes dye testing, inspections during tap-ins and when new connections are made, and inspection of manholes.

In the future, the sewered population in Richland Township will be served by wastewater treatment facilities owned by the Allegheny Valley Joint Sewage Authority, Hampton Township Municipal Authority, and the Breakneck Creek Regional Authority. The 1997-service area population of 28,140 is projected to increase to approximately 41,044 by 2015. The three receiving treatment facilities and associated pumping facilities must be capable of handling the additional flows and loadings from Richland by the year 2015.

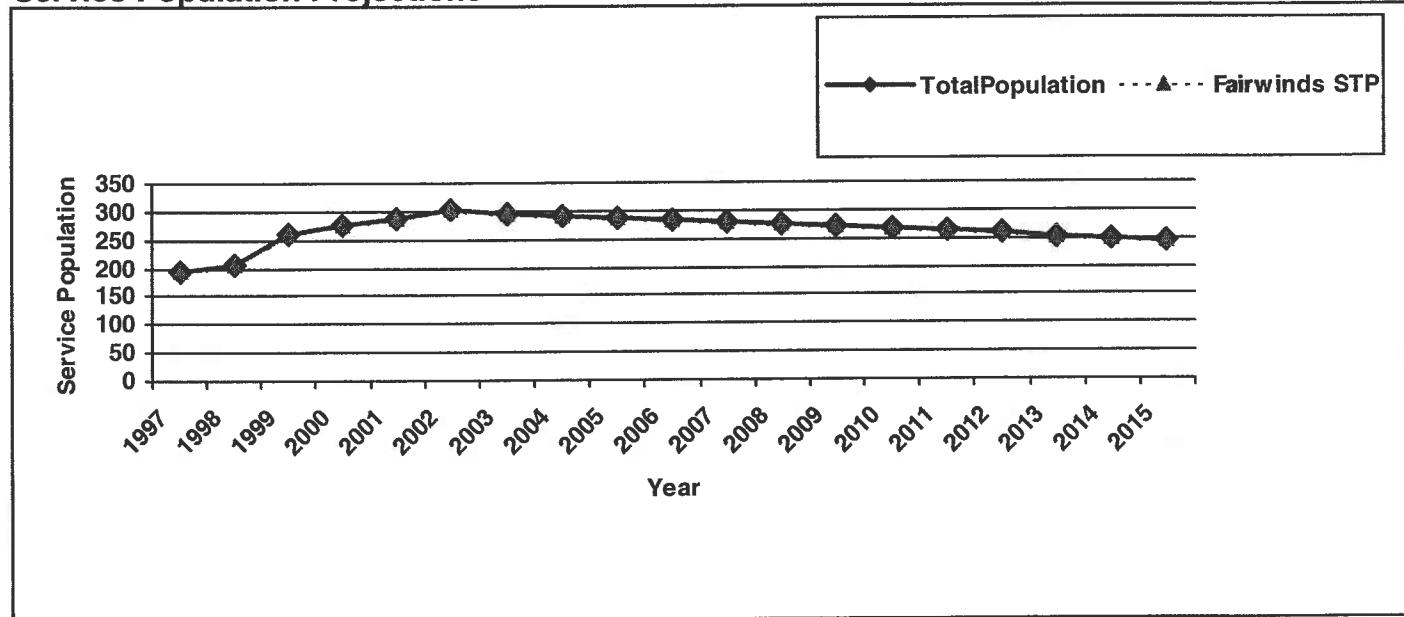
Service Area Summary

POTW Name	1997 Service Population	2015 Service Population	Municipality	Type Of Sewer System
Fairwinds STP	196	246	Richland Township	Separate

Treatment Process Summary



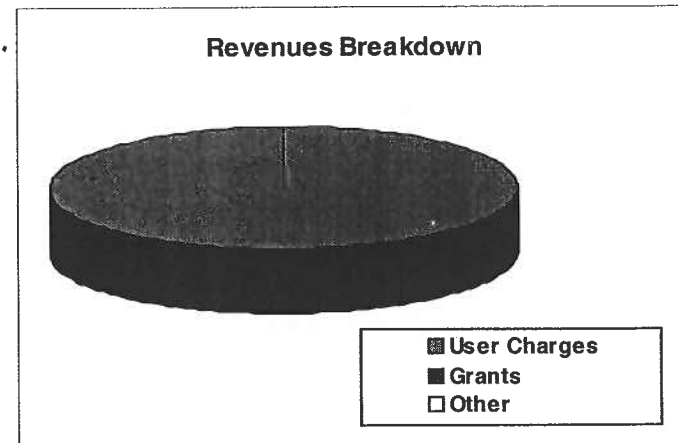
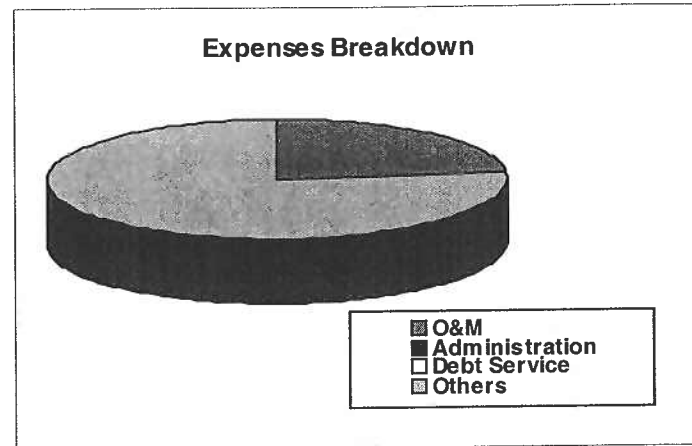
Service Population Projections



Township of Richland

Sewer Use Ordinances

Municipality	Corrective Action Plan	Grease Trap Requirement	Industrial Pretreatment Program	Illicit Connection Inspection At Sale	Surcharge
Richland Township	Completed	Yes	AVJSA Sewer Use Ordinance	Yes, inspection at time of sale or reassessment	



Financial Information

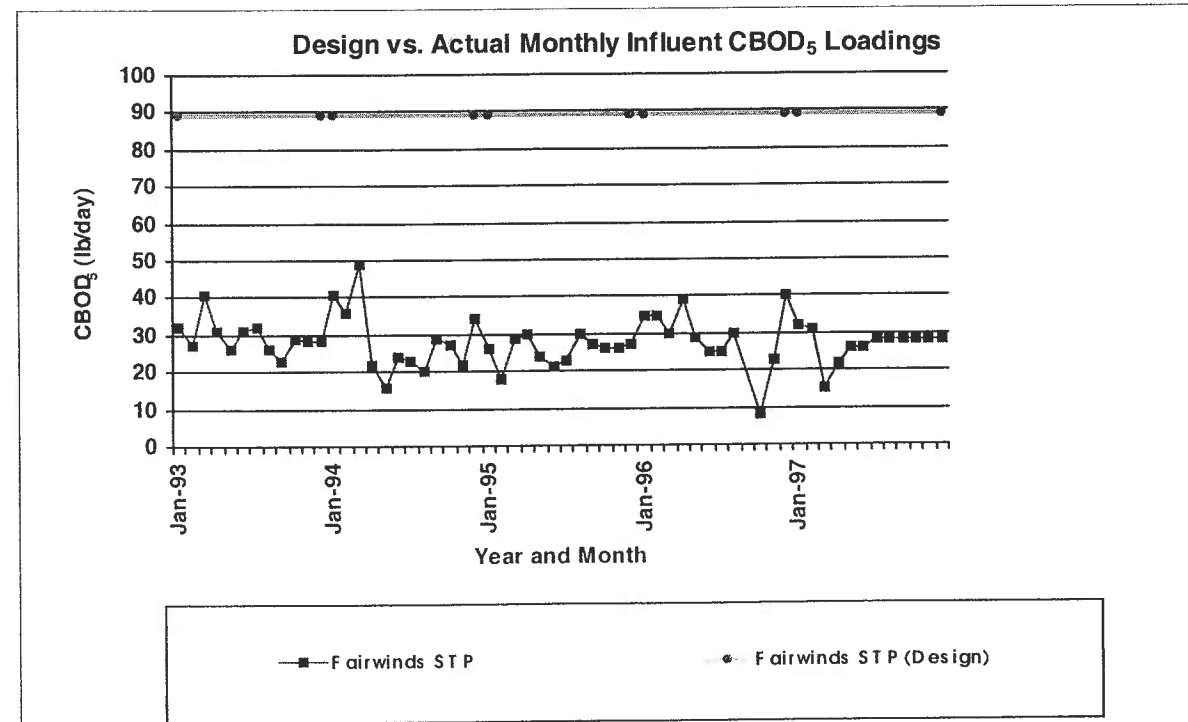
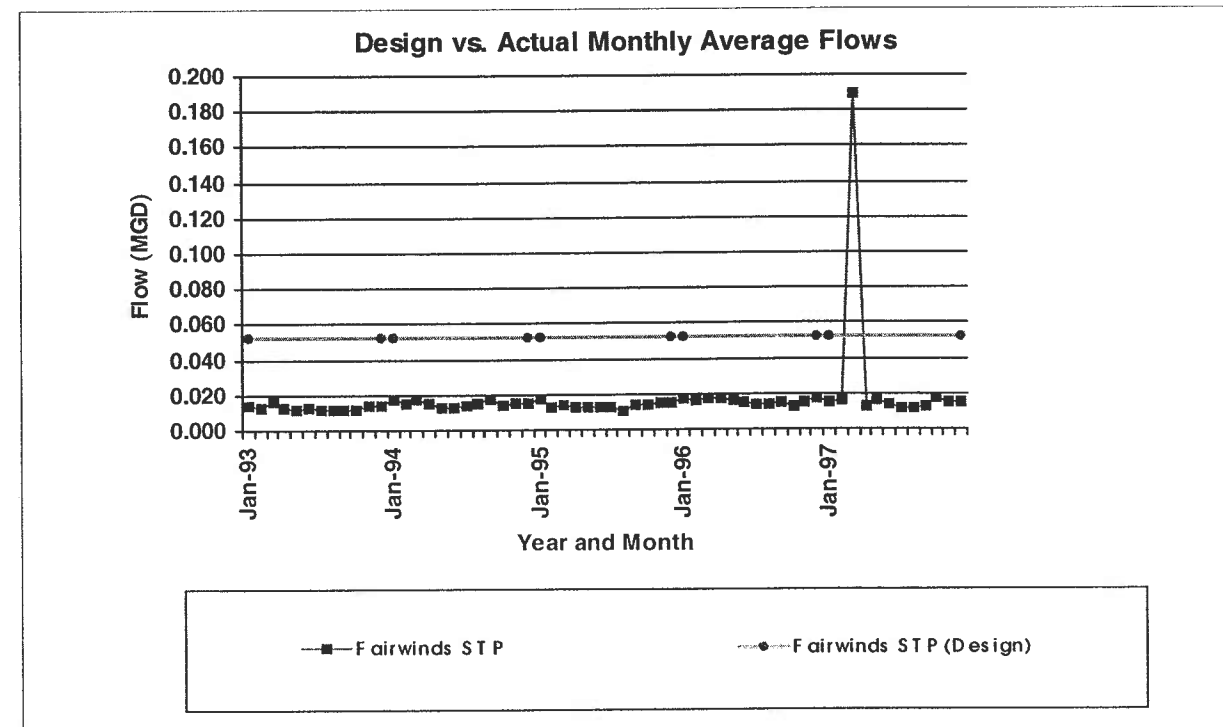
REVENUES		
User Charges:		\$842,379
Grants:		\$0
Other:		\$0
Total Revenues		\$842,379
EXPENSES		
Operations and Maintenance		\$196,605
Administration:		\$0
Debt Service:		\$0
Other:		\$645,774
Total Expenses		\$842,379
Surplus(Deficit):		\$0
Debt Service Coverage Ratio		
	YEAR:	1995
		Actual/Budgeted
Information Source:		
Revenues	Local Government Financial Statistics (PaDCED)	Actual
Expenses	Local Government Financial Statistics (PaDCED)	Actual

Township of Richland

1997 Plant Performance

Fairwinds STP	Average Daily Flow (mgd)			CBOD ₅ (lb/Day)					TSS (lb/Day) Effluent			Effluent Ammonia Nitrogen (mg/l)			Effluent Coliform (Col./100ml)		
	Monthly	Summer	Winter	Monthly Influent	Average Effluent	% Removal	Summer	Winter	Average	Summer	Winter	Average	Summer	Winter	Average Daily	Summer	Winter
January	0.015			32	0.40	99%			0.40			0.10			38		
February	0.016			31	1.20	96%			0.50			0.04			1		
March	0.019			15	0.40	97%			0.40			0.20			1		
April	0.013			22	0.50	98%			0.50			0.05			1		
May	0.016			26	0.30	99%			0.50			0.02			1		
June	0.014			26	0.30	99%			0.40			0.20			26		
July	0.012			28	0.20	99%			1.20			0.09			80		
August	0.012			28	0.20	99%			1.20			0.05			1		
September	0.013			28	0.20	99%			0.70			0.06			80		
October	0.017			28	0.50	98%			0.70			0.07			200	E	
November	0.015			28	0.60	98%			0.60			0.06			1		
December	0.015			28	0.50	98%			2.10			0.40			1		
Maximum	0.02	0.05	0.05		1.20		9	9	2.10	13	13	0.40	2.00	3.00	200	200	2000
Max as % Limit	37%				14%				16%			20%			100%		
Average	0.01				0.44				0.77			0.11			36		
3 Month > Limit?	No																

Plant Loading Summary



Township of Richland

Collection System Facilities

TREATMENT PLANT	Design Capacity (MGD)	Biological Treatment	Owner	Operator
Fairwinds STP	0.052		RICH	RICH

Pump Station	Peak Capacity	Avg Daily Flow	Owner	Operator
Fairwinds		0.011 mgd	RICH	RICH

Equalization Basin	Capacity	Location	Owner	Operator
Fairwinds STP	NA	At Plant	RICH	RICH

Sewer Maintenance Information

<i>Service Community</i>	<i>Maintained By:</i>	<i>Mainten. Done:</i>	<i>Equipment Source</i>	<i>I/I Removal</i>	<i>I/I Flow Monitor</i>
Richland Township	Public Works Dept.	Routine	Pub. Wrks, Contract., COG	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Township of Richland

Intermunicipal Agreements

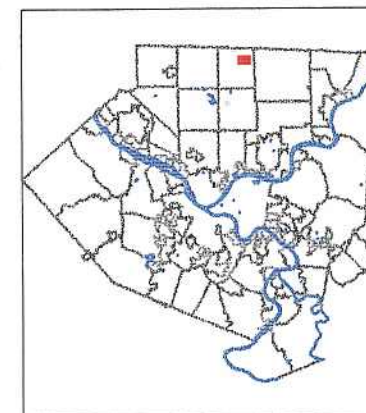
Agreement With	Date Enacted	Agreement Description	Expiration Date	Flow Limits (mgd)	Rate and Surcharge Provisions	Sampling Provisions	Flow Monitoring Provisions	Dispute Resol. Procedure	Basis of Cost Allocation
Allegheny Valley Joint Sewage Authority	12/15/90	AVJSA agreed to furnish sanitary sewage treatment and disposal service to the sewer portions of the contracting municipalities, and under which of said contracting municipalities has agreed to deliver to the sewer system of the Authority, for transportation, treatment, and disposal, all sanitary sewage originating in its respective service areas	The latest maturity date of any sewer revenue bond or 99 years	None		None		Arbitration	
Breakneck Creek Regional Authority	04/18/90	Agreement for BCRA to provide Richland Township with sanitary sewer service within the corporate limits of the Township Service Area until such time that the sewage can be collected by the Township's Chessrown plant		None					
Deer Creek Drainage Basin Authority	09/09/98	Amendment to 12/15/90 agreement states Richland will extend service to Bakerstown to be treated by the AVJSA treatment facilities							For each customer, DCDBA shall pay \$700.00 to Richland. After connection, Richland shall pay to DCDBA a tap-in-fee of \$1,300.00 per EDU
Deer Creek Drainage Basin Authority	12/15/90	Amendment of agreement to enable Richland to extend service to Bakerstown which lies in the Little Deer Creek drainage area of Richland. Richland will design and install the line and also pay for a flow meter at the point of connection to the Bakerstown line.							Any customer that taps into Richland's line from West Deer will need to pay \$700 to Richland
Deer Creek Drainage Basin Authority	12/15/90	Agreement makes Richland a contract customer of DCDBA in order to transport sewage via the DCDBA interceptor line.	As long as the Richland Township Collection System is connected to both the DCDBA Interceptor Lines and the AVJSA Sewer System	Richland permit to connect 1,054 EDU's. If >, Richland must conduct SSES in 6 mo. to identify action to reduce infiltration by 50%.	Any connections over and above 1,054 EDU's, must pay a tap-in-fee of \$1,300 per EDU			3rd party arbitration, then court	Based on water consumption. Transportation fee = 6% of total DCDBA costs for operation, maintenance, administrative, and debt service excluding AVJSA treatment costs.
Hampton Township Sanitary Authority	08/28/90	The Authority will accept, treat, transport, and dispose of sanitary sewage from an area of Richland known as the Crouse Run Watershed Area and a portion of Richland known as the Willow Run Watershed Area		The maximum instantaneous sewage flow shall not exceed three times the daily average flow			Sewage flow meters at interceptor lines	Arbitration	\$3.00 for each 1,000 gallons of water consumed with 10,000 gallon minimum

Township of Richland

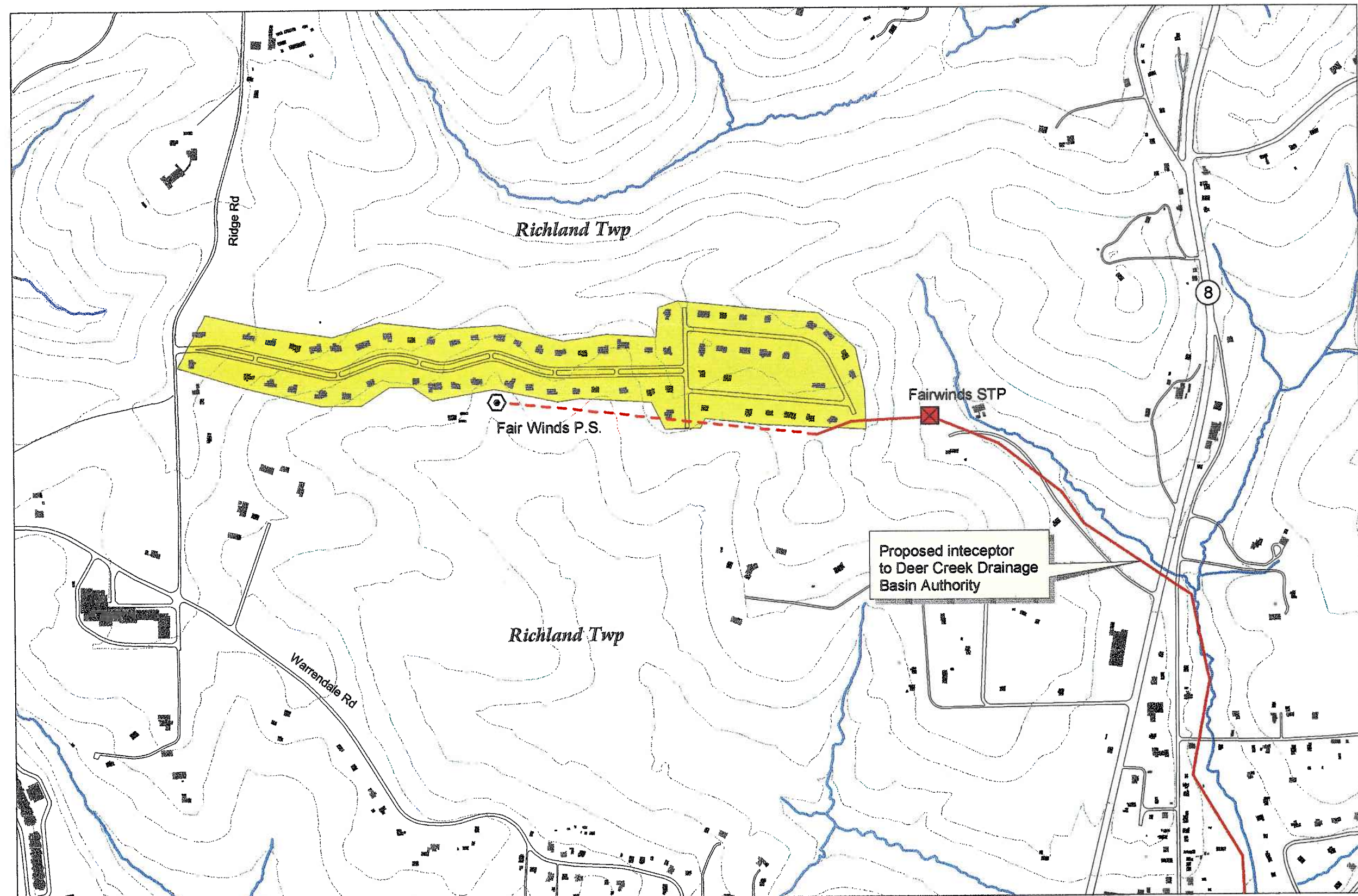
Water Pollution Control Facility Service Area and Collection System

Allegheny County
Department of Economic Development

Allegheny County, PA



200 0 200 400 Feet



- Public Treatment Facility
- STP To Be Abandoned
- Pump Station
- Major Road
- Contour
- Hyrologic Feature
- Building
- Collection System
- Separate
- Proposed Interceptor



Not Field Verified

Source: Richland Twp. Drainage Area Map

The Municipal Authority of the Township of Robinson

The Municipal Authority of the Township of Robinson (MATR) is a water and sewer authority. MATR provides treatment and collection services to customers in portions of Robinson Township, Collier Township, and North Fayette Township. The remaining sewer areas in Robinson Township are served by Coraopolis Municipal Sanitary Authority, Moon Township Municipal Authority, and ALCOSAN. MATR owns and operates three wastewater treatment facilities and 14 sewage pump stations. Eight of the 14 pump stations are associated with the three, MATR wastewater treatment facilities. The other six pump stations convey sewage to wastewater treatment facilities owned and operated by other sewage authorities (see ALCOSAN, CMSA, and MTMA). A seven-member Board of Directors governs MATR.

Two certified MATR operators are responsible for the daily operations of the three treatment plants. One operator is located at the Campbells Run STP full-time, while the other operator spends one-half day at the Moon Run STP and one-half day at the Covi/Douglas STP.

Campbells Run Sewage Treatment Plant (STP) is the largest and oldest sewage treatment facility owned and operated by MATR. This extended aeration facility was built in the late 1960s and has a permitted hydraulic capacity of 1.0 mgd. The permitted organic load to the plant is 1,700 lb CBOD₅/day. In 1997, the average monthly flow to the plant was 0.735 mgd, and the average monthly organic loading was 1,216 lb CBOD₅/day. The plant discharges to Campbells Run. Liquid sludge from all three STPs is hauled to ALCOSAN for processing and disposal. MATR may install a belt filter press at the Campbells Run STP to dewater sludge generated at all three treatment plants.

The Moon Run STP was built in the 1970s. This extended aeration facility has a permitted hydraulic capacity of 0.250 mgd. The permitted organic load to the plant is 425 lb CBOD₅/day. In 1997, the average monthly flow to the plant was 0.213 mgd, and the average monthly organic loading was 390 lb CBOD₅/day. The plant discharges to Moon Run, a tributary of the Ohio River. Siltation from an abandoned mine upstream of the plant, is causing the Moon Run channel to shift within the plant perimeter. During significant rain events, the stream floods and increases the flow to the STP. There is also a significant increase in grit and organic loads to the plant. Organic overloading is anticipated within the next five years, and hydraulic overloading is anticipated if the stream shifting and siltation problem is not reconciled. The plant outfall is covered with silt. MATR has proposed to build a sedimentation basin upstream of the STP and to dredge approximately 700 feet of the stream. MATR is currently seeking financial assistance to make the stream improvements.

The Covi/Douglas STP is approximately 10 years old. The 0.154-mgd plant was built to replace two package treatment plants installed by private developers in the 1960s. The extended aeration facility has an organic loading capacity of 308 lb CBOD₅/day. For 1997, the average monthly flow and organic loading to the plant were 0.121 mgd and 203.1 lb CBOD₅/day.

MATR maintenance staff performs general sewer maintenance and inspection, for all sanitary lines and pump stations within Robinson Township. Sewer lines are jet-cleaned as needed by an outside contractor. Line televising is also contracted. Dye testing and inspection of sewer connections is performed at the time of real estate sale and refinancing to identify direct inflow sources.

The collection system associated with the Campbells Run STP includes approximately 19 miles of sanitary sewers and four pump stations. Infiltration and inflow (I/I) problems are escalating in the Campbells Run collection system and are particularly evident during wet weather events. MATR is developing a plan to identify, locate and correct extraneous flows in a cost-effective manner. Smoke and dye testing will be utilized to investigate sources of I/I.

The collection system associated with the Moon Run STP includes approximately 13 miles of sanitary sewer lines and one pump station. MATR was under a corrective action plan to alleviate hydraulic loading in this collection system, and a consistent reduction in hydraulic loading was observed from 1991 to 1995. The system is monitored for substantial flow increases, and immediate action is taken by the MATR maintenance staff to correct problems as they arise.

The collection system associated with the Covi/Douglas STP includes approximately nine miles of sanitary sewers and three pump stations. Increased flow during rain events and a rapid decrease in flow after rain events suggests down spouts, roof leaders, and vent holes in manhole castings contribute extraneous flow to the treatment plant. Dye testing inspection implemented by MATR should reduce I/I to this system. MATR is planning major investigation efforts for this watershed to identify and eliminate all sources of I/I. Cost effective solutions will be implemented.

The Campbell Run STP service area population of approximately 7,350 is projected to increase to approximately 11,828 by 2015. Based on the 2015 population increase, the projected average daily hydraulic loading is projected to increase to approximately 1.18 mgd, and the organic loading is projected to increase to approximately 1,957 lbs. CBOD₅/day. The hydraulic and organic loading capacities of the current plant appear to be inadequate for the projected average daily flow and organic loading conditions in 2015.

The Moon Run STP service area population of approximately 2,130 is projected to increase to approximately 3,428 by 2015. Based on the 2015 population increase, the projected average daily hydraulic loading is projected to increase to approximately 0.343 mgd, and the organic loading is projected to increase to approximately 627 lbs. CBOD₅/day. The hydraulic and organic loading capacities of the current plant appear to be inadequate for average daily flow and organic loading conditions in 2015.

The Covi/Douglas STP service area population of approximately 1,210 is projected to increase to approximately 2,000 by 2015. Based on the 2015 population increase, the projected average daily hydraulic loading is projected to increase to approximately 0.20 mgd, and the organic loading is projected to increase to approximately 330 lbs. CBOD₅/day. The hydraulic and organic loading capacities of the current plant appear to be inadequate for projected average daily flow and organic loading conditions in 2015.

The Mun. Authority of the Twp. of Robinson

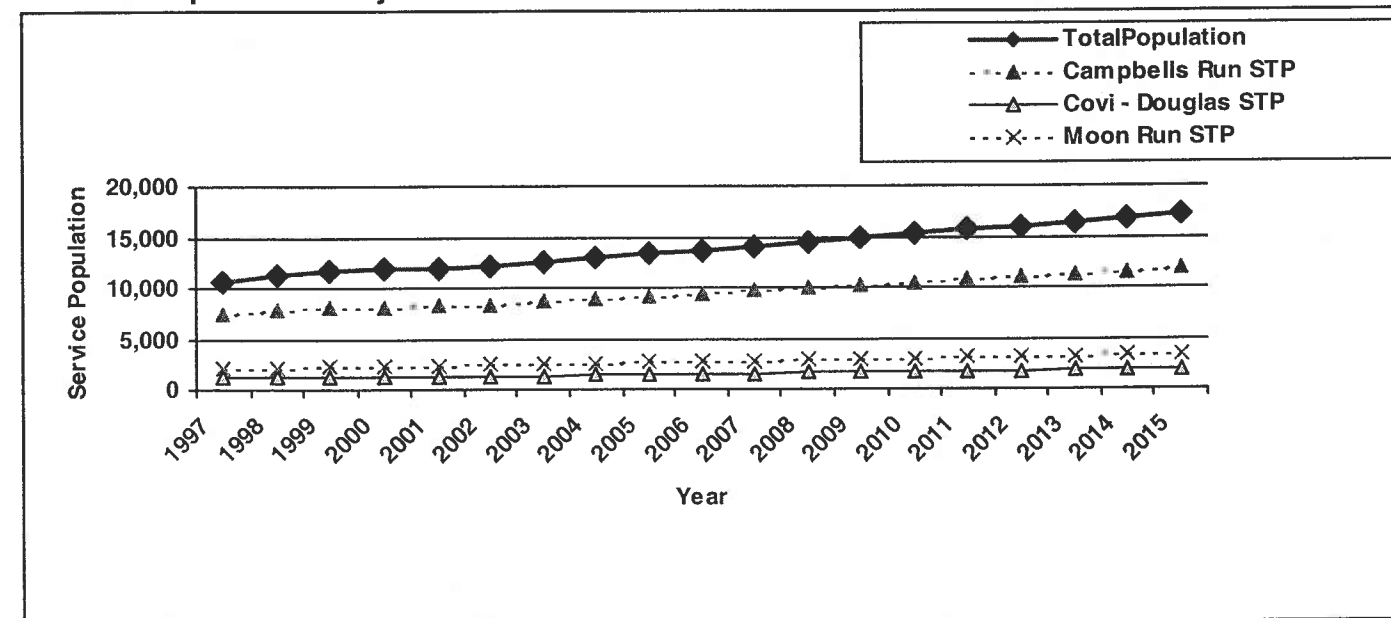
Service Area Summary

POTW Name	1997 Service Population	2015 Service Population	Municipality	Type Of Sewer System
Campbells Run STP	7350	11828	Collier Township	Separate
			North Fayette Township	Separate
			Robinson Township	Separate
Covi - Douglas STP	1210	1947	Robinson Township	Separate
Moon Run STP	2130	3428	Robinson Township	Separate

Treatment Process Summary

POTW Name	Equalization	Screening	Comminution	Grit Removal	Prechlorination	Primary Treatment	Activated Sludge	Extended Aeration	Contact Stabilization	Trickling Filter	Disinfection	Dechlorination	Filtration	Regeneration	Thickening	Aerobic Digestion	Anaerobic Digestion	Line Stabilization	Composting	Thermal Processing	Dewatering	Land Application	Landfill	Incineration	Haul to other STP	Odor Control
Campbells Run STP		■	■	■	■		■		■				■												■	
Covi - Douglas STP							■		■																■	
Moon Run STP		■		■		■		■																	■	

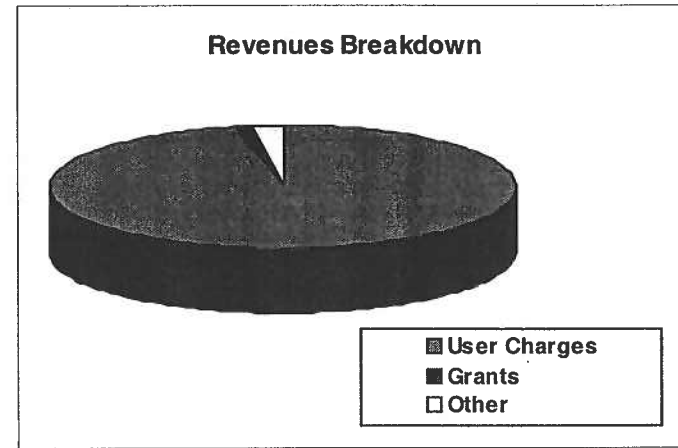
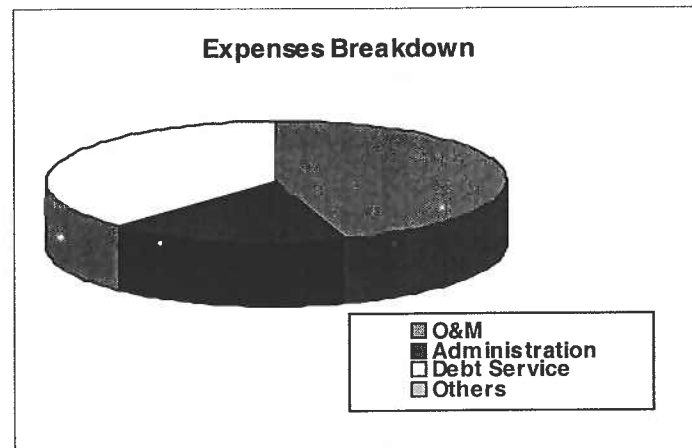
Service Population Projections



The Mun. Authority of the Twp. of Robinson

Sewer Use Ordinances

Municipality	Corrective Action Plan	Grease Trap Requirement	Industrial Pretreatment Program	Illicit Connection Inspection At Sale	Surcharge
Collier Township	No		ALCOSAN	No	
North Fayette Township	No		Yes, MTMA's pretreatment ordinance	No	
Robinson Township	No	Yes	Yes, adopted MTMA's pretreatment ordinance	Yes	No



Financial Information

REVENUES			
User Charges:		\$2,382,600	
Grants:		\$26,446	
Other:		\$53,500	
Total Revenues		\$2,462,546	
EXPENSES			
Operations and Maintenance		\$1,077,800	
Administration:		\$397,600	
Debt Service:		\$904,065	
Other:		\$0	
Total Expenses		\$2,379,465	
Surplus(Deficit):		\$83,081	
Debt Service Coverage Ratio		1.09	
Information Source:	YEAR:	1998	Actual/ Budgeted
Revenues	Twp. Of Robinson Annual Report (NIRA Eng.)		Budgeted
Expenses	Twp. Of Robinson Annual Report (NIRA Eng.)		Budgeted

The Mun. Authority of the Twp. of Robinson

Collection System Facilities

TREATMENT PLANT	Design Capacity (MGD)	Biological Treatment	Owner	Operator
Campbells Run STP	1	Extended Aeration	MATR	MATR
<u>Pump Station</u>	<u>Peak Capacity</u>	<u>Avg Daily Flow</u>	<u>Owner</u>	<u>Operator</u>
Knightsbridge	270 gpm	11 gpm	MATR	MATR
Thornberry	270 gpm	48 gpm	MATR	MATR
Upper Pinkerton Run (Bayer)	650 gpm	65 gpm	MATR	MATR
West Harbison Rd.	360 gpm	5 gpm	MATR	MATR
<u>Equalization Basin</u>	<u>Capacity</u>	<u>Location</u>	<u>Owner</u>	<u>Operator</u>
None				

TREATMENT PLANT	Design Capacity (MGD)	Biological Treatment	Owner	Operator
Covi - Douglas STP		Extended Aeration	MATR	MATR
<u>Pump Station</u>	<u>Peak Capacity</u>	<u>Avg Daily Flow</u>	<u>Owner</u>	<u>Operator</u>
Douglas Hill Ejector	40 gpm	10 gpm	MATR	MATR
Douglas Hills Dendron Dr.	240 gpm	50 gpm	MATR	MATR
Magnus Lane Ejector	50 gpm	7 gpm	MATR	MATR
<u>Equalization Basin</u>	<u>Capacity</u>	<u>Location</u>	<u>Owner</u>	<u>Operator</u>
None				

TREATMENT PLANT	Design Capacity (MGD)	Biological Treatment	Owner	Operator
Moon Run STP	0.25	Extended Aeration	MATR	MATR
<u>Pump Station</u>	<u>Peak Capacity</u>	<u>Avg Daily Flow</u>	<u>Owner</u>	<u>Operator</u>
Montour High School	200 gpm	49 gpm	MATR	MATR
<u>Equalization Basin</u>	<u>Capacity</u>	<u>Location</u>	<u>Owner</u>	<u>Operator</u>
None				

Sewer Maintenance Information

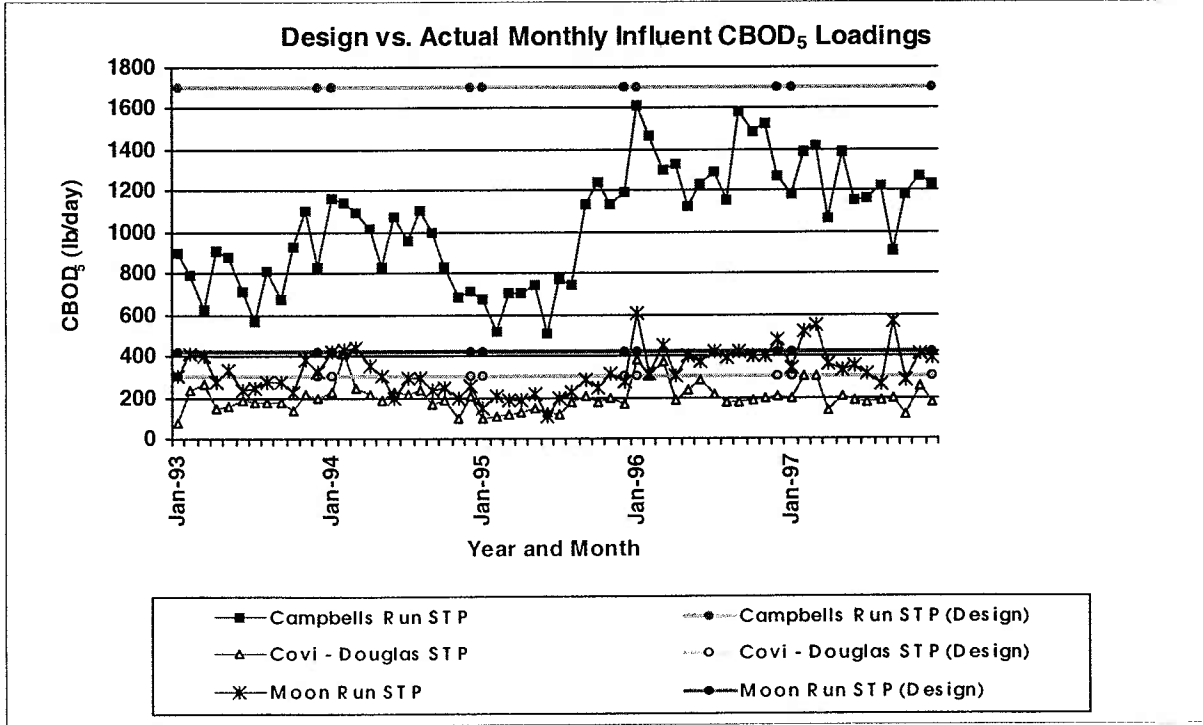
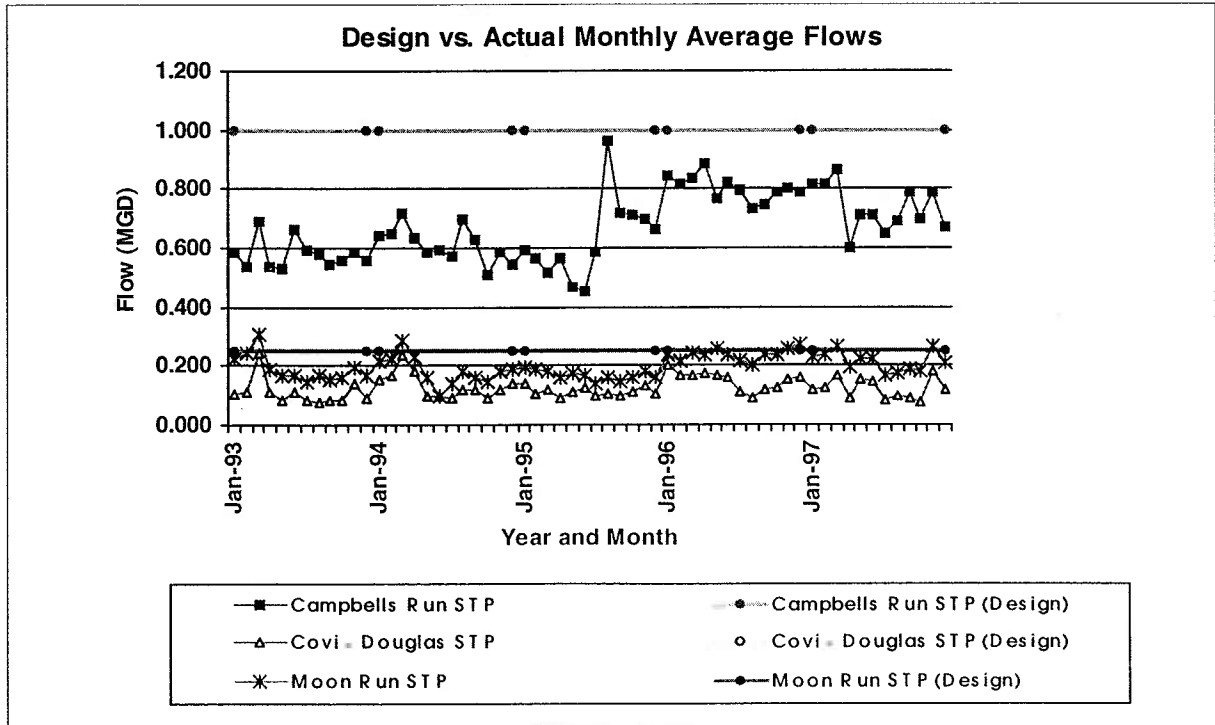
<i>Service Community</i>	<i>Maintained By:</i>	<i>Mainten. Done:</i>	<i>Equipment Source</i>	<i>I/I Removal</i>	<i>I/I Flow Monitor</i>
Robinson Township	MATR, Contractor	Routine	Authority	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

The Mun. Authority of the Twp. of Robinson

1997 Plant Performance

Moon Run STP	Average Daily Flow (mgd)			CBOD ₅ (lb/Day)			Permit Limits			TSS (lb/Day) Effluent			Permit Limits			Effluent Coliform (Col./100ml)			Permit Limits		
	Monthly	Summer	Winter	Monthly Influent	Average Effluent	% Removal	Summer	Winter	Average	Summer	Winter	Average Daily	Summer	Winter							
January	0.231			346	22	94%			54			167									
February	0.239			514	0	100%			0			nd									
March	0.266			552	13	98%			20			nd									
April	0.192			360	8	98%			19			nd									
May	0.220			334	11	97%			25			nd									
June	0.226			350	13	96%			21			nd									
July	0.168			310	3	99%			3			nd									
August	0.171			265	4	98%			8			nd									
September	0.186			565	7	99%			8			nd									
October	0.178			280	6	98%			20			nd									
November	0.264			411	22	95%			17			nd									
December	0.211			393	13	97%			25			nd									
Maximum	0.27	0.25	0.25		22.43		52	52	54	62	62	167	200	2000							
Max as % Limit	106%				43%				88%			83%									
Average	0.21				10				18			167									
3 Month > Limit?	No																				

Plant Loading Summary



The Mun. Authority of the Twp. of Robinson

Intermunicipal Agreements

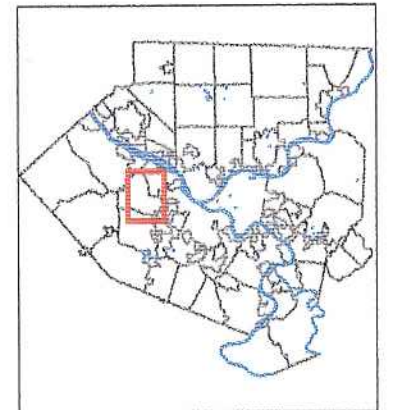
Agreement With	Date Enacted	Agreement Description	Expiration Date	Flow Limits (mgd)	Rate and Surcharge Provisions	Sampling Provisions	Flow Monitoring Provisions	Dispute Resol. Procedure	Basis of Cost Allocation
ALCOSAN	1971	Agreement for sewage conveyance and treatment of service area tributary to ALCOSAN	Bonds + 1 year	0.7 mgd		As-needed	Yes	No	Flow Meter
Collier Township	Agreement not available	Agreement for conveyance and treatment of sewage at the Campbells Run STP							
Coraopolis, Borough of	11/14/81	Coraopolis Municipal Sanitary Authority, Borough of Coraopolis, Municipal Authority of the Township of Robinson, and the Township of Robinson for transport and treatment of the Groveton area							Metered at the Montour Pump Station
Moon Township	02/01/71	Agreement states that Robinson Twp. will make provisions for the transportation, treatment, and disposal of sewage generated in the Montour Run Watershed Area for treatment by the MTMA	Until the date of the expiration of the legal existence of the Moon Authority or until the expiration of one calendar year following the payment in full of the bonds	None			None	Arbitration	Charged on actual costs - MTMA makes no money
North Fayette Township	Agreement not available	Agreement for conveyance and treatment of sewage at the Campbells Run STP							

Municipal Authority of the Township of Robinson

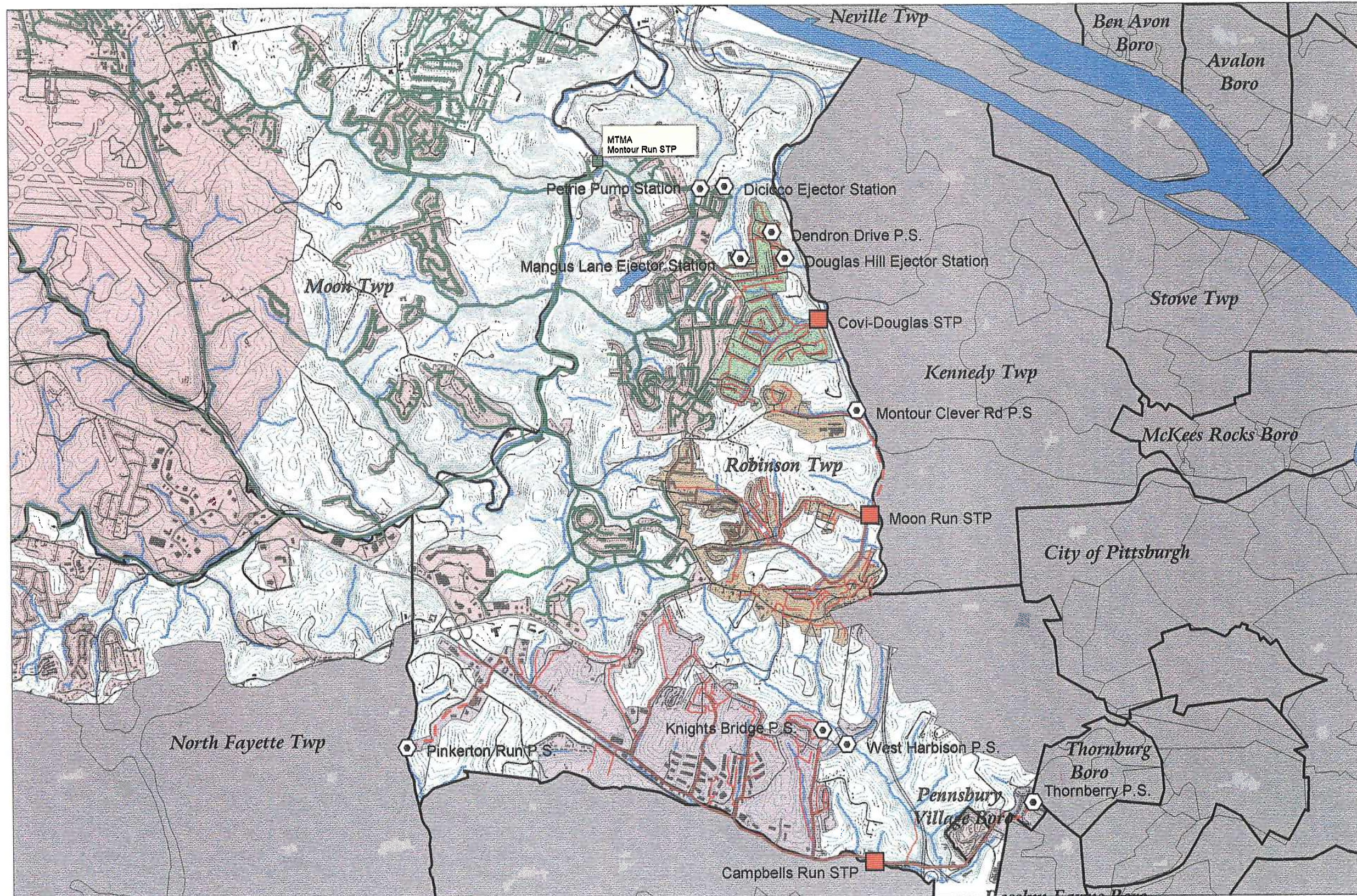
Water Pollution Control Facility Service Area and Collection System

Allegheny County
Department of Economic Development

Allegheny County, PA



1000 0 1000 2000 Feet



- Public Treatment Facility
- Existing STP
- Pump Station
- Municipal Boundary
- Major Road
- Contour
- Hydrologic Feature
- Building
- Township of Robinson
- Collection System
- Campbells Run STP Service Area
Separate System
- Covi Douglas STP Service Area
Separate System
- Moon Run STP Service Area
Separate System
- On - Lot Problem Area
- Pipe Type
- Collector
- Force Main
- Trunk
- Neighboring Service Area
- Neighboring Collection System
- ALCOSAN Service Area

Not Field Verified
Source: Robinson Twp. Existing Sanitary Sewer System Map

Borough of Sewickley

The Borough of Sewickley owns and operates the Sewickley Borough Sewage Treatment Plant (STP) providing sewage transportation and treatment services to the Borough of Sewickley, Osborne Borough, several homes in Aleppo Township and one home in Sewickley Heights via a combined sewer system. In addition, some stormwater from Edgeworth Borough is conveyed by Sewickley Borough's sewage system. The Borough of Sewickley operates a 0.9-mgd, 1,800 lb CBOD₅/day extended aeration activated sludge treatment plant that discharges to the Ohio River. The average monthly flow at the Sewickley Borough STP in 1997 was 0.62 mgd and the average monthly organic loading in 1997 was 623 lb CBOD₅/day.

The Sewickley Borough STP was constructed in 1957. Secondary treatment was added in approximately 1963. In 1997 a new digester was installed, the chlorine room was relocated and other plant improvements were made to stay current with regulatory standards. There is a possibility that Sewickley Borough will be accepting waste from Aleppo Township in the future, however, no decisions are being made until Sewickley Borough evaluates plant and collection system modifications that would be necessary to accommodate Aleppo.

The Sewickley Borough sewer system is a mostly combined system; all of Sewickley Borough and Osborne are sewered. There are five CSO chambers throughout the system including WWTP/Ferry Street, Maple Lane, Chestnut Street, Academy Avenue, and Boundary Street. Regulators are upstream of the pump stations (P.S.) and pump stations are named after the street on which they are located. Chestnut Street P.S., Maple Lane Lift Station, and Academy Avenue P.S. are located within and owned and operated by Sewickley Borough. The Boundary Street P.S. is located within Osborne Borough, but owned and operated by Sewickley Borough. The remaining two pump stations (Osborne #1 P.S. and Osborne #2 P.S.) are both located within and owned and operated by Osborne Borough. System overloads have been known to occur during heavy rains and/or high river water stages. To control backflows of the river water into plant influent lines, a manhole was constructed with stop log weirs to allow plant operators to attempt to control the backflow during these overload occurrences. The manhole is located between the Ferry Street overflow manhole and the plant discharge line leading to the Ohio River. In accordance with NPDES permit CSO requirements, the Borough submitted the system inventory and characterization report, the system hydraulic characterization report, and documentation of implementation of nine minimum controls.

In addition, Sewickley Borough has proposed a Corrective Action Plan (CAP) to alleviate the overload problem, specifically in the vicinity of the 700 block of Centennial Avenue. Also, now that the sewer-mapping project is complete, a comprehensive plan to separate a significant portion of the stormwater from sanitary or combined sewers will be developed.

Sewickley Borough maintains and repairs its own sewer system using personnel through the Street Department or through a contractor (major problems only). All pump stations are inspected daily by STP personnel and any minor repairs or preventative maintenance is performed at each station by STP personnel or on a contract basis. Sewickley Borough has some of its own equipment (e.g., two, 1-ton pick-up trucks, backhoe, tamper, hydraulic jack, etc.), however vactor equipment for cleaning manholes, catch basins, etc. is borrowed annually from the Quaker Valley Council of Governments (QVCOG). Osborne Borough monitors and maintains the sewer system and appurtenances within its jurisdiction through a contractor. To date, Aleppo Township maintenance has been a joint effort by agreement between private owners and Aleppo. The sewer system components located in Edgeworth Borough and Sewickley Heights, are maintained by local forces; Edgeworth and Sewickley Heights comprise a very small portion of the overall system.

The Sewickley Borough service area population of approximately 4,860 is projected to increase to approximately 4,900 by 2015. Based on the 2015 population increase, the hydraulic and organic loadings to the treatment plant are expected to increase by two percent. The hydraulic loading is projected to increase to approximately 0.63 mgd, and the organic loading is projected to increase to approximately 630 lb CBOD₅/day. The current hydraulic and organic loading capacities of the plant appear to be adequate for the projected loading conditions in 2015.

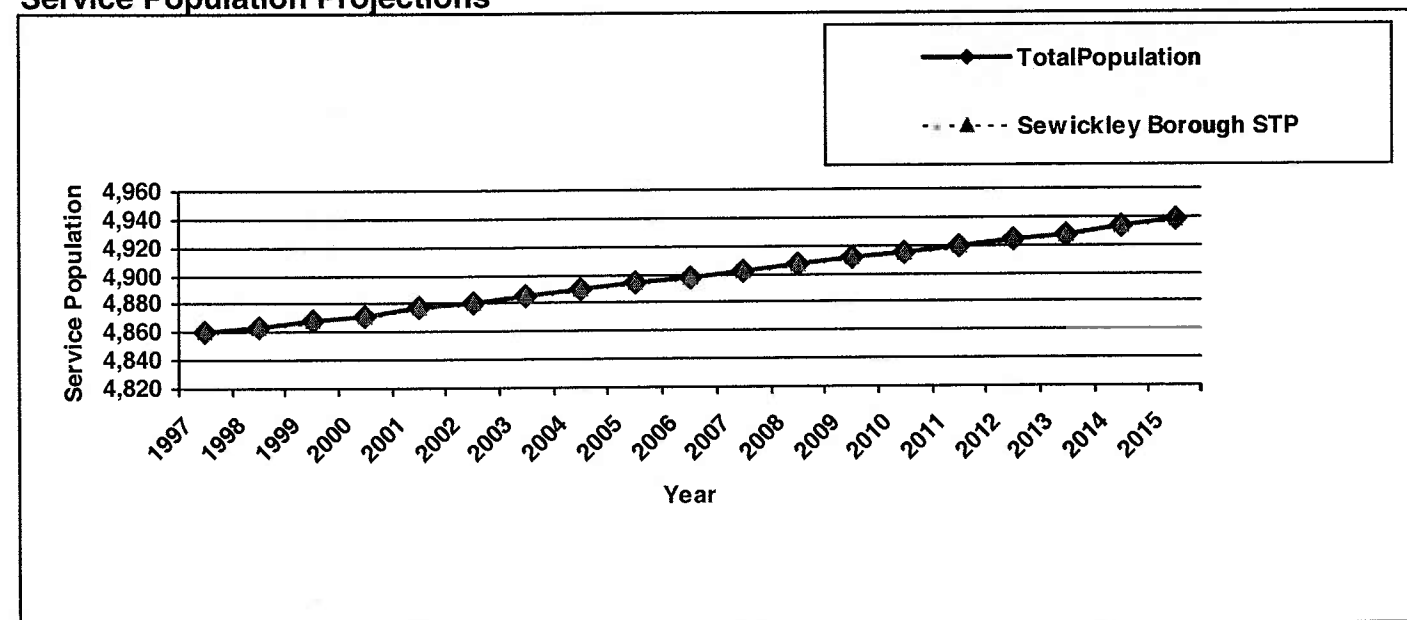
Service Area Summary

POTW Name	1997 Service Population	2015 Service Population	Municipality	Type Of Sewer System
Sewickley Borough STP	4860	4938	Aleppo Township	Separate
			Edgeworth Borough	Combined
			Osborne Borough	Separate
			Sewickley Borough	Combined

Treatment Process Summary

POTW Name	Equalization	Screening	Comminution	Grit Removal	Prechlorination	Primary Treatment	Activated Sludge	Extended Aeration	Contact Stabilization	Trickling Filter	Disinfection	Dechlorination	Filtration	Regeneration	Thickening	Aerobic Digestion	Anaerobic Digestion	Line Stabilization	Composting	Thermal Processing	Dewatering	Land Application	Landfill	Incineration	Haul to other STP	Odor Control	
Sewickley Borough STP		■	■			■	■																				

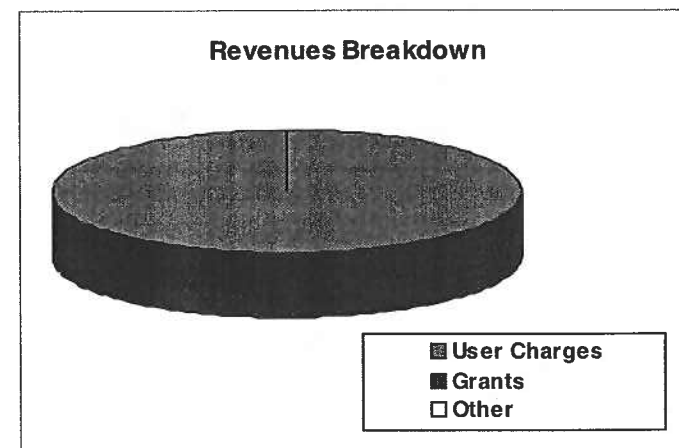
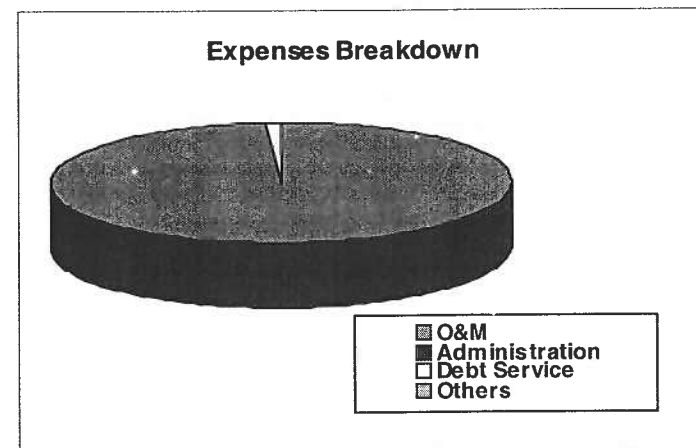
Service Population Projections



Borough of Sewickley

Sewer Use Ordinances

Municipality	Corrective Action Plan	Grease Trap Requirement	Industrial Pretreatment Program	Illicit Connection Inspection At Sale	Surcharge
Aleppo Township	No	Yes	No	Yes	
Edgeworth Borough	Yes	Yes	No industrial customers		Yes
Osborne Borough					
Sewickley Borough	Yes	Yes	No	No	No



Financial Information

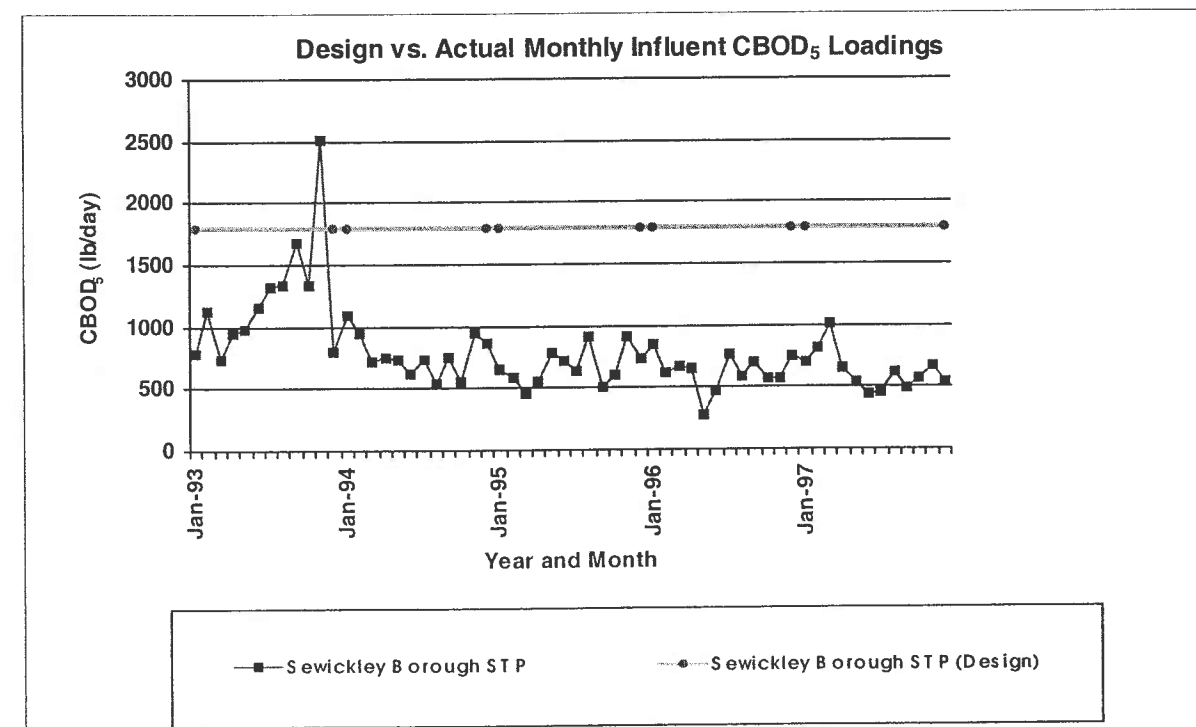
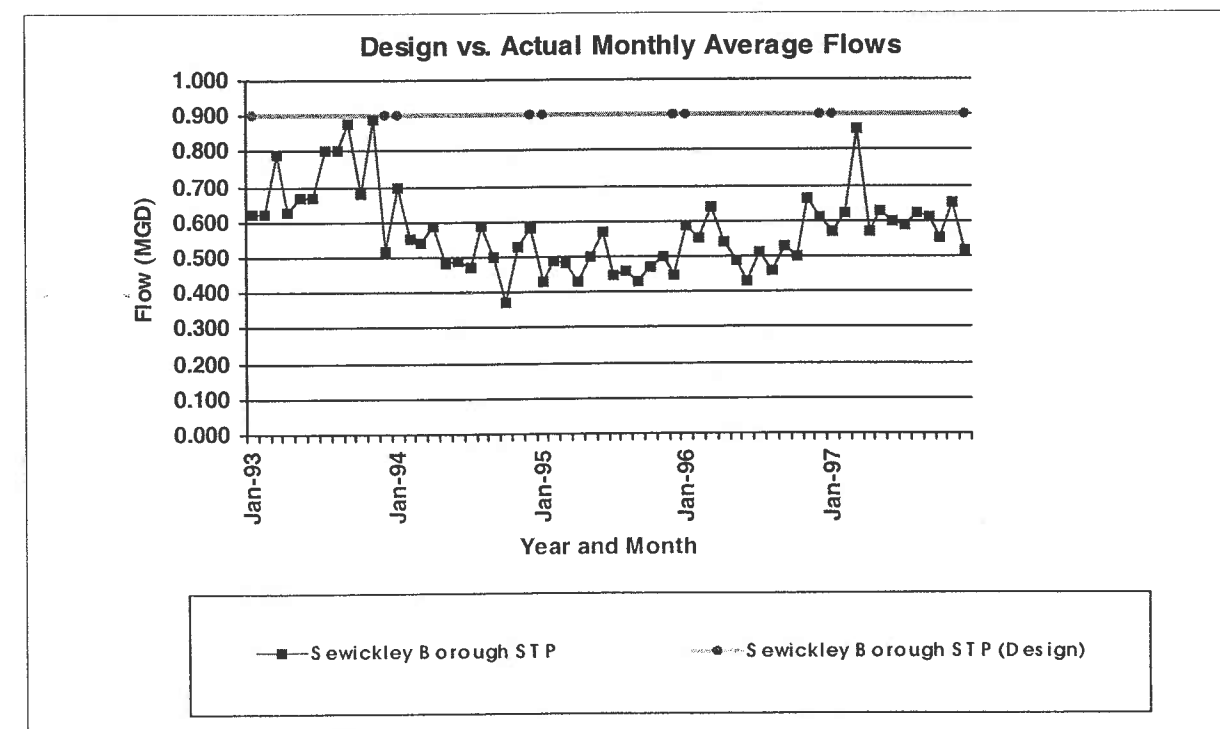
REVENUES		
User Charges:		\$590,000
Grants:		\$0
Other:		\$0
Total Revenues		\$590,000
EXPENSES		
Operations and Maintenance		\$583,335
Administration:		\$0
Debt Service:		\$6,665
Other:		\$0
Total Expenses		\$590,000
Surplus(Deficit):		\$0
Debt Service Coverage Ratio		1.00
Information Source:	YEAR: 1998	Actual/Budgeted
Revenues	Borough of Sewickley Sewer Operating Fund	Budgeted
Expenses	Borough of Sewickley Sewer Operating Fund	Budgeted

Borough of Sewickley

1997 Plant Performance

Sewickley Borough STP	Average Daily Flow (mgd)			CBOD ₅ (lb/Day)			Permit Limits			TSS (lb/Day) Effluent	Permit Limits			Effluent Coliform (Col./100ml)	Permit Limits		
	Monthly	Summer	Winter	Monthly Influent	Average Effluent	% Removal	Summer	Winter	Average		Summer	Winter	Average Daily		Summer	Winter	
January	0.57			694	27	96%			36			247					
February	0.62			822	33	96%			54			7					
March	0.86			1,011	37	96%			26			50					
April	0.57			651	17	97%			76			6					
May	0.63			531	21	96%			83			49					
June	0.60			445	16	96%			22			33					
July	0.59			453	15	97%			37			6					
August	0.62			615	10	98%			25			3					
September	0.61			493	nd	nd			nd			nd					
October	0.55			569	nd	nd			nd			nd					
November	0.65			661	nd	nd			nd			nd					
December	0.52			533	nd	nd			nd			nd					
Maximum	0.86	0.90	0.90		37		188	188	83	225	225	247	200	2000			
Max as % Limit	96%				20%				37%			12%					
Average	0.62				22				45			50					
3 Month > Limit?	No																

Plant Loading Summary



Borough of Sewickley

Collection System Facilities

TREATMENT PLANT	Design Capacity (MGD)	Biological Treatment	Owner	Operator
Sewickley Borough STP	0.9	Activated Sludge	SEWB	SEWB

Pump Station	Peak Capacity	Avg Daily Flow	Owner	Operator
Academy Ave.	150 gpm	107,000 gpd	SEWB	SEWB
Boundary St.	1,100 gpm	132,000 gpd	SEWB	SEWB
Chestnut Street	1,500 gpm	321,000 gpd	SEWB	SEWB
Maple Lane L.S.	150 gpm	10,600 gpd	SEWB	Sewickley B.
Osborne #1		25,000 gpd	Osborne B.	Osborne B.
Osborne #2		25,000 gpd	Osborne B.	Osborne B.

Equalization Basin	Capacity	Location	Owner	Operator
None				

Sewer Maintenance Information

<i>Service Community</i>	<i>Maintained By:</i>	<i>Mainten. Done:</i>	<i>Equipment Source</i>	<i>I/I Removal</i>	<i>I/I Flow Monitor</i>
Aleppo Township	Local Forces	As-needed	Township, Contractor	<input type="checkbox"/>	<input type="checkbox"/>
Edgeworth Borough	Edgeworth Borough	No Data	No Data	<input type="checkbox"/>	<input type="checkbox"/>
Osborne Borough	Contractor	No Data	No Data	<input type="checkbox"/>	<input type="checkbox"/>
Sewickley Borough	Street Dept.	Routine	Authority, COG	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Sewickley Heights Borough	Local Forces	As-needed	Township, Contractor	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Borough of Sewickley

Intermunicipal Agreements

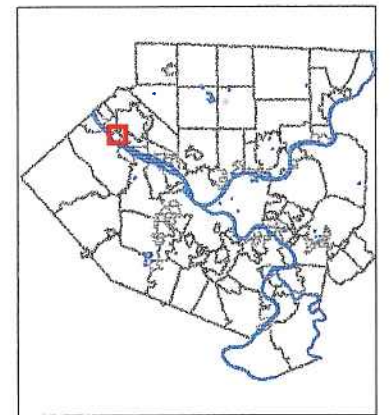
Agreement With	Date Enacted	Agreement Description	Expiration Date	Flow Limits (mgd)	Rate and Surcharge Provisions	Sampling Provisions	Flow Monitoring Provisions	Dispute Resol. Procedure	Basis of Cost Allocation
Osborne, Borough of	11/17/98	Sewickley shall exclusively render sewage treatment services to the owners and/or occupants of all developed properties within Osborne which are connected with Osborne's Sewage Facilities within the geographic area set forth	12/31/21	None		None		Arbitration	Sewickley Borough bills customers individually based on water consumption

Borough of Sewickley

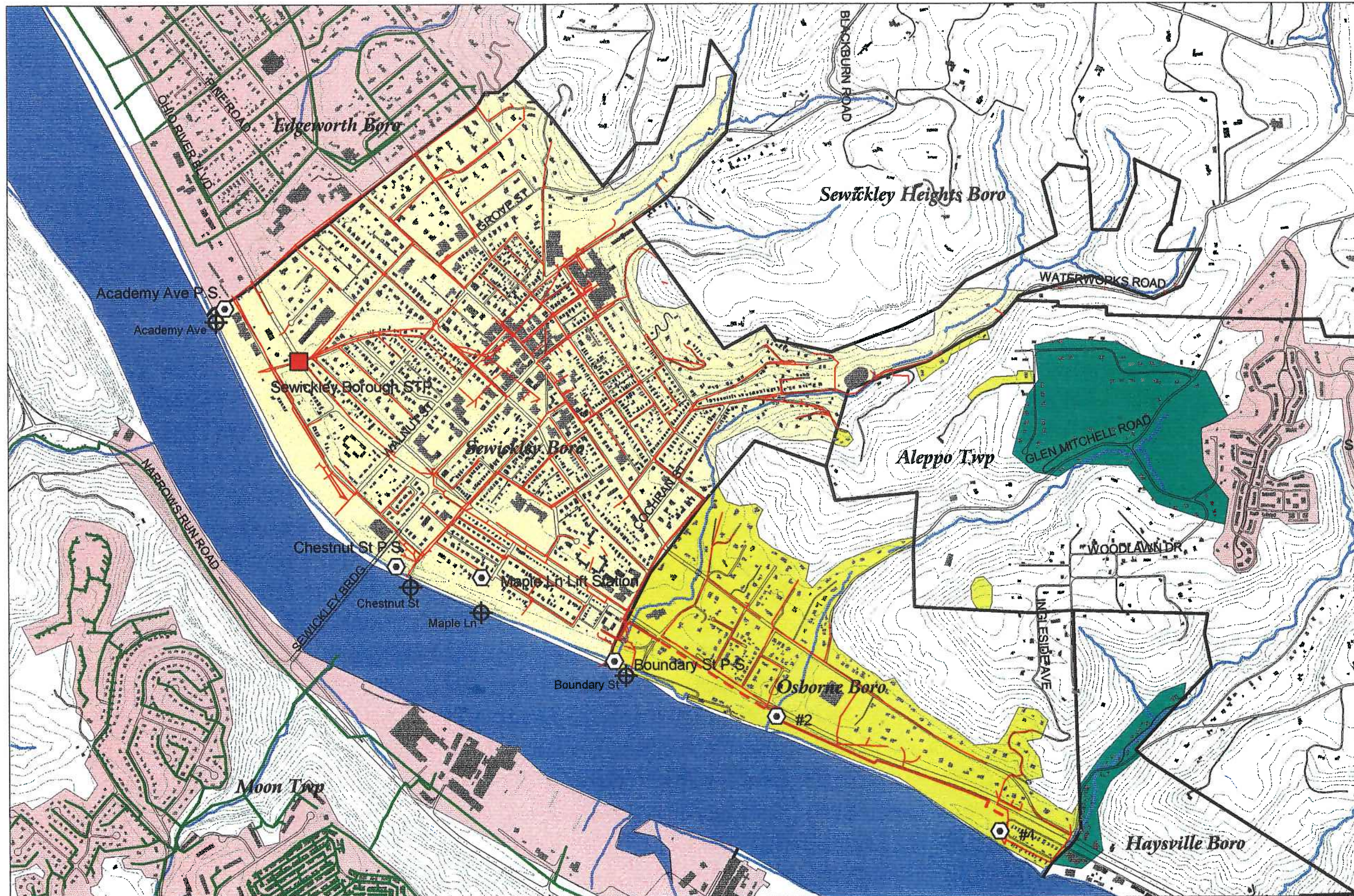
Water Pollution Control Facility Service Area and Collection System

Allegheny County
Department of Economic Development

Allegheny County, PA



300 0 300 600 Feet



- Public Treatment Facility
- Existing STP
- Pump Station
- Combined Sewer Outfall
- Municipal Boundary
- Major Road
- Contour
- Hydrologic Feature
- Building
- Collection System
- Combined
- Separate
- On-Lot Problem Area
- Pipe Type
- Collector
- Force Main
- Trunk
- Neighboring Service Area
- Neighboring Collection System

Not Field Verified

Source: Waste Water Treatment Plant USGS Location Map
Chester Engineering Digital Sewer Lines

Sewickley Hills Borough

Sewickley Hills Borough (SHB) owns and operates the Sewickley Hills Borough Sewage Treatment Plant (STP) which serves approximately 73 residential customers, or approximately one-third of the borough's population. All of the customers are located in close proximity to the Sewickley Hills STP; the remainder of the borough is unsewered and utilizes on-lot systems.

Until recently, the system was managed and operated by the Sewickley Hills – Kilbuck Run Sanitary Authority (SHKRSA). In late 1998, Sewickley Hills Borough disbanded the SHKRSA and now, manages the system. The STP is a 0.018-mgd extended aeration treatment plant that discharges to a dry swale tributary to Kilbuck Run, a cold water fishery. The STP had a history of operating problems and is at, or exceeding its permitted capacity. The borough recently submitted a permit application to the Department of Environmental Protection (DEP) for a new 0.04-mgd treatment facility. The proposed plant will provide additional capacity for existing on-lot developments and will accommodate future growth. The final location of the proposed plant has not been selected as regulatory agencies are working towards creating a regional solution to the watershed problems in the Kilbuck Run watershed. Regionalization with the Deer Valley STP, a private plant located in Ohio Township, is one option that is being considered. Although the Deer Valley plant is less than one mile away from the SHB existing plant, the plant lies across Interstate 79 from the SHB service area. An interceptor to transport the wastewater under Interstate 79 would be required. for the borough to tie into the Deer Valley plant.

Because of the ongoing operations and maintenance problems at the Sewickley Hills STP, regulatory agencies directed the development of a Corrective Action Plan for the Sewickley Hills plant in 1989 and again in 1991. Sewickley Hills Borough and the SHKRSA submitted a Corrective Action Plan to the ACHD in 1991 in response to a Compliance Order from the ACHD. ACHD inspections had revealed "serious effluent violations of their NPDES permit, as well as chronic operational and maintenance violations in previous years". ACHD called for an "intensive and comprehensive operations and maintenance program (that) must be carried out consistently". While in existence, the SHKRSA corrected these problems by hiring a new operator for the plant who initiated improved sludge removal and handling measures. Sludge removal on a regular basis has eliminated many of the problems at the plant.

The Sewickley Hills collection system is a separate sewer system that was originally built in the early 1980's to serve the West Hills Plan of Lots. The collection system is comprised of a mix of 8-inch terra cotta and plastic pipe. One unnamed pump station transmits sewage collected in the Sewickley Creek watershed to the Kilbuck Run portion of the system. Permit violations noted by ACHD associated with this pump station in 1992 have been corrected.

Currently, no regular monitoring of the collection system is being conducted, however flows are monitored at the STP. A contractor is used for all operations and maintenance work associated with the STP. Sewickley Hills Borough is not currently a member of a Council of Government (COG) and so equipment must be procured on an as-needed basis instead of using equipment maintained by a COG.

The Sewickley Hills service area population of approximately 214 is projected to increase to 297 by the year 2015. As described above, ACHD is anticipating that the Sewickley Hills STP will be abandoned in the near future and replaced with a new larger capacity plant to handle the current and future service area and satisfy regulatory requirements. With this new STP, a revised Sewickley Hills service area will be developed.

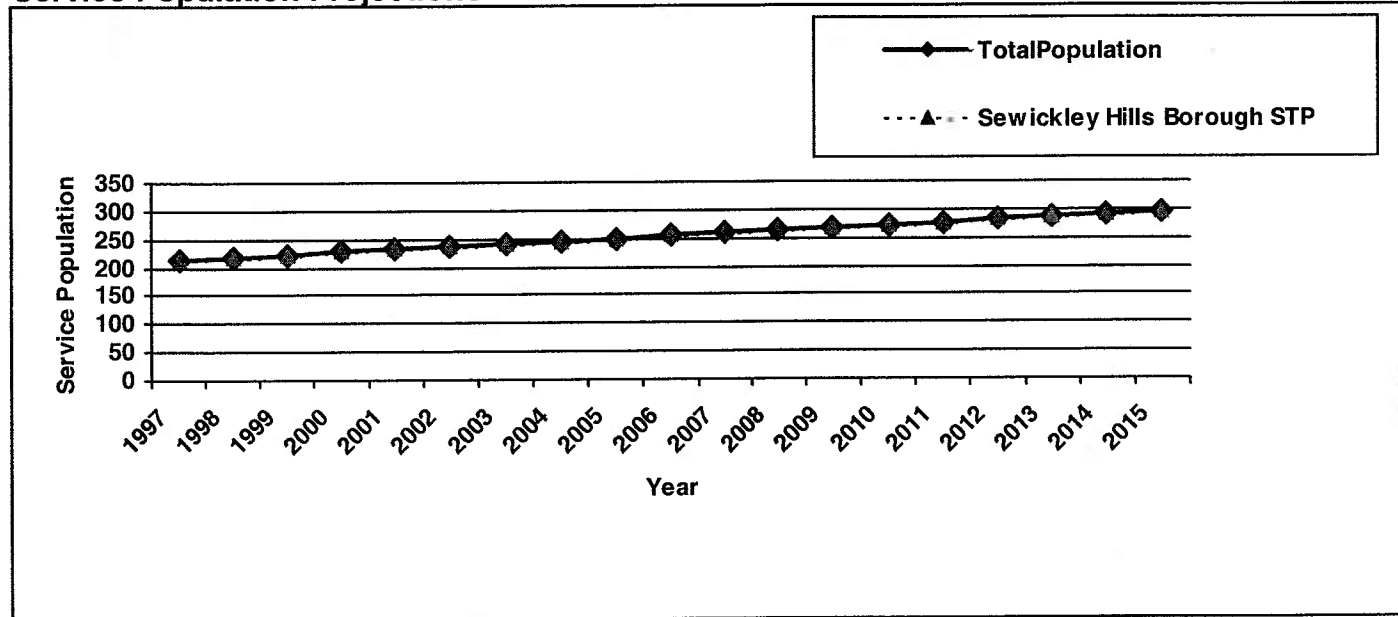
Service Area Summary

POTW Name	1997 Service Population	2015 Service Population	Municipality	Type Of Sewer System
Sewickley Hills Borough STP	214	297	Sewickley Hills Borough	Separate

Treatment Process Summary

POTW Name	Equalization	Screening	Comminution	Grit Removal	Prechlorination	Primary Treatment	Activated Sludge	Extended Aeration	Contact Stabilization	Trickling Filter	Disinfection	Dechlorination	Filtration	Reaeration	Thickening	Aerobic Digestion	Anaerobic Digestion	Lime Stabilization	Composting	Thermal Processing	Dewatering	Land Application	Landfill	Incineration	Haul to other STP	Odor Control
Sewickley Hills Borough STP						■					■															

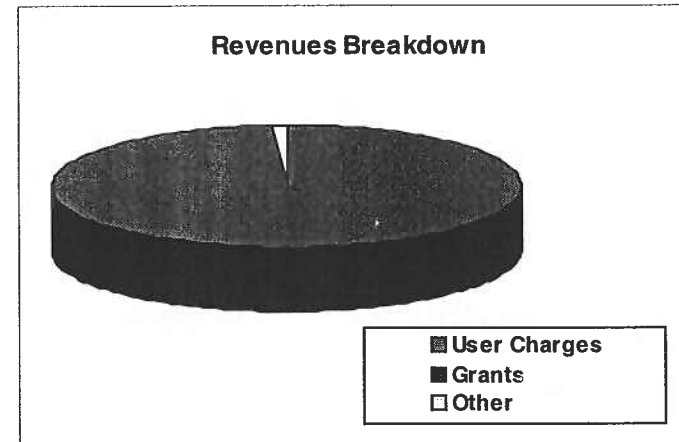
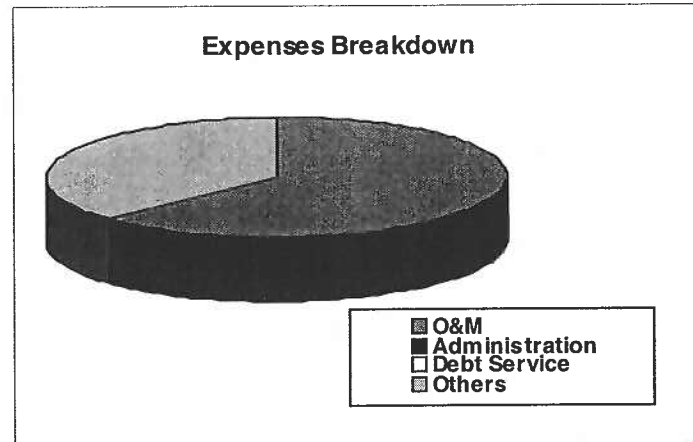
Service Population Projections



Sewickley Hills Borough

Sewer Use Ordinances

Municipality	Corrective Action Plan	Grease Trap Requirement	Industrial Pretreatment Program	Illicit Connection Inspection At Sale	Surcharge
Sewickley Hills Borough	No	No	No	No	



Financial Information

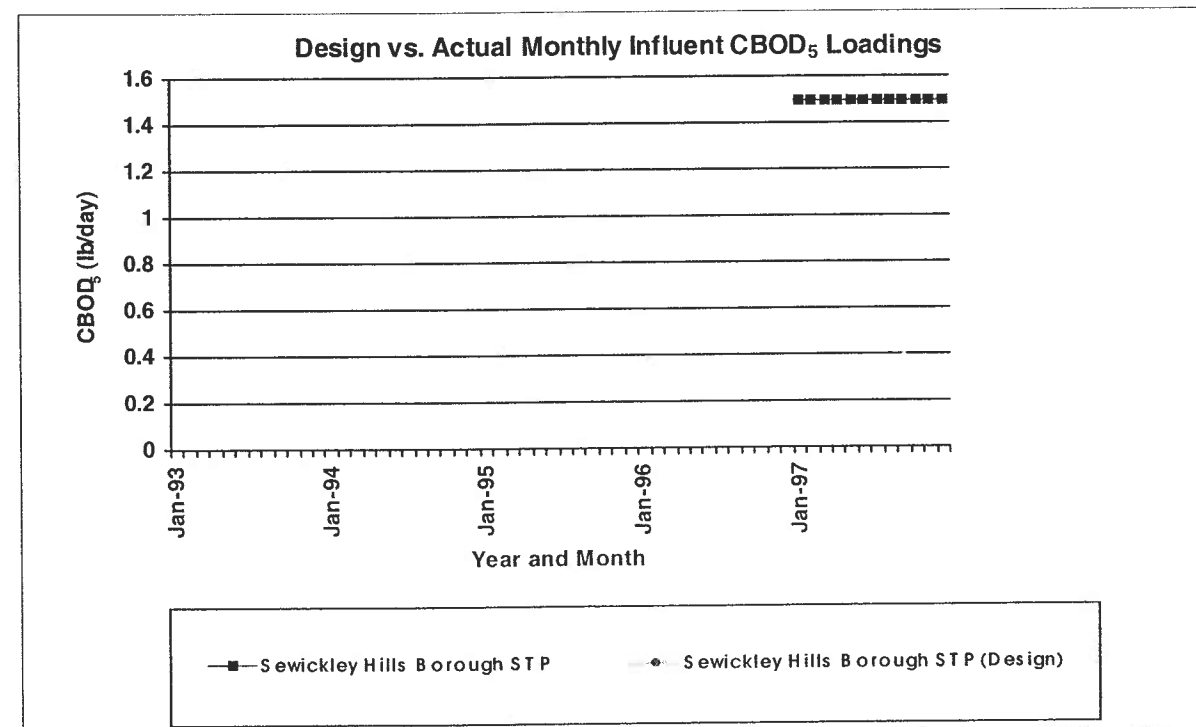
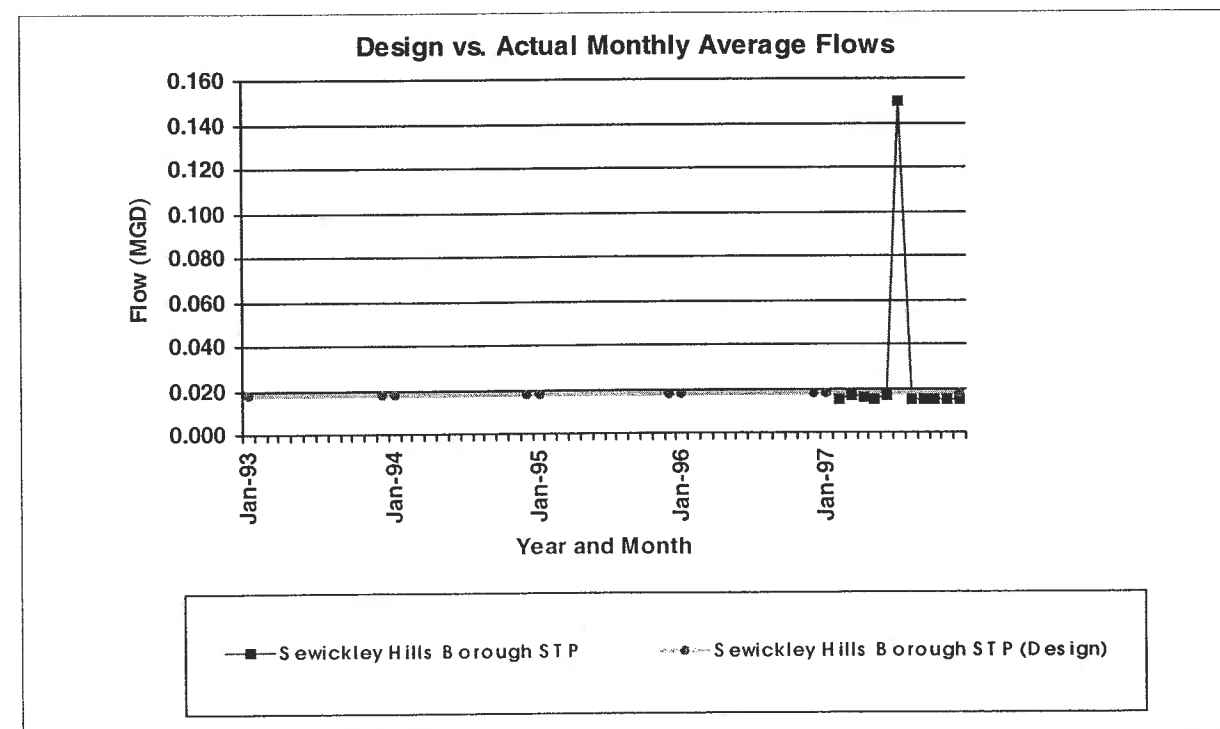
REVENUES		
User Charges:		\$36,500
Grants:		\$0
Other:		\$400
Total Revenues		\$36,900
EXPENSES		
Operations and Maintenance		\$30,250
Administration:		\$0
Debt Service:		\$0
Other:		\$17,750
Total Expenses		\$48,000
Surplus(Deficit):		(\$11,100)
Debt Service Coverage Ratio		
	YEAR:	1998
		Actual/ Budgeted
Information Source:		
Revenues	Sewickley Hills Authority '98 Budget	Budgeted
Expenses	Sewickley Hills Authority '98 Budget	Budgeted

Sewickley Hills Borough

1997 Plant Performance

Sewickley Hills Borough STP	Average Daily Flow (mgd)			CBOD ₅ (lb/Day)			TSS (lb/Day) Effluent			Effluent Ammonia Nitrogen (mg/l)			Effluent Coliform (Col./100ml)		
	Monthly	Summer	Winter	Average Effluent	Summer	Winter	Average	Summer	Winter	Average	Summer	Winter	Average Daily	Summer	Winter
January	nd			nd			nd			nd			nd		
February	0.015			0.68			3.0			0.02			25		
March	0.017			0.78			1.5			0.25			9		
April	0.016			0.47			1.7			0.01			30		
May	0.015			0.43			3.7			0.06			37		
June	0.017			0.80			2.0			0.02			89		
July	0.150			0.44			2.1			0.07			313	E	
August	0.015			0.38			2.2			0.08			22		
September	0.015			0.63			1.6			0.20			1,200	E	
October	0.015			0.00			1.6			0.20			139		
November	0.015			0.00			3.3			0.02			530		
December	0.015			2.06	E		5.8	E		0.03			53		
Maximum	0.15	0.02	0.02	2.06	2	2	5.8	3.8	3.8	0.25	3.0	9.0	1,200	200	2000
Max as % Limit	833%			137%			151%			8%			600%		
Average	0.03			0.61			2.6			0.087			222		
3 Month > Limit?	No														

Plant Loading Summary



Sewickley Hills Borough

Collection System Facilities

TREATMENT PLANT	Design Capacity (MGD)	Biological Treatment	Owner	Operator
Sewickley Hills Borough STP	0.018	Extended Aeration	SHILLS	Contractor
Pump Station	Peak Capacity	Avg Daily Flow	Owner	Operator
Sewickley Hills Borough P.S.			SHILLS	Contractor
Equalization Basin	Capacity	Location	Owner	Operator
None				

Sewer Maintenance Information

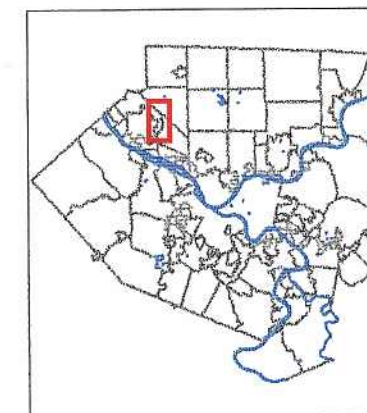
<i>Service Community</i>	<i>Maintained By:</i>	<i>Mainten. Done:</i>	<i>Equipment Source</i>	<i>I/I Removal</i>	<i>I/I Flow Monitor</i>
Sewickley Hills Borough	Sewickley Hills Borough	As-needed	Contractor	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Sewickley Hills Borough

Water Pollution Control Facility Service Area and Collection System

Allegheny County
Department of Economic Development

Allegheny County, PA

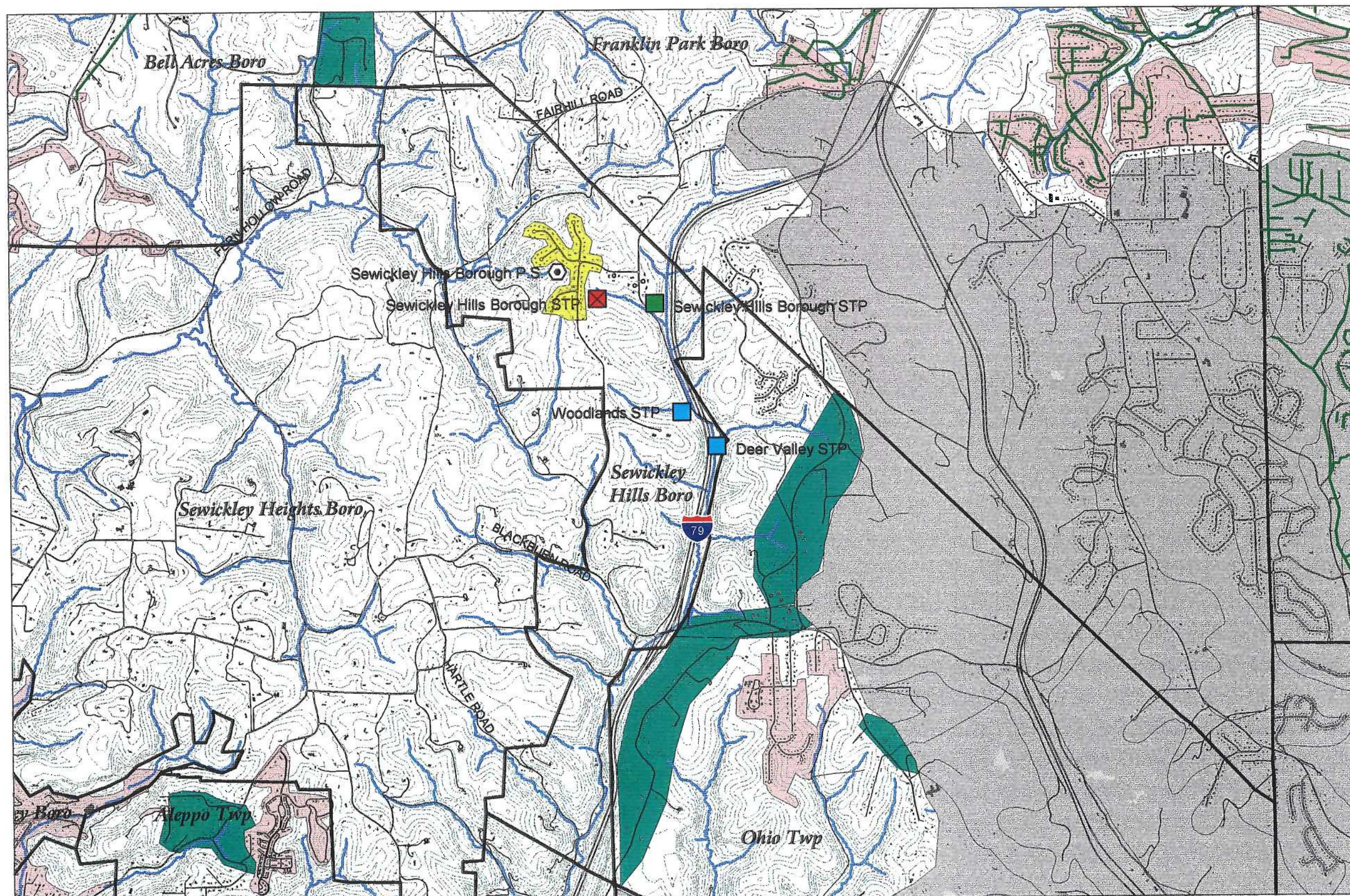


700 0 700 1400 Feet

- Public Treatment Facility
- Existing STP
- Proposed
- To Be Abandoned
- Private STP
- ⊙ Pump Station
- Municipal Boundary
- Major Road
- Contour
- ~ Hydrologic Feature
- Building
- Collection System
- Separate
- On - Lot Problem Area
- Neighboring Service Area
- Neighboring Collection System
- ALCOSAN Service Area

Not Field Verified

Source: Sewickley Hills Boro. Site Location Map



South Versailles Township

South Versailles Township (SVT) operates the South Versailles Township Sewage Treatment Plant (STP) serving approximately 89 residential customers in SVT. There are five commissioners on the Township's board. The South Versailles Township STP serves only residents from South Versailles Township, however, there is one home in South Versailles that is served by North Huntingdon through an informal agreement. The South Versailles STP is a 0.03-mgd extended aeration package plant which discharges to the Youghiogheny River. The plant has a permitted organic loading of 6.3 lb CBOD₅/day.

Under a four-phase plan, construction of the collection system and treatment plant began in 1989. The STP was operational in 1991. The STP was rebuilt in 1996 because of damage sustained from flooding. In the summer of 1997, a new clarifier was installed. Currently, three of the four phases of the plan are already complete. Phase 4 is a sanitary sewer expansion, which will include a pump station to provide sewer service to the lower end of Coulter. In 1997, the average monthly flow at the South Versailles STP was 0.0088 mgd, and the average monthly organic loading was 0.619 lb CBOD₅/day. Disinfection is provided by chlorine tablets. There are no pump stations located in the collection system tributary to the treatment plant.

South Versailles Township owns the sewer system, which has eight-inch diameter sewers. All contributing sewers are separate and there are no relief points in the collection system. The Horseshoe Drive area located in South Versailles Township is unsewered, which includes approximately 17 homes on septic systems. Permission was given to these homes to tie into North Huntingdon. There are also six or seven homes located on Coulterville Road (coming down the hill into Coulter) and an area of Coulter located downstream of Fifth Avenue (approximately 35 homes) which are unsewered. These homes will be sewered under the Phase 4 expansion project.

Township employees perform monitoring, maintenance, and repair work as needed on the collection system. There is a contingency plan to use a contractor for sewer backhoe work when necessary. The Township is a member of the Twin Rivers Council of Governments (TRCOG). The TRCOG has a vactor truck available for sewer cleaning and televising equipment. White Oak Borough also has televising equipment available to SVT. Because the collection system is fairly new, there are no existing I/I problems; all homes were inspected when initial connections were made to the collection system.

Septic tanks serving homes on Horseshoe Drive allegedly discharge to a mine. If public sewer service were provided in the future, these homes would be part of the North Huntingdon service area. Homes located at the lower end of Coulter are currently served by malfunctioning septic systems. This area will be sewered under phase 4 of the Township's four-phase program.

The South Versailles Township service area population of approximately 525 is projected to increase to approximately 580 by 2015. Based on the 2015 population increase, the hydraulic and organic loadings to the treatment plant are expected to increase by nine percent. The hydraulic loading is projected to increase to approximately 0.01 mgd, and the organic loading is projected to increase to approximately 0.7 lb CBOD₅/day. The hydraulic and organic loading capacities of the plant appear to be adequate for the projected loading conditions in 2015.

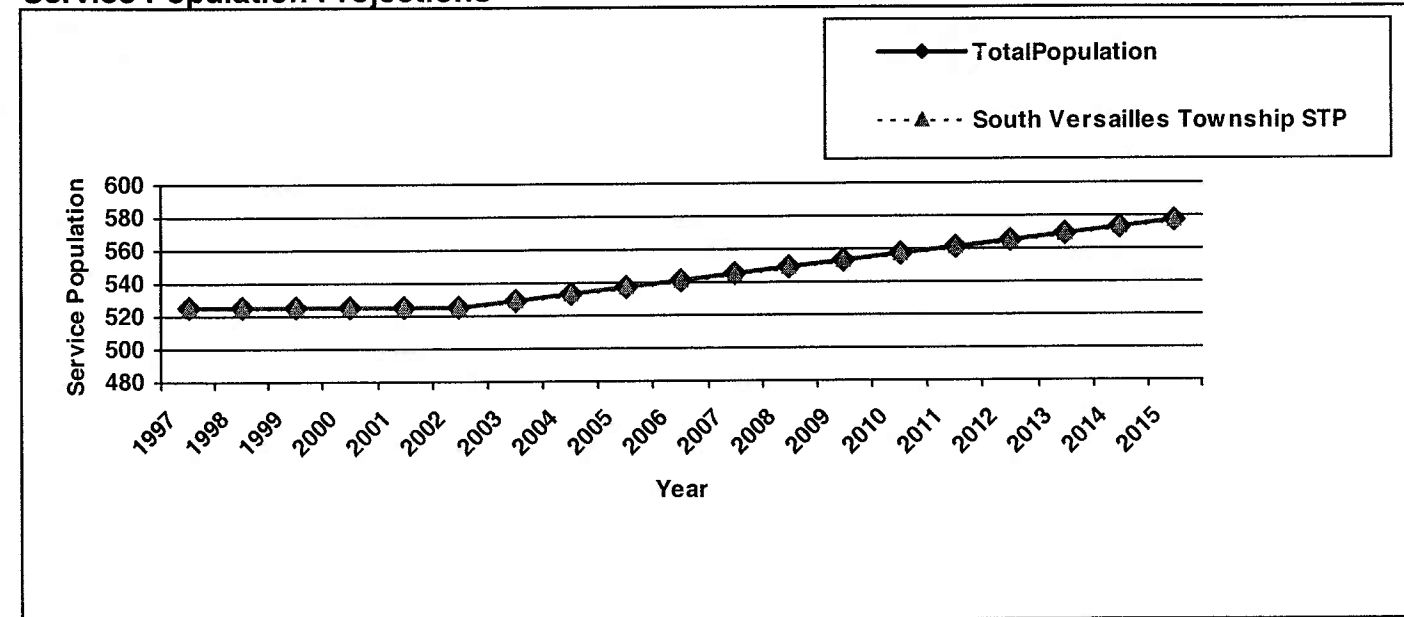
Service Area Summary

POTW Name	1997 Service Population	2015 Service Population	Municipality	Type Of Sewer System
South Versailles Township STP	525	578	South Versailles Township	Separate

Treatment Process Summary

POTW Name	Equalization	Screening	Comminution	Grit Removal	Prechlorination	Primary Treatment	Activated Sludge	Extended Aeration	Contact Aeration	Trickling Filter	Disinfection	Dechlorination	Filtration	Reaeration	Thickening	Aerobic Digestion	Anaerobic Digestion	Lime Stabilization	Composting	Thermal Processing	Dewatering	Land Application	Landfill	Incineration	Haul to other STP	Odor Control
South Versailles Township STP		■					■			■																■

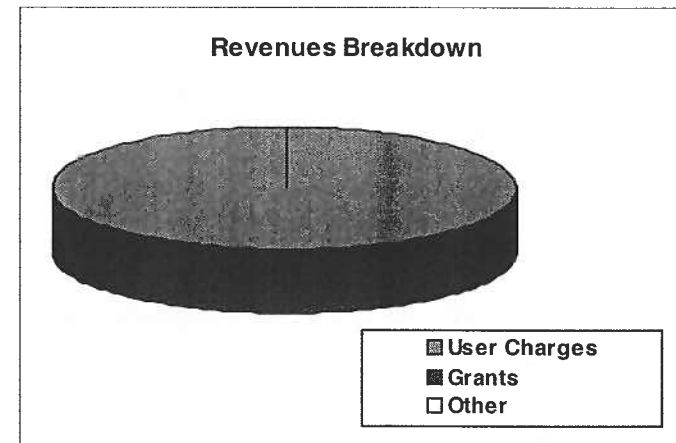
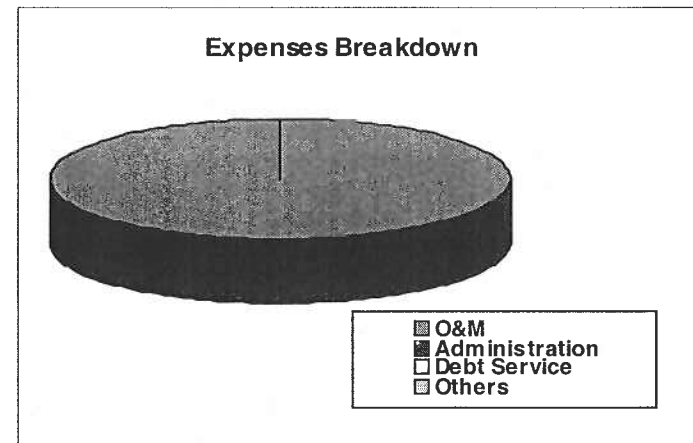
Service Population Projections



South Versailles Township

Sewer Use Ordinances

Municipality	Corrective Action Plan	Grease Trap Requirement	Industrial Pretreatment Program	Illicit Connection Inspection At Sale	Surcharge
South Versailles Township	No	No, only have residential customers	No, only have domestic waste	No	



Financial Information

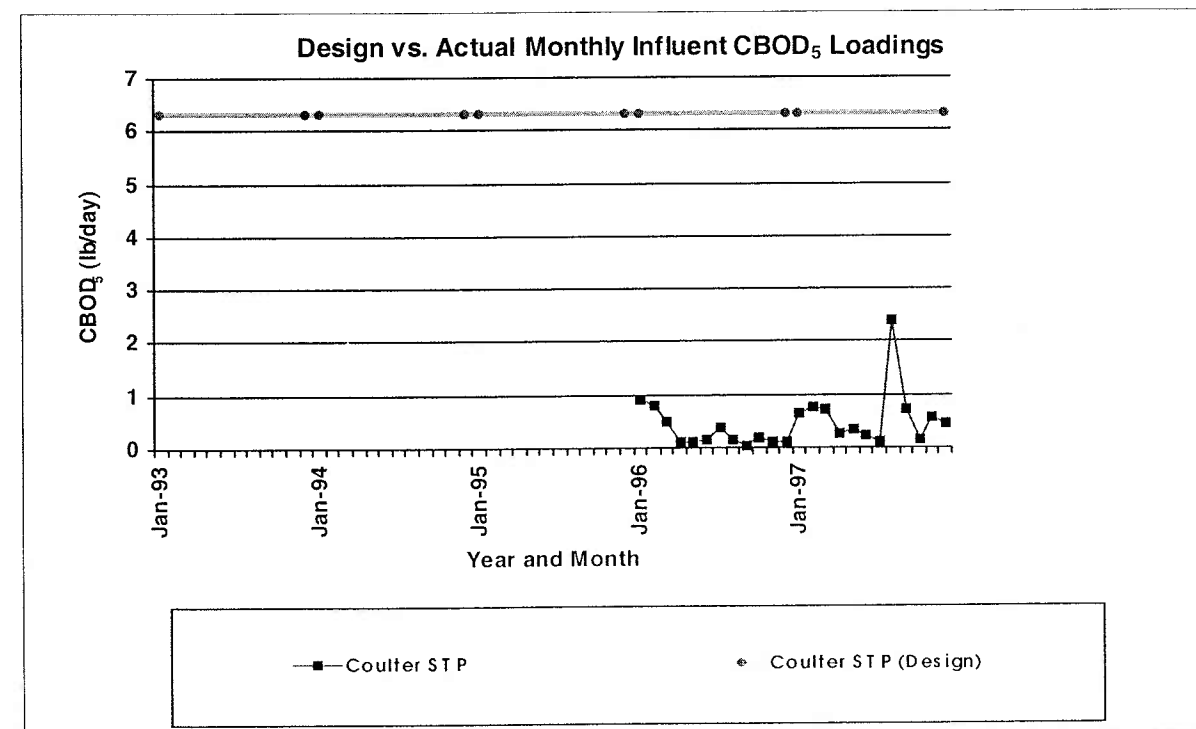
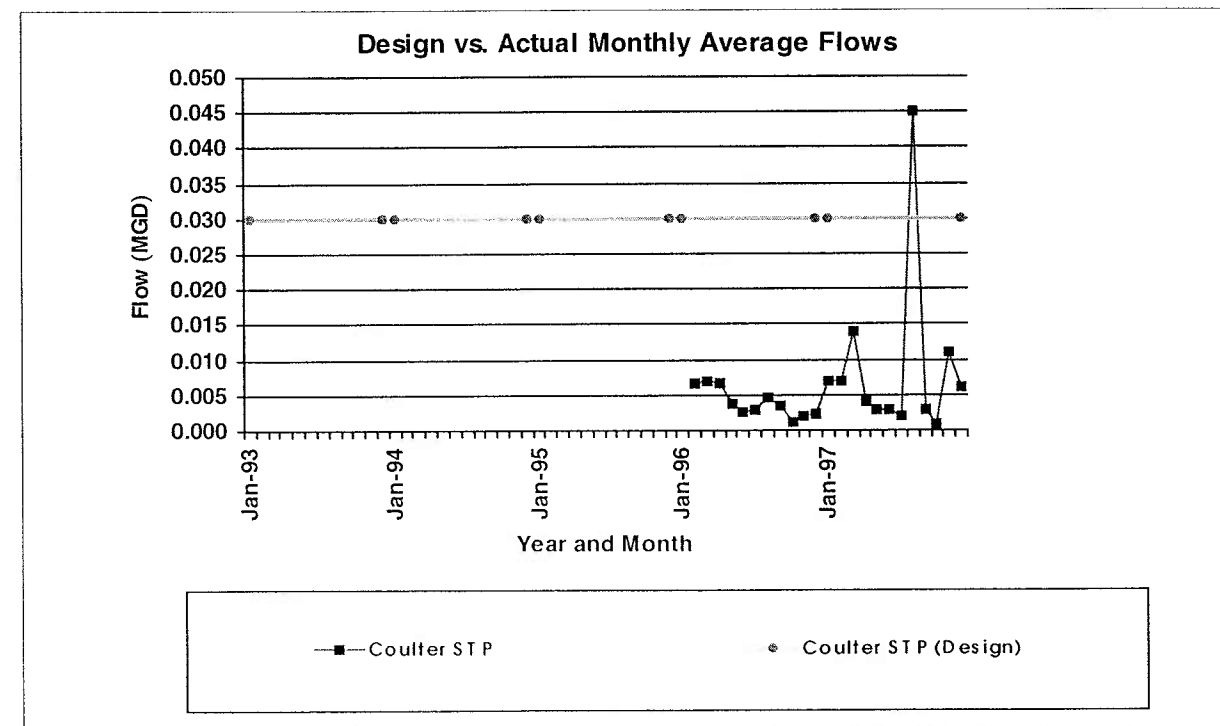
REVENUES		
User Charges:		\$18,858
Grants:		\$0
Other:		\$0
Total Revenues		\$18,858
EXPENSES		
Operations and Maintenance		\$14,440
Administration:		\$0
Debt Service:		\$0
Other:		\$0
Total Expenses		\$14,440
Surplus(Deficit):		\$4,418
Debt Service Coverage Ratio		
	YEAR:	1998
Information Source:		Actual/ Budgeted
Revenues	South Versailles Budget '98	Budgeted
Expenses	South Versailles Budget '98	Budgeted

South Versailles Township

1997 Plant Performance

Coulter STP	Average Daily Flow (mgd)			CBOD ₅ (lb/Day)			TSS (lb/Day) Effluent			Effluent Coliform (Col/100ml)		
	Monthly	Summer	Winter	Average Effluent	Summer	Winter	Average	Summer	Winter	Average Daily	Summer	Winter
January	0.007			0.67			0.38			2.8		
February	0.007			0.76			0.72			0.8		
March	0.014			0.74			0.76			1.4		
April	0.004			0.27			0.09			1.6		
May	0.003			0.35			0.21			2.4		
June	0.003			0.24			0.33			1.8		
July	0.002			0.11			0.11			1.5		
August	0.045			2.40			1.35			109.5		
September	0.003			0.72			0.34			1.0		
October	0.001			0.13			0.07			55.0		
November	0.011			0.59			0.54			39.8		
December	0.006			0.47			0.29			85.8		
Maximum	0.045	0.03	0.03	2.40	6	6	1.35	8	8	109.5	200	2000
Max as % Limit	148%			38%			18%			55%		
Average	0.009			0.62			0.43			25.3		
3 Month > Limit?	No											

Plant Loading Summary



South Versailles Township

Collection System Facilities

TREATMENT PLANT	Design Capacity (MGD)	Biological Treatment	Owner	Operator
South Versailles Township STP	0.03	Extended Aeration	SVT	SVT
<u>Pump Station</u>	<u>Peak Capacity</u>	<u>Avg Daily Flow</u>	<u>Owner</u>	<u>Operator</u>
None				
<u>Equalization Basin</u>	<u>Capacity</u>	<u>Location</u>	<u>Owner</u>	<u>Operator</u>
None				

Sewer Maintenance Information

<i>Service Community</i>	<i>Maintained By:</i>	<i>Mainten. Done:</i>	<i>Equipment Source</i>	<i>I/I Removal</i>	<i>I/I Flow Monitor</i>
South Versailles Township	Township, Contractor	As-needed	COG, White Oak Borough	<input type="checkbox"/>	<input type="checkbox"/>

South Versailles Township

Intermunicipal Agreements

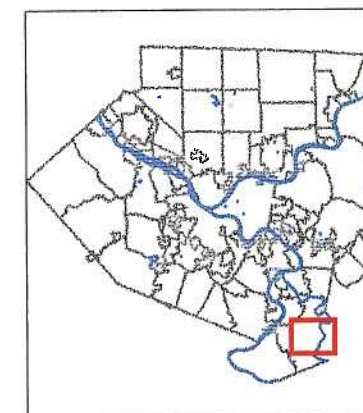
Agreement With	Date Enacted	Agreement Description	Expiration Date	Flow Limits (mgd)	Rate and Surcharge Provisions	Sampling Provisions	Flow Monitoring Provisions	Dispute Resol. Procedure	Basis of Cost Allocation
North Huntingdon Township	Agreement not available	Informal "verbal" agreement with North Huntingdon for sewage service for one home in South Versailles							

South Versailles Township

Water Pollution Control Facility Service Area and Collection System

Allegheny County
Department of Economic Development

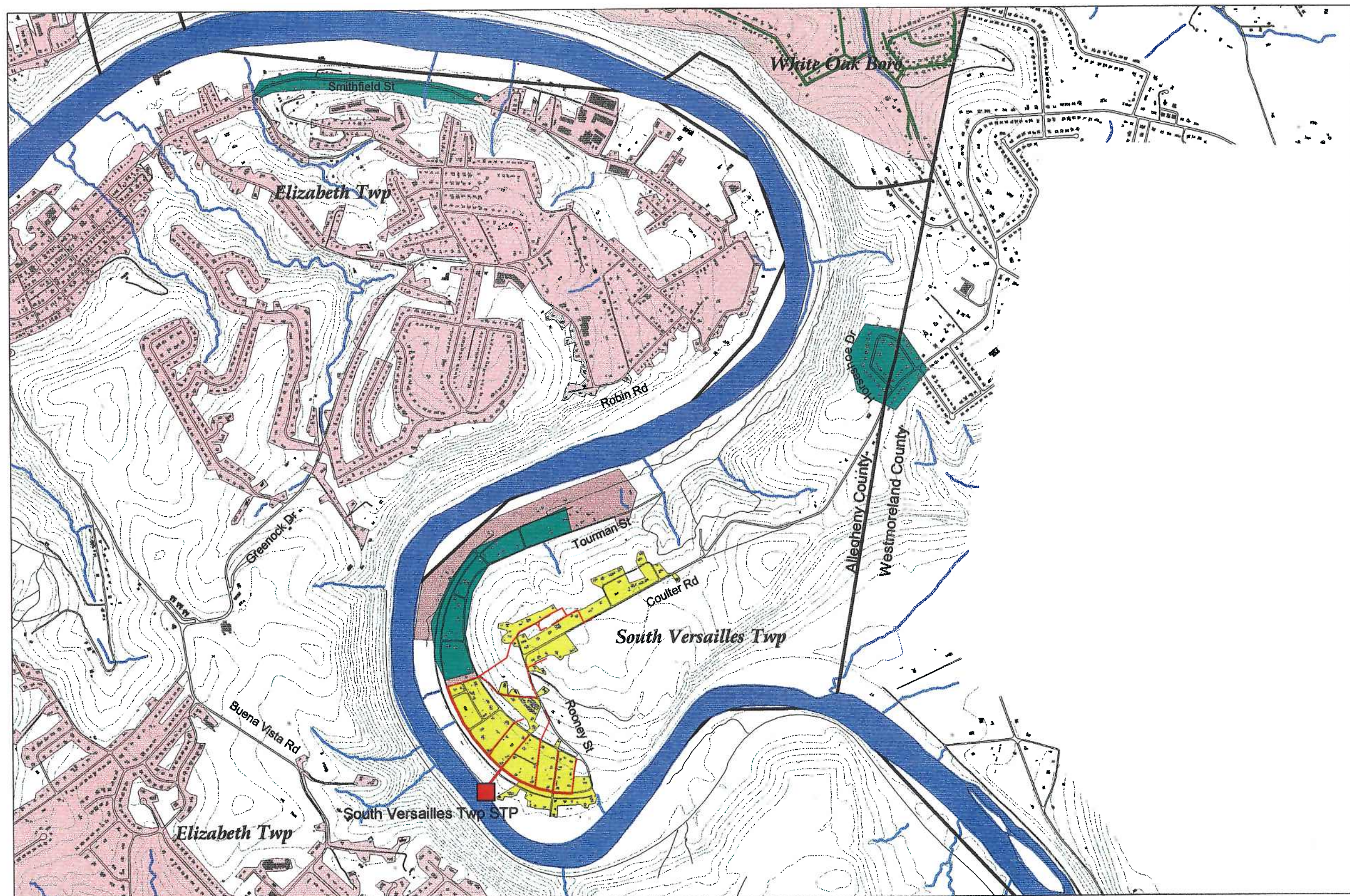
Allegheny County, PA



400 0 400 800 Feet

- Treatment Plants
 - Existing
 - Pump Station
- Municipal Boundary
- Major Road
- Contour
- Hydrologic Feature
- Building
- Collection System
 - Separate
 - On - Lot Problem Area
- Pipe Type
 - Collector
 - Force Main
 - Trunk
- Neighboring Service Area
- Neighboring Collection System

Not Field Verified
Source: Gateway Engineers Phase III Sanitary Sewer Construction Plan



Upper Allegheny Joint Sanitary Authority

The Upper Allegheny Joint Sanitary Authority (UAJSA) is a wastewater treatment and conveyance authority serving 32,000 people in six communities in northeastern Allegheny County and southern Butler County. The UAJSA owns and maintains the wastewater treatment plant, the Bull Creek Pump Station, interceptor, CSO diversion structures and outfalls. The UAJSA's 6.0-mgd wastewater treatment plant is located in East Deer Township, and serves all of Brackenridge, Tarentum, and Harrison Township and portions of East Deer, Fawn and Buffalo Townships. With the exception of the newly constructed sewers in Fawn and Buffalo Townships, combined sewers serve the majority of the service area. Frazier Township is tributary to the UAJSA's service area however; these residents utilize on-lot septic systems.

The UAJSA's activated sludge facility provides secondary treatment and discharges to the Allegheny River, a warm water fishery. It is permitted for an average daily flow of 6.0 mgd and an organic load of 8,340 lb CBOD₅/day. The average monthly flow to the plant was 5.0 mgd and the average monthly organic loading was 2,799 lb CBOD₅/day in 1997. In four of the last five years (1993 to 1997), the maximum consecutive three-month average flow exceeded the plant's permitted capacity. The UAJSA reports that the plant can handle flows as high as 21 mgd and still meet the effluent water quality standards. The UAJSA may re-rate the plant for higher flows. Organic loadings have remained constant with an average of 3,368 lb CBOD₅/day during this time period. Organic loadings are less than half the design loading of 8,340 lb CBOD₅/day. The UAJSA adopted pretreatment regulations in 1991 as it receives wastes from seven industrial customers.

The Authority owns and operates the Bull Creek Pump Station, which has a maximum capacity of approximately 15 mgd. The Bull Creek Pump Station receives excessive wet weather flows as the tributary sewers are primarily combined. A metered diversion chamber monitors total flows to the system by adding bypass flow to plant flows.

UAJSA implemented a Corrective Action Plan in 1989 due to hydraulic overloading along the main interceptor. There is an interceptor relief along the main interceptor and when wet weather flows exceed 9.15 mgd, controlled diversion occurs. Flow monitoring conducted on the Little Bull Creek interceptor concluded that average daily flows did not exceed 25 percent of the available capacity on this interceptor. There are 19 operational CSO outfalls (not including the main plant outfall) and one interceptor relief, at the Bull Creek Pump Station, on the system. The UAJSA is responsible for the CSOs and their permit contains language to increase pump station capacity to fulfill Minimum Control No. 4 of the National CSO Policy, "Maximum Flow to the POTW".

In 1986, UAJSA completed an USEPA-funded sewer rehabilitation program, and now, performs routine maintenance on their interceptor and combined sewer overflow chambers. The UAJSA work force includes five laborers and two supervisors, including a chemist. The Authority owns a sewer jet truck and rodder for sewer cleaning and maintenance.

The municipalities own and maintain their collection systems and other pump stations. Harrison Township is conducting smoke and dye testing, and television inspections to identify illegal connections. The intermunicipal agreements with the newly contracted municipalities of Fawn and Buffalo Townships, limit infiltration/inflow to 200 gallons per inch of pipe diameter per mile per day.

The UAJSA's service area population of approximately 32,000 is projected to increase to approximately 35,000 by 2015. Based on the 2015 population increase, the hydraulic and organic loadings to the treatment plant are expected to increase by nine percent. The average daily hydraulic loading is projected to increase to approximately 5.5 mgd, and the organic loading is projected to increase to approximately 3,100 lb CBOD₅/day. The hydraulic capacity of the plant appears to be adequate for projected average daily flow conditions in 2015. The organic loading capacity of the plant appears to be adequate for projected daily organic loading conditions in 2015.

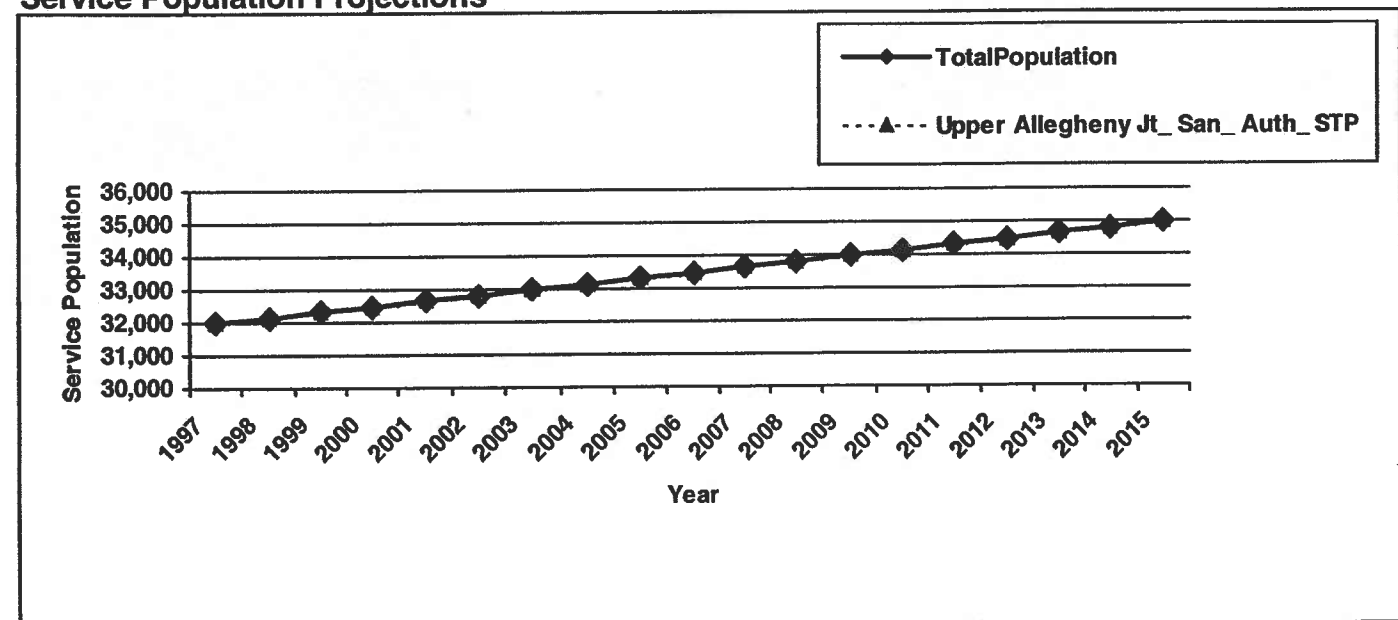
Service Area Summary

POTW Name	1997 Service Population	2015 Service Population	Municipality	Type Of Sewer System
Upper Allegheny Jt. San. Auth. STP	32000	34984	Brackenridge Borough	Combined
			Buffalo Township	Separate
			East Deer Township	Combined
			Fawn Township	Separate
			Harrison Township	Combined
			Tarentum Borough	Combined

Treatment Process Summary

POTW Name	Equalization	Screening	Comminution	Grit Removal	Prechlorination	Primary Treatment	Activated Sludge	Extended Aeration	Contact Stabilization	Trickling Filter	Disinfection	Dechlorination	Filtration	Reaeration	Thickening	Aerobic Digestion	Anaerobic Digestion	Line Stabilization	Composting	Thermal Processing	Dewatering	Land Application	Landfill	Incineration	Haul to other STP	Odor Control	
Upper Allegheny Jt. San. Auth. STP		■					■																				

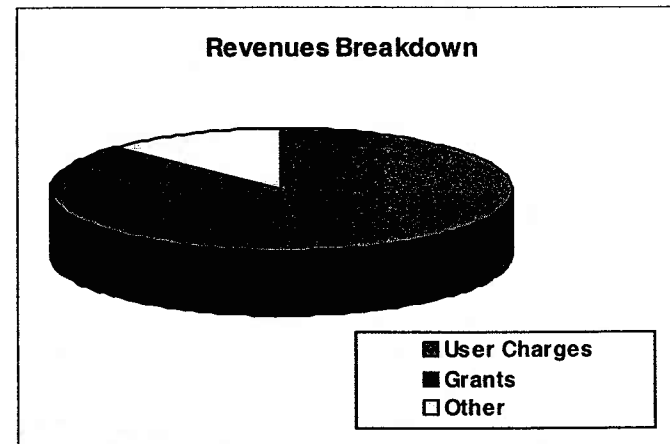
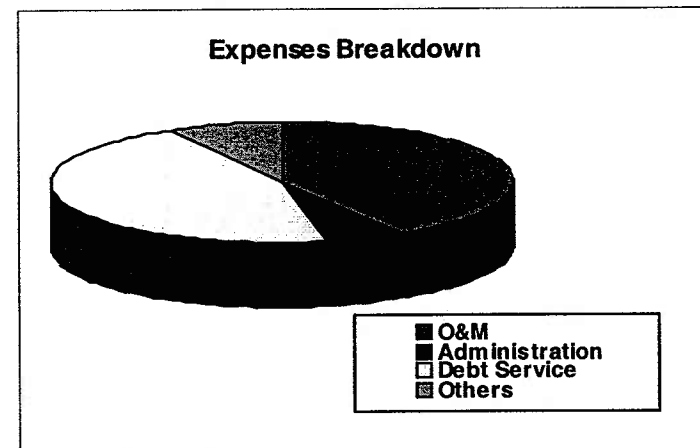
Service Population Projections



Upper Allegheny Joint Sanitary Authority

Sewer Use Ordinances

Municipality	Corrective Action Plan	Grease Trap Requirement	Industrial Pretreatment Program	Illicit Connection Inspection At Sale	Surcharge
Brackenridge Borough	No	Yes	UAJSA	No	
Buffalo Township	No	Yes	UAJSA	No	Yes
East Deer Township	No	Yes	UAJSA	No	
Fawn Township	No	Yes	UAJSA	No	Yes
Harrison Township	No	Yes	UAJSA	No	
Tarentum Borough	No	Yes	UAJSA	No	



Financial Information

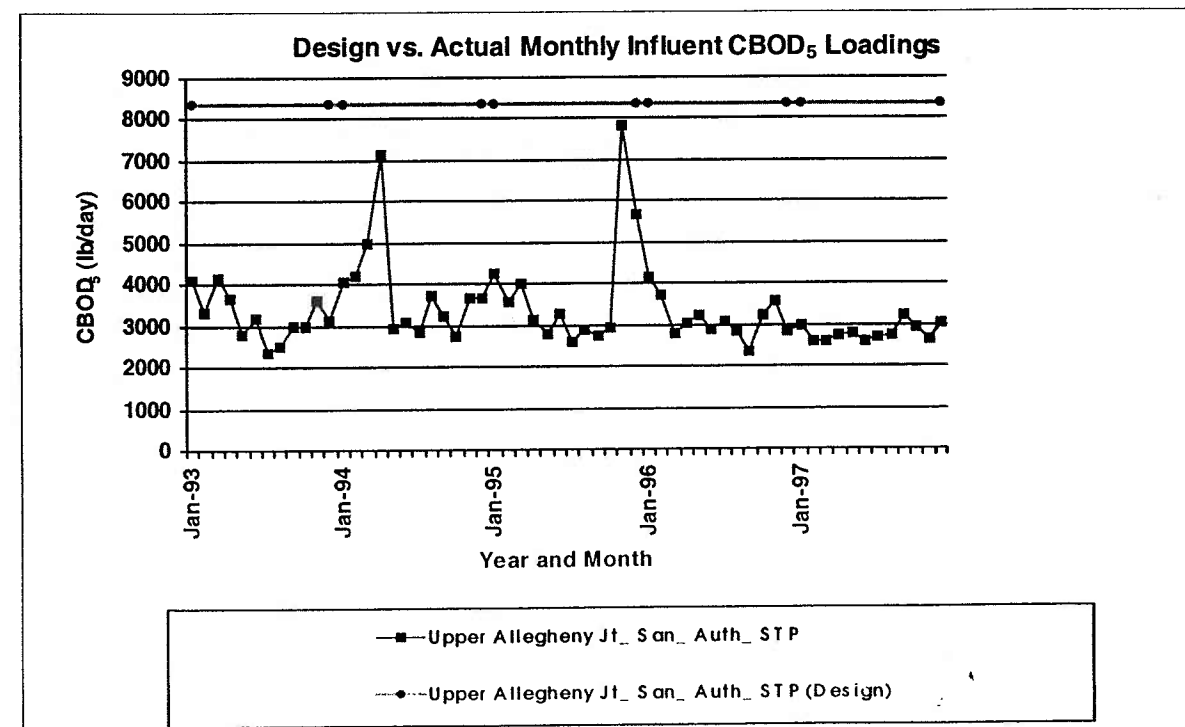
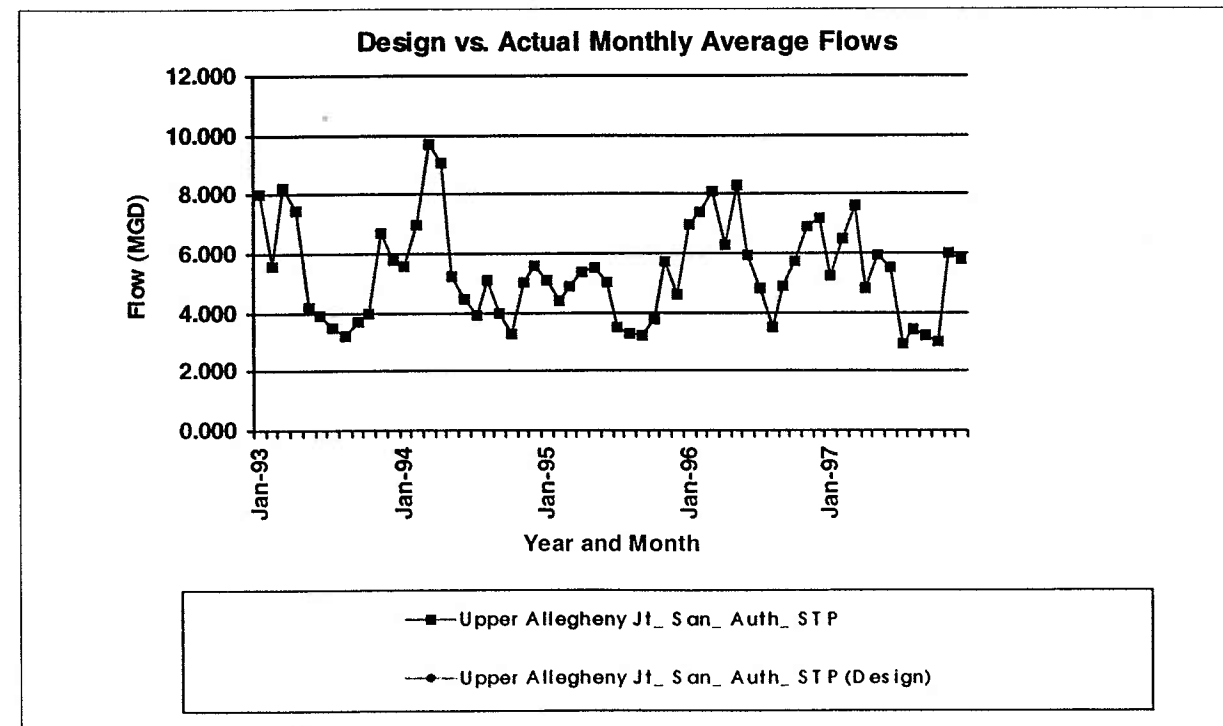
REVENUES		
User Charges:		\$2,482,300
Grants:		\$0
Other:		\$372,500
Total Revenues		\$2,854,800
EXPENSES		
Operations and Maintenance		\$1,145,200
Administration:		\$153,400
Debt Service:		\$1,252,793
Other:		\$221,300
Total Expenses		\$2,772,693
Surplus(Deficit):		\$82,107
Debt Service Coverage Ratio		1.07
Information Source:	YEAR: 1998	Actual/Budgeted
Revenues	UAJSA Annual Report (Gibson-Thomas Eng.)	Budgeted
Expenses	UAJSA Annual Report (Gibson-Thomas Eng.)	Budgeted

Upper Allegheny Joint Sanitary Authority

1997 Plant Performance

Upper Allegheny STP	Average Daily Flow (mgd)			CBOD ₅ (lb/Day)			Permit Limits			TSS (lb/Day) Effluent	Permit Limits			Effluent Coliform (Col./100ml)	Permit Limits		
	Monthly	Summer	Winter	Monthly Influent	Average Effluent	% Removal	Summer	Winter	Average		Summer	Winter	Average Daily		Summer	Winter	
January	5.2			3004	93.3	97%			141			144					
February	6.5			2598	199.8	92%			325			239					
March	7.6			2595	235.6	91%			551			291					
April	4.8			2755	177.2	94%			365			243					
May	5.9			2791	137.1	95%			194			165					
June	5.5			2597	155.7	94%			423			248	E				
July	2.9			2676	46.2	98%			85			177					
August	3.4			2736	65.3	98%			99			122					
September	3.2			3222	63.7	98%			116			30					
October	3.0			2915	69.7	98%			64			67					
November	6.0			2659	136.9	95%			394			91					
December	5.8			3038	143.8	95%			218			284					
Maximum	7.6	6.0	6.0		235.6		1250	1250	551	1500	1500	291	200	2000			
Max as % Limit	127%				19%				37%			145%					
Average	5.0				127.0				247.9			175					
3 Month > Limit?	Yes																

Plant Loading Summary



Upper Allegheny Joint Sanitary Authority

Collection System Facilities

TREATMENT PLANT	Design Capacity (MGD)	Biological Treatment	Owner	Operator
Upper Allegheny Jt. San. Auth. STP	6	Activated Sludge	UAJSA	UAJSA
<u>Pump Station</u>	<u>Peak Capacity</u>	<u>Avg Daily Flow</u>	<u>Owner</u>	<u>Operator</u>
Bull Run	13 mgd		UAJSA	UAJSA
Freeport Rd.	200,000 gpd		Harrison Twp.	Harrison Twp.
Murray Hill Rd.			East Deer Twp.	East Deer Twp.
Oak Manor Dr. Ejector	72,000 gpd		Harrison Twp.	Harrison Twp.
<u>Equalization Basin</u>	<u>Capacity</u>	<u>Location</u>	<u>Owner</u>	<u>Operator</u>
None				

Sewer Maintenance Information

<i>Service Community</i>	<i>Maintained By:</i>	<i>Mainten. Done:</i>	<i>Equipment Source</i>	<i>I/I Removal</i>	<i>I/I Flow Monitor</i>
Brackenridge Borough	Brackenridge Borough	Routine	Public Works, UAJSA	<input type="checkbox"/>	<input type="checkbox"/>
Buffalo Township	Buffalo Township	Routine	New Sewers	<input type="checkbox"/>	<input type="checkbox"/>
East Deer Township	East Deer Township	Routine	No Data	<input type="checkbox"/>	<input type="checkbox"/>
Fawn Township	Fawn Township	Routine	New Sewers	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Harrison Township	Harrison Township	Routine	Public Works	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Tarentum Borough	Tarentum Borough	Routine	UAJSA jet truck, rodder	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Upper Allegheny Joint Sanitary Authority

Intermunicipal Agreements

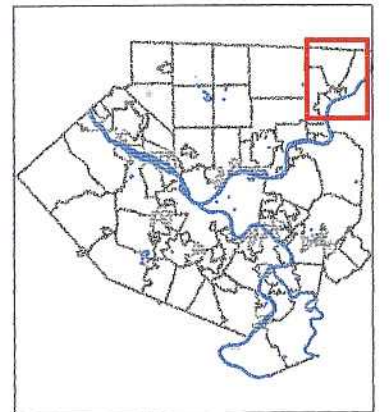
Agreement With	Date Enacted	Agreement Description	Expiration Date	Flow Limits (mgd)	Rate and Surcharge Provisions	Sampling Provisions	Flow Monitoring Provisions	Dispute Resol. Procedure	Basis of Cost Allocation
Brackenridge, Borough of	05/14/85	Amendment No. 1 to service agreement among UAJSA, Boro of Brackenridge, Boro of Tarentum, Twp of East Deer and Twp of Harrison. The definition of Indenture is amended in Article I & IV of Service Agreement is amended							
Buffalo Township	07/31/89	Buffalo Auth. becomes a contract customer of UAJSA and Harrison Twp. by connection of Little Bull Creek drainage area (specifically, Oberg area & Ekastown Rd area) to Harrison Interceptor line and then, by use of Harrison line, to UAJSA sewer system	As long as the Buffalo Township Collection System is connected to both the Harrison Interceptor Line and the UAJSA Sewer System	Yes, but are not violated as sewers are new		No, except for some industrial pretreatment		There is a procedure, but they haven't had to use it	Uniform rates based on metered water consumption. Buffalo Twp. Pay \$1.50 / month per EDU surcharge for infrastructure services. Surcharge for investment of incorporating municipalities.
East Deer, Township of	05/14/85	Amendment No. 1 to service agreement among UAJSA, Boro of Brackenridge, Boro of Tarentum, Twp of East Deer, and Twp of Harrison. The definition of Indenture is amended in Article I & IV of Service Agreement is amended							
Fawn Township	02/11/97	Agreement establ. FTSA as contract customer of UAJSA due to connection of Bull Cr. Drainage area. Max. infiltration rate est. 200 gal/in of pipe diam/mi, per day. If infiltration > this, FTSA conducts SSES to find corrective action. Combined sewers prohibited.	As long as Fawn Township Collection System is connected to the UAJSA Sewer System	Yes, but not violated because sewers are new		No, except for some industrial pretreatment		There is a procedure, but they haven't had to use it	Uniform rates based on metered water consumption. Fawn Twp. \$1.50 / month per EDU surcharge for infrastructure services. Surcharge for investment of incorporating municipalities
Fawn Township Sanitary Authority	02/11/97	Agreement establ. FTSA as contract customer of UAJSA due to connection of Bull Cr. Drainage area. Max. infiltration rate est. 200 gal/in of pipe diam/mi, per day. If infiltration > this, FTSA conducts SSES to find corrective action. Combined sewers prohibited.	As long as Fawn Township Collection System is connected to the UAJSA Sewer System	Yes, but not violated because sewers are new		No, except for some industrial pretreatment		There is a procedure, but they haven't had to use it	Uniform rates based on metered water consumption. Fawn Twp. \$1.50 / month per EDU surcharge for infrastructure services. Surcharge for investment of incorporating municipalities
Harrison Township	07/31/89	Buffalo Auth. becomes a contract customer of UAJSA and Harrison Twp. by connection of Little Bull Creek drainage area (specifically, Oberg area and Ekastown Rd area) to Harrison Interceptor line and then, by use of Harrison line, to UAJSA sewer system	As long as the Buffalo Township Collection System is connected to both the Harrison Interceptor Line and the UAJSA Sewer System	Yes, but are not violated as sewers are new		No, except for some industrial pretreatment		There is a procedure, but they haven't had to use it	Uniform rates based on metered water consumption. Buffalo Twp. Pay \$1.50 / month per EDU surcharge for infrastructure services. Surcharge for investment of incorporating municipalities.
Harrison Township	05/14/85	Amendment No. 1 to service agreement among UAJSA, Boro of Brackenridge, Boro of Tarentum, Twp of East Deer and Twp of Harrison. The definition of Indenture is amended in Article I & IV of Service Agreement is amended							
Harrison Twp., Buffalo Twp., Municipal Authority of Buffalo Twp.,	12/15/89	Sewer Service Agreement for connection of the Buffalo Twp. interceptor to Harrison Interceptor and connection of the Buffalo collector sewers and Fawn collector sewers. Agreement also provides for acceptance of sewage by the UAJSA and Harrison Twp. Systems.		Buffalo Authority and Fawn Twp. limited to 486,000 gpd from Ekastown; 112,600 gpd from Oberg.		As-needed by UAJSA and Harrison Twp.	Yes	Court of Common Pleas	
Municipal Authority of Buffalo Township	07/31/89	Buffalo Auth. becomes a contract customer of UAJSA and Harrison Twp. by connection of Little Bull Creek drainage area (specifically, Oberg area and Ekastown Rd area) to Harrison Interceptor line and then, by use of Harrison line, to UAJSA sewer system	As long as the Buffalo Township Collection System is connected to both the Harrison Interceptor Line and the UAJSA Sewer System	Yes, but are not violated as sewers are new		No, except for some industrial pretreatment		There is a procedure, but they haven't had to use it	Uniform rates based on metered water consumption. Buffalo Twp. Pay \$1.50 / month per EDU surcharge for infrastructure services. Surcharge for investment of incorporating municipalities.
Tarentum, Borough of	05/14/85	Amendment No. 1 to service agreement among UAJSA, Boro of Brackenridge, Boro of Tarentum, Twp of East Deer and Twp of Harrison. The definition of Indenture is amended in Article I & IV of Service Agreement is amended							

Upper Allegheny Joint Sanitary Authority

Water Pollution Control Facility
Service Area and Collection
System

Allegheny County
Department of Economic Development

Allegheny County, PA

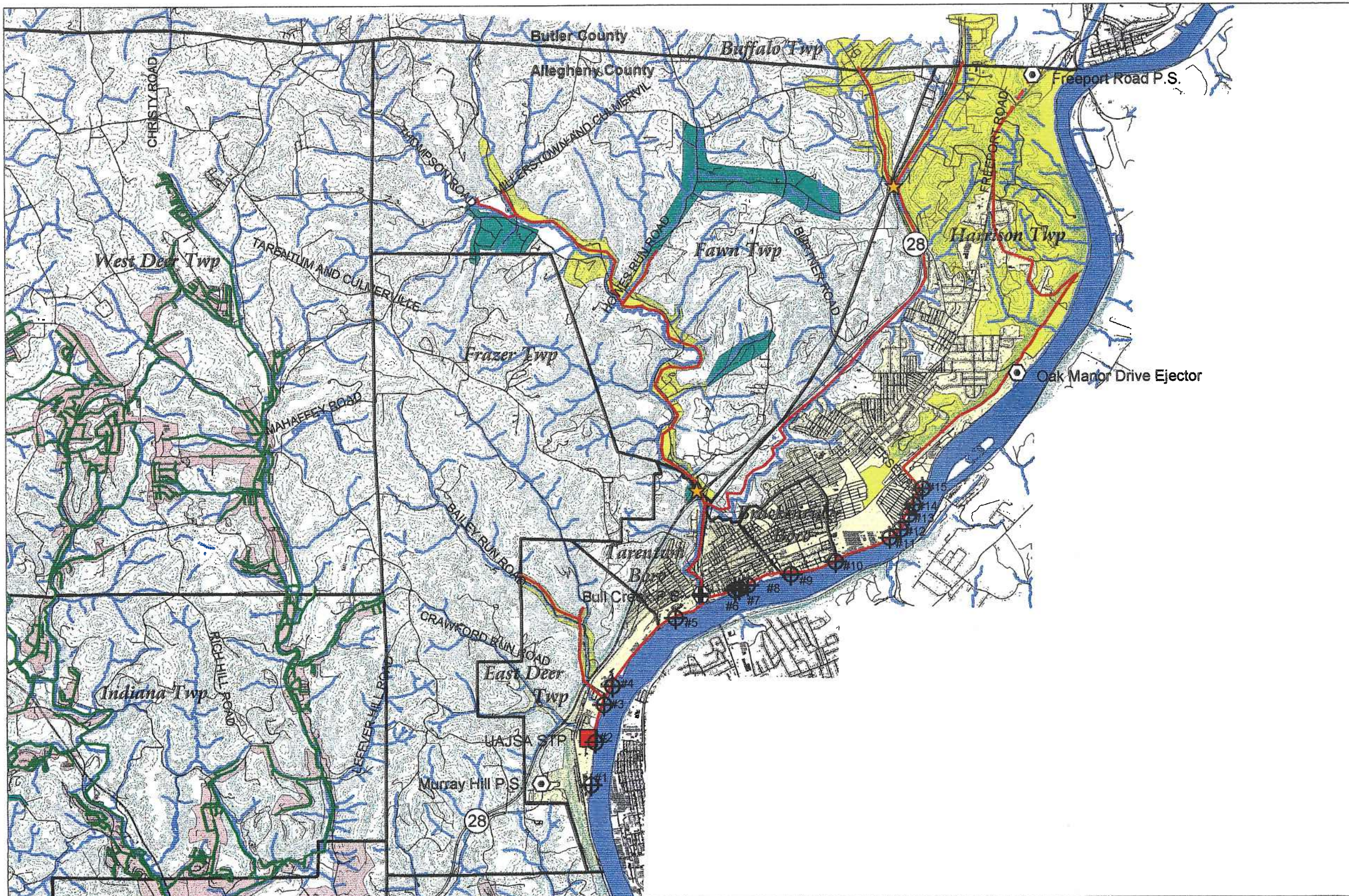


1000 0 1000 2000 Feet

- Public Treatment Facility
- Existing STP
- Pump Station
- Combined Sewer Outfall
- Interceptor Relief Structure
- Intermunicipal Connection
- Municipal Boundary
- Major Road
- Contour
- Hydrologic Feature
- Building
- Collection System
- Combined
- On - Lot Problem Area
- Upper Allegheny Joint Sanitary Authority Trunk Line
- Neighboring Service Area
- Neighboring Collection System

Not Field Verified

Source: NIRA Consulting Engineers, Inc.
Fawn Twp. Interceptor Map



West Elizabeth Sanitary Authority

The West Elizabeth Sanitary Authority (WESA) is a treatment and collection authority serving approximately 4,957 people in West Elizabeth Borough and part of Jefferson Hills Borough. The West Elizabeth Wastewater Treatment Plant (WWTP) is owned and operated by WESA. Union Township is investigating the feasibility of providing public sewage service to the Elrama area. If the Elrama area of Union Township is sewered, the West Elizabeth WWTP will provide treatment service. The plant is a 0.5-mgd extended aeration system that discharges to the Monongahela River. In addition to residential customers, the West Elizabeth WWTP services several large industrial customers. The average monthly flow in 1997 was 0.408 mgd and the average monthly organic loading was 130 lb CBOD₅/day. The five-year annual average organic loading for the plant was 370 lb CBOD₅/day.

The West Elizabeth WWTP was constructed in 1972 with a design capacity of 0.15 mgd. In 1978, the plant was expanded to the current treatment capacity of 0.5 mgd. The permitted organic loading is 850 lb CBOD₅/day. The WESA is currently under agreement negotiations with Union Township, Jefferson Hills Borough, and Hercules Incorporated to expand the plant to 0.75 mgd. The plant expansion is necessary to accommodate the anticipated flows from the Elrama area of Union Township, population growth in the Jefferson Hills Borough portion of the service area, and increased flow from Hercules Inc.

The sewers tributary to the West Elizabeth WWTP serve all of West Elizabeth Borough and part of Jefferson Hills Borough. The WESA owns and maintains the collection sewers in West Elizabeth Borough, which is currently part combined and part separate; all of West Elizabeth is sewered. There are two pump stations located in West Elizabeth Borough. The Ferry Street Pump Station serves West Elizabeth Borough, and the Fourth Street Pump Station serves Jefferson Hills Borough. The Fourth Street Pump Station will be used to convey sewage from the Elrama area. This pump station is adequately sized to accommodate the future hydraulic loading from Jefferson Hills Borough and Elrama without expansion.

Currently, there are six permitted CSO outfalls. The WESA is proposing a sewer separation project in the lower end of West Elizabeth Borough. The U.S. Army Corps of Engineers is funding the project, in connection with a program to eliminate Lock and Dam #2 on the Monongahela River and raise the river elevations at West Elizabeth by approximately five feet. When the sewer separation project is complete, the current overflow lines will be utilized for stormwater only, with the exception of the Ballfield CSO.

Jefferson Hills Borough owns and operates its own collection system, which is a separate sanitary system. In Jefferson, excessive flows are experienced. Jefferson Hills Borough has begun to monitor flows in the area that discharges to the sewer system. If infiltration is controlled, no section of the sewer system will exceed capacity. The Borough prepared and awarded a contract to complete a sanitary sewer reconstruction project along Walton Road. In addition, Jefferson has undertaken an extensive sewer grouting and sliplining program to eliminate I/I.

In West Elizabeth, two plant operators maintain the sewers and the pumping stations. The Steel Valley Council of Governments (SVCOG) or contractors is hired to clean sewers when needed. In Jefferson Hills Borough, road crew personnel are used for maintenance. Jefferson Hills Borough conducts routine inspection of manholes and sewer lines. Jefferson Hills Borough is part of the South Hills Area Council of Governments (SHACOG) and utilizes the SHACOG sewer vactor and camera truck. In 1997, Jefferson completed the internal television inspections of all sanitary sewer lines in the watershed.

The West Elizabeth Sanitary Authority service area population of approximately 4,957 is projected to increase to approximately 7,400 by 2015. Based on the 2015 population increase, the hydraulic and organic loading to the treatment plant are expected to increase by 49 percent. The hydraulic loading is projected to increase to approximately 0.61 mgd, and the organic loading is projected to increase to approximately 550 lb CBOD₅/day (based on the five-year annual organic loading average). The hydraulic and organic loading capacities of the plant appear to be adequate for projected average daily flow and loading conditions in 2015 (assuming the plant is re-rated to a design capacity of 0.75 mgd).

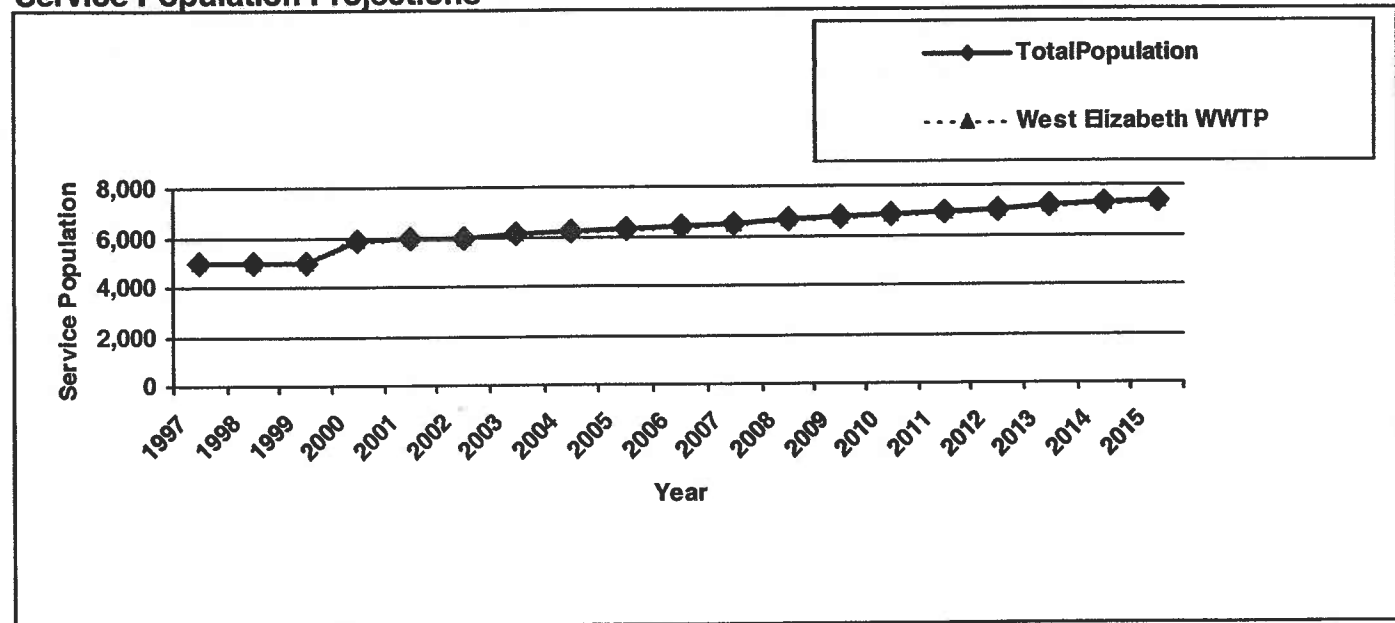
Service Area Summary

POTW Name	1997 Service Population	2015 Service Population	Municipality	Type Of Sewer System
West Elizabeth WWTP	4957	7374	Jefferson Hills Borough	Separate
			West Elizabeth Borough	Combined / Separate

Treatment Process Summary

POTW Name	Equalization	Screening	Comminution	Grit Removal	Prechlorination	Primary Treatment	Activated Sludge	Extended Aeration	Contact Aeration	Trickling Filter	Disinfection	Decoloration	Filtration	Regeneration	Thickening	Aerobic Digestion	Anaerobic Digestion	Line Stabilization	Composting	Thermal Processing	Dewatering	Land Application	Landfill	Incineration	Haul to other STP	Odor Control
West Elizabeth Borough STP																										

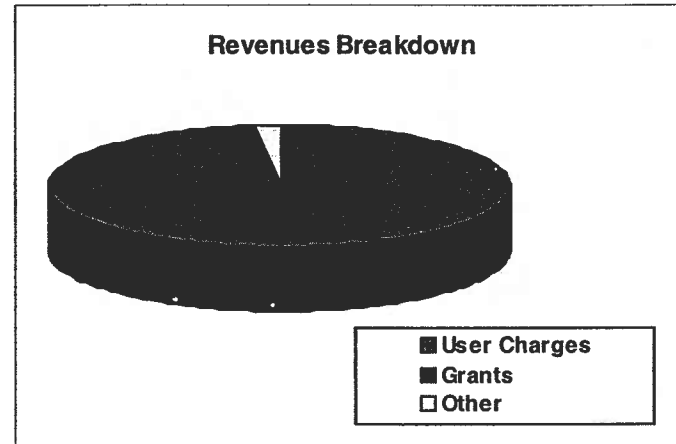
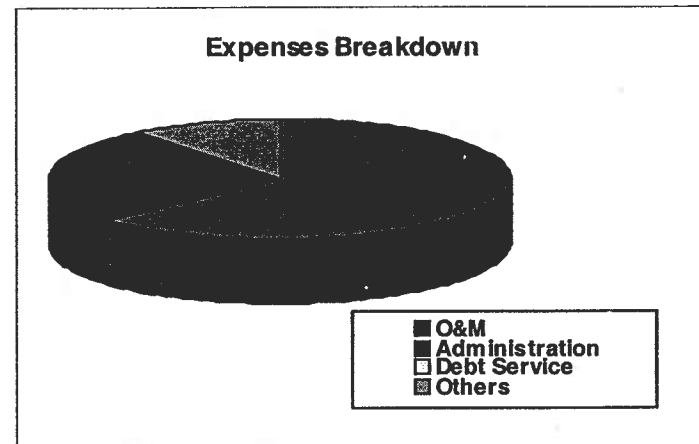
Service Population Projections



West Elizabeth Sanitary Authority

Sewer Use Ordinances

Municipality	Corrective Action Plan	Grease Trap Requirement	Industrial Pretreatment Program	Illicit Connection Inspection At Sale	Surcharge
Jefferson Hills Borough	Yes, for West Eliz. & Pleas. Hills STP service areas	Yes	Yes	Yes	No
West Elizabeth Borough	Previously	Yes, required at restaurants, per ACHD	Yes	No	No



Financial Information

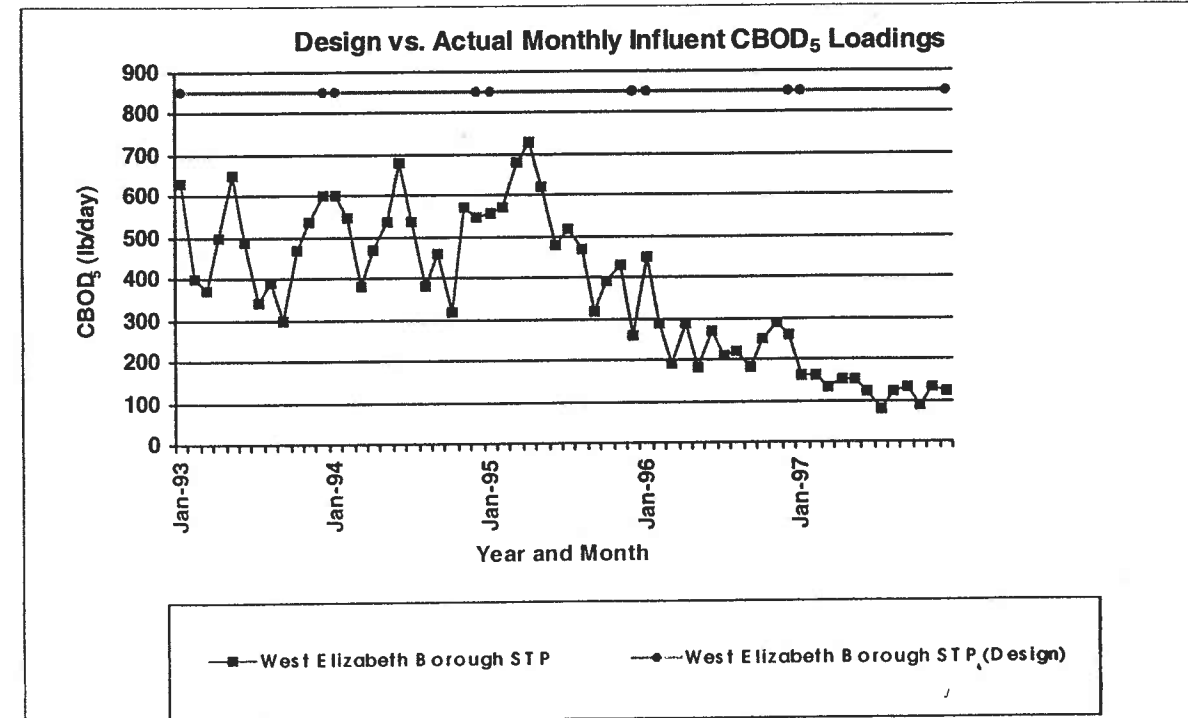
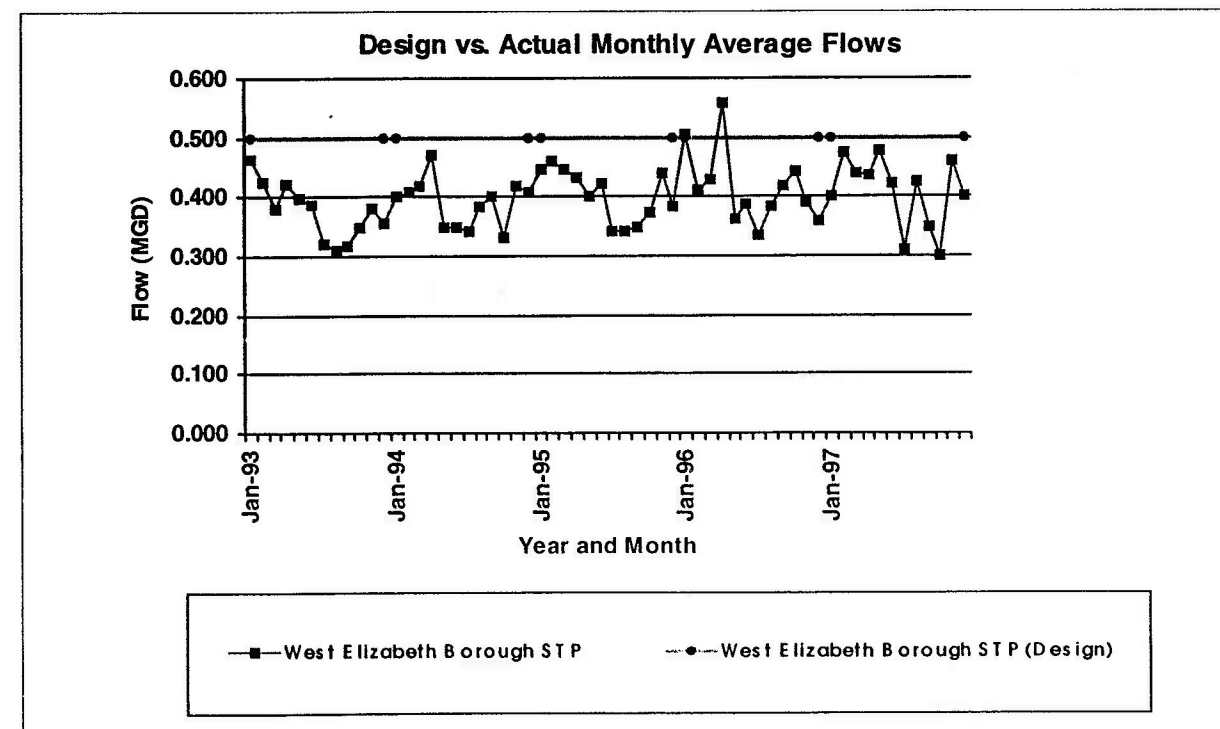
REVENUES		
User Charges:		\$247,000
Grants:		\$14,190
Other:		\$5,000
Total Revenues		\$266,190
EXPENSES		
Operations and Maintenance		\$168,200
Administration:		\$69,600
Debt Service:		\$0
Other:		\$27,798
Total Expenses		\$265,598
Surplus(Deficit):		\$592
Debt Service Coverage Ratio		
Information Source:	YEAR: 1998	Actual/Budgeted
Revenues	Estimated 1998 Revenues / Expenses	Budgeted
Expenses	Estimated 1998 Revenues / Expenses	Budgeted

West Elizabeth Sanitary Authority

1997 Plant Performance

West Elizabeth Borough STP	Average Daily Flow (mgd)			CBOD ₅ (lb/Day)			Permit Limits			TSS (lb/Day) Effluent			Effluent Coliform (Col./100ml)		
	Monthly	Summer	Winter	Monthly Influent	Average Effluent	% Removal	Summer	Winter	Average	Summer	Winter	Average Daily	Summer	Winter	
January	0.40			160	32	80%			41			315			
February	0.47			160	48	70%			40			773			
March	0.44			130	49	62%			32			1,250			
April	0.44			150	36	76%			26			1,110			
May	0.48			150	19	87%			21			404	E		
June	0.42			120	32	73%			21			47			
July	0.31			80	20	75%			22			24			
August	0.42			120	22	82%			37			198			
September	0.35			130	11	92%			36			786	E		
October	0.30			90	12	87%			34			51			
November	0.46			130	14	89%			17			7			
December	0.40			120	nd	nd			nd			nd			
Maximum	0.48	0.50	0.50		49		104	104	41	125	125	1,250	200	45000	
Max as % Limit	95%				47%				33%			625%			
Average	0.41				27				30			451			
3 Month > Limit?	No														

Plant Loading Summary



West Elizabeth Sanitary Authority

Collection System Facilities

TREATMENT PLANT	Design Capacity (MGD)	Biological Treatment	Owner	Operator
West Elizabeth WWTP	0.5	Extended Aeration	WESA	WESA
<u>Pump Station</u>	<u>Peak Capacity</u>	<u>Avg Daily Flow</u>	<u>Owner</u>	<u>Operator</u>
Ferry St.	365 gpm	299 gpm max.	WESA	WESA
Fourth St.	730 gpm	585 gpm max.	WESA	WESA
<u>Equalization Basin</u>	<u>Capacity</u>	<u>Location</u>	<u>Owner</u>	<u>Operator</u>
None				

Sewer Maintenance Information

<i>Service Community</i>	<i>Maintained By:</i>	<i>Mainten. Done:</i>	<i>Equipment Source</i>	<i>I/I Removal</i>	<i>I/I Flow Monitor</i>
Jefferson Borough	Local Forces	Routine	COG	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
West Elizabeth Borough	Plant Operators, Contract	As-needed	Borough, COG	<input type="checkbox"/>	<input type="checkbox"/>

West Elizabeth Sanitary Authority

Intermunicipal Agreements

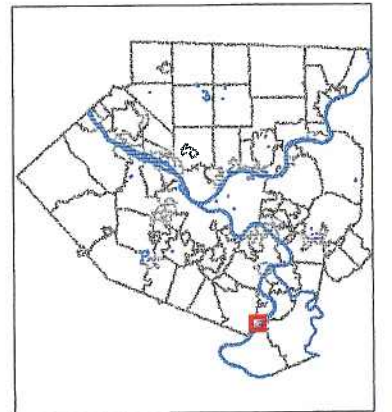
Agreement With	Date Enacted	Agreement Description	Expiration Date	Flow Limits (mgd)	Rate and Surcharge Provisions	Sampling Provisions	Flow Monitoring Provisions	Dispute Resol. Procedure	Basis of Cost Allocation
Jefferson Borough	09/11/74	The Authority agrees to receive and treat all sanitary sewage originating within the Jefferson Borough area of the watershed at its sewage treatment facility	Agreement is good for the life of the bond	500,000 gallons per day		None		Court	
Jefferson Borough	02/01/80	Amendment to original agreement because of proposed plant expansion to accommodate more flow from Jefferson Borough and Hercules Inc.		Maximum average daily flow of 80,000 gallons instead of 50,000 gallon					
West Elizabeth Borough	09/11/74	The Authority agrees to receive and treat all sanitary sewage originating within the Jefferson Borough area of the watershed at its sewage treatment facility	Agreement is good for the life of the bond	500,000 gallons per day		None		Court	\$200 tap-in-charge, charges for trunk line use based on rate of \$1.00 per lineal front foot of lot frontage, monthly service charge of \$2.00 per month for each single family home
West Elizabeth Borough	02/01/80	Amendment to original agreement because of proposed plant expansion to accommodate more flow from Jefferson Borough and Hercules Inc.		Maximum average daily flow of 80,000 gallons instead of 50,000 gallon					

West Elizabeth Sanitary Authority

Water Pollution Control Facility
Service Area and Collection System

Allegheny County
Department of Economic Development

Allegheny County, PA

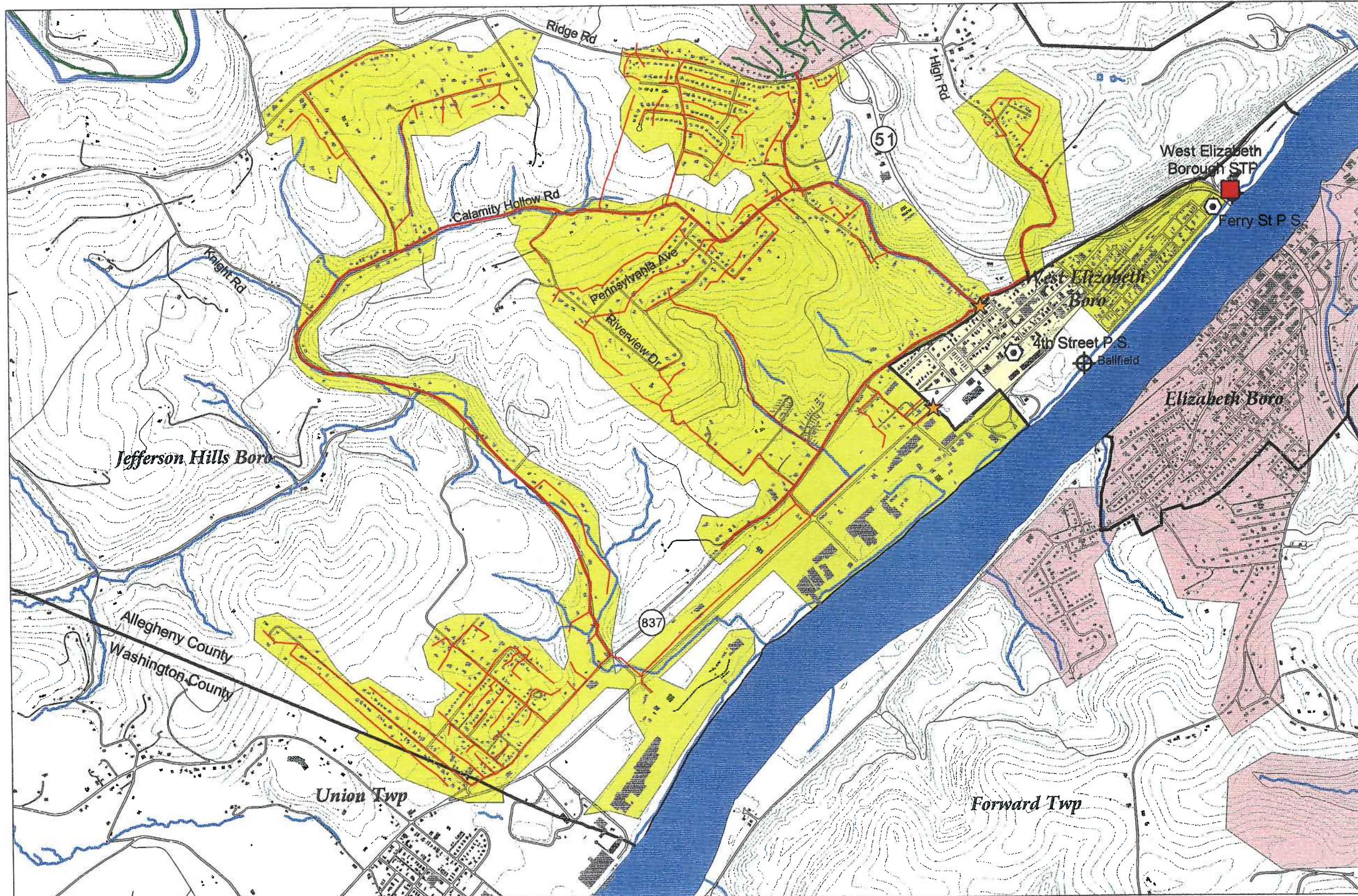


400 0 400 800 Feet

- Public Treatment Facility
- Existing STP
- Pump Station
- Combined Sewer Outfall
- Intermunicipal Connection
- Municipal Boundary
- Major Road
- Contour
- Hydrologic Feature
- Building
- Collection System
- Combined
- Separate
- Pipe Type
- Collector
- Force Main
- Trunk
- Neighboring Service Area
- Neighboring Collection System



Not Field Verified
Source: West Elizabeth Boro. Sewer Map
The Gateway Engineers, Inc.



West Mifflin Sanitary Sewer Municipal Authority

The West Mifflin Sanitary Sewer Municipal Authority (WMSSMA) is a treatment and collection authority serving customers in the Boroughs of West Mifflin and Dravosburg. The WMSSMA was created in 1996 and is comprised of a five member Board of Directors. There are three Sewage Treatment Plants (STPs) owned and operated by WMSSMA that serve West Mifflin Borough including Kenmore Manor STP, New England STP and Thompson Run STP. Three sections of West Mifflin Borough are served by the Allegheny County Sanitary Authority (ALCOSAN): Homeville (Bellwood Road), Lebanon Road (Route 885), and Streets Run.

The Kenmore Manor STP is a 0.48-mgd, 816 lb CBOD₅/day extended aeration modification of the activated sludge process plant that discharges to the Monongahela River. In 1997, the average monthly flow at Kenmore STP was 0.073 mgd and the average monthly organic loading was 132 CBOD₅/day. The New England STP is a 1.2-mgd, 2,040 lb CBOD₅/day conventional, activated sludge plant that discharges to an unnamed tributary of the Monongahela River. In 1997, the average monthly flow at the New England STP was 0.747 mgd and the average monthly organic loading was 1,097 CBOD₅/day. The Thompson Run STP is a 2.5-mgd, 4,250 lb CBOD₅/day conventional, activated sludge sewage treatment plant that discharges to Thompson Run. In 1997, the average monthly flow at the Thompson Run STP was 2.39 mgd and the average monthly organic loading was 1,877 CBOD₅/day. The twelve pumping stations utilized by the three STPs were all upgraded as of November 1997. Upgrades included general, mechanical and electrical improvements to reduce the frequency of overflows caused by power outages and equipment failure. Emergency generators and a telemetry system were included as part of this upgrade project.

With the exception of the lift station at the Kenmore STP, there are no sewage pumping stations within the Kenmore sewer system. The WMSSMA is planning to eliminate the Kenmore STP because of high operating costs. A new pump station and force main is planned to be completed by the summer of 1999 to transfer the flow from the Kenmore Watershed to the Thompson Run Watershed. Flows formerly from Kenmore STP would then be treated at the Thompson Run STP. The existing Kenmore STP will be converted to a wet weather flow equalization facility.

The New England STP, built in 1954, was the first plant built in Allegheny County. Upgrades to this STP are currently under construction. The upgrades include numerous process improvements and the addition of an alternate power source for the plant. A future project, expected to begin during the summer of 1999, will include construction of a 550,000-gallon flow equalization tank and second digester. There are three pumping stations (P.S.) within the New England STP sewer system including the Airport P.S., Pleasant Hills No. 1 P.S. and Pleasant Hills No. 2 P.S. All three stations are equipped with two pumps, an operating pump and a backup unit.

The original Thompson Run STP was a 0.5-mgd activated sludge plant. In July 1960, a state permit expanded the plant to the current 2.5 mgd design flow capacity. The Thompson Run STP sewer system has eight pumping stations including Belmont Avenue, Brick Hollow, Carolina Avenue, Curry Hollow Road, Homeville, Lebanon School Road, Maryland Avenue and Mid City Pump Stations. All stations are equipped with two pumps, an operating pump and a backup unit. A construction project is currently underway to add a 1.5 mgd capacity sequencing batch reactor treatment plant at the Thompson Run site. The facility is being constructed to augment the capacity of the existing plant and provide flow equalization capacity during wet-weather periods.

The WMSSMA owns all the pump stations (all recently upgraded), sewers and collection systems (dating back to 1952-1954) associated with the Authority's three STPs. There is a total of approximately 95-miles of sewer lines, which includes 6.8-miles associated with Kenmore STP, 18-miles associated with New England STP and 70-miles associated with Thompson Run STP. All sewers servicing the West Mifflin Borough are separate. The sewer portion of Dravosburg, tributary to Thompson Run STP has separate sewers. Sewer inspection and maintenance activities are generally scheduled and performed by WMSSMA in response to problems. However, most recently, the Authority has had a three to four person crew actively cleaning approximately two to three miles of sewer per year and performing a variety of spot I/I type repairs. The Authority recently purchased a new vacuum truck, all their work trucks are new and they have televising equipment for inspection and maintenance activities. The WMSSMA is not a member of any Council of Governments (COG). An employee of the associated STP who performs routine maintenance tasks and checks for proper operation inspects all twelve pump stations once a day.

The Edgewater Pump Station, owned and operated by WMSSMA, transports flow to the ALCOSAN collection system. WMSSMA will eliminate this pump station by June 1999. The Thompson Run STP will serve approximately 100 homes currently tributary to this pump station.

The Kenmore STP service area population of approximately 2,329 is projected to increase to approximately 2,600 by 2015. Based on the 2015 population increase, the hydraulic and organic loadings to the treatment plant are expected to increase by 10 percent. The hydraulic loading is projected to increase to approximately 0.08 mgd, and the organic loading is projected to increase to approximately 150 lb CBOD₅/day.

The New England STP service area population of approximately 6,815 is projected to increase to approximately 7,600 by 2015. Based on the 2015 population increase, the hydraulic and organic loadings to the treatment plant are expected to increase by 10.7 percent. The hydraulic loading is projected to increase to approximately 0.83 mgd, and the organic loading is projected to increase to approximately 2,250 lb CBOD₅/day including the loadings from the Kenmore STP service areas. The current hydraulic capacity and organic loading capacity of the plant appears to be adequate for the projected loading conditions in 2015.

The Thompson Run STP service area population of approximately 25,473 is projected to increase to approximately 28,000 by 2015. Based on the 2015 population increase, the hydraulic and organic loadings to the treatment plant are expected to increase by 10 percent. The hydraulic loading is projected to increase to approximately 2.6 mgd in the current Thompson Run service area, and another 0.08 mgd from the Kenmore STP when it is decommissioned. The organic loading is projected to increase to approximately 2,250 lb CBOD₅/day including the loadings from the Kenmore STP service area. The current hydraulic capacity and organic loading capacity of the plant appears to be adequate for the projected loading conditions in 2015.

West Mifflin Sanitary Sewer Municipal Authority

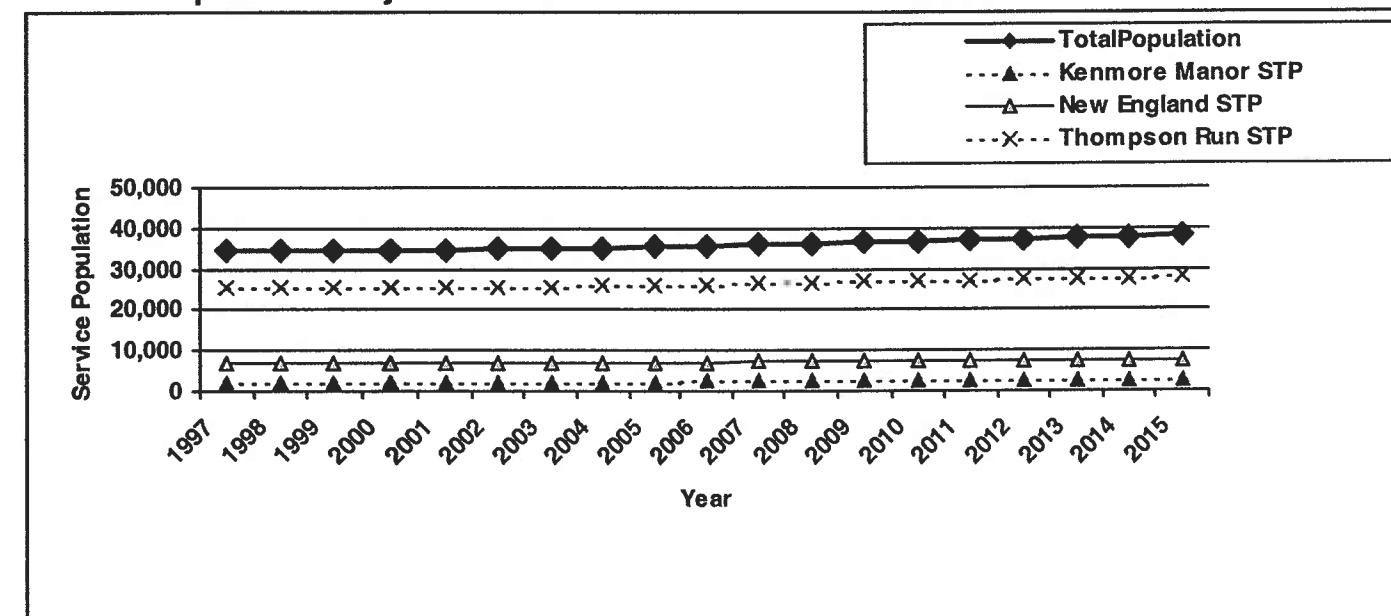
Service Area Summary

POTW Name	1997 Service Population	2015 Service Population	Municipality	Type Of Sewer System
Kenmore Manor STP	2329	2562	West Mifflin Borough	Separate
New England STP			West Mifflin Borough	Separate
Thompson Run STP	25473	28016	West Mifflin Borough	Separate

Treatment Process Summary

POTW Name	Equalization	Screening	Comminution	Grit Removal	Prechlorination	Primary Treatment	Activated Sludge	Extended Aeration	Contact Stabilization	Trickling Filter	Disinfection	Dechlorination	Filtration	Regeneration	Thickening	Aerobic Digestion	Anaerobic Digestion	Lime Stabilization	Composting	Thermal Processing	Dewatering	Land Application	Landfill	Incineration	Haul to other STP	Odor Control	
Kenmore Manor STP		■	■																								
New England STP			■	■		■	■				■																
Thompson Run STP			■			■	■					■															

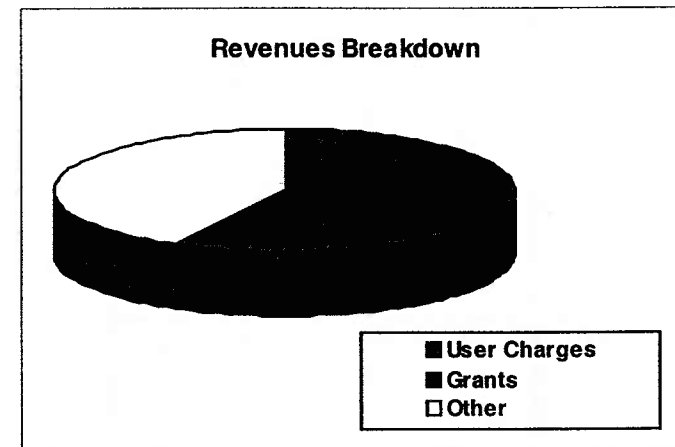
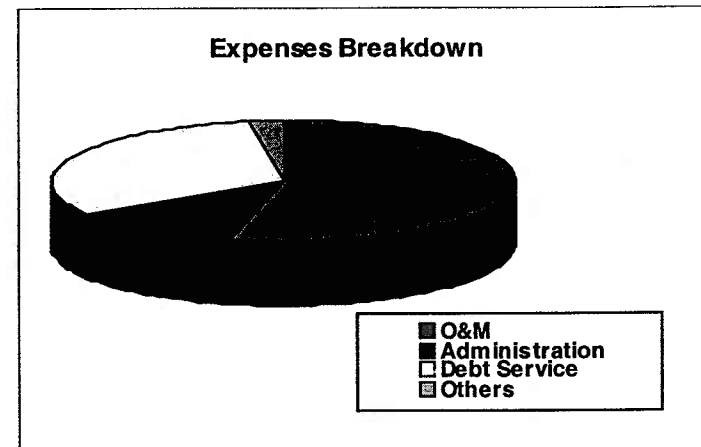
Service Population Projections



West Mifflin Sanitary Sewer Municipal Authority

Sewer Use Ordinances

Municipality	Corrective Action Plan	Grease Trap Requirement	Industrial Pretreatment Program	Illicit Connection Inspection At Sale	Surcharge
West Mifflin Borough	Yes	Yes	ALCOSAN	Yes	



Financial Information

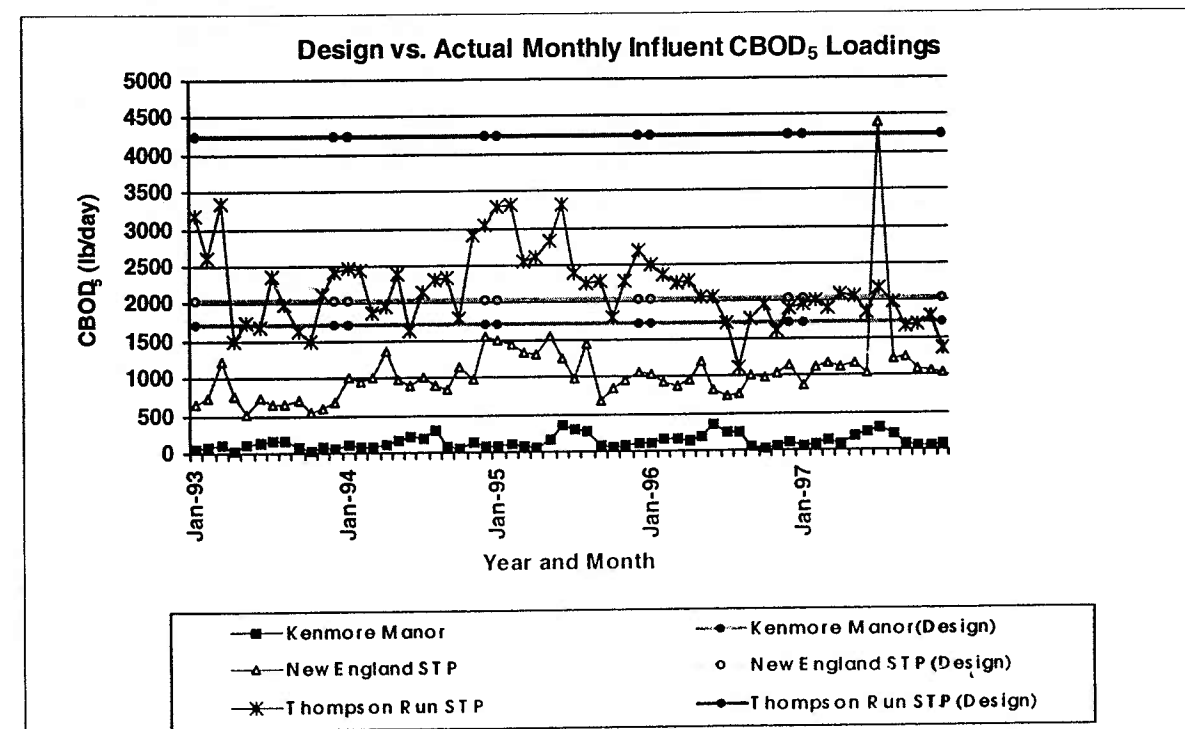
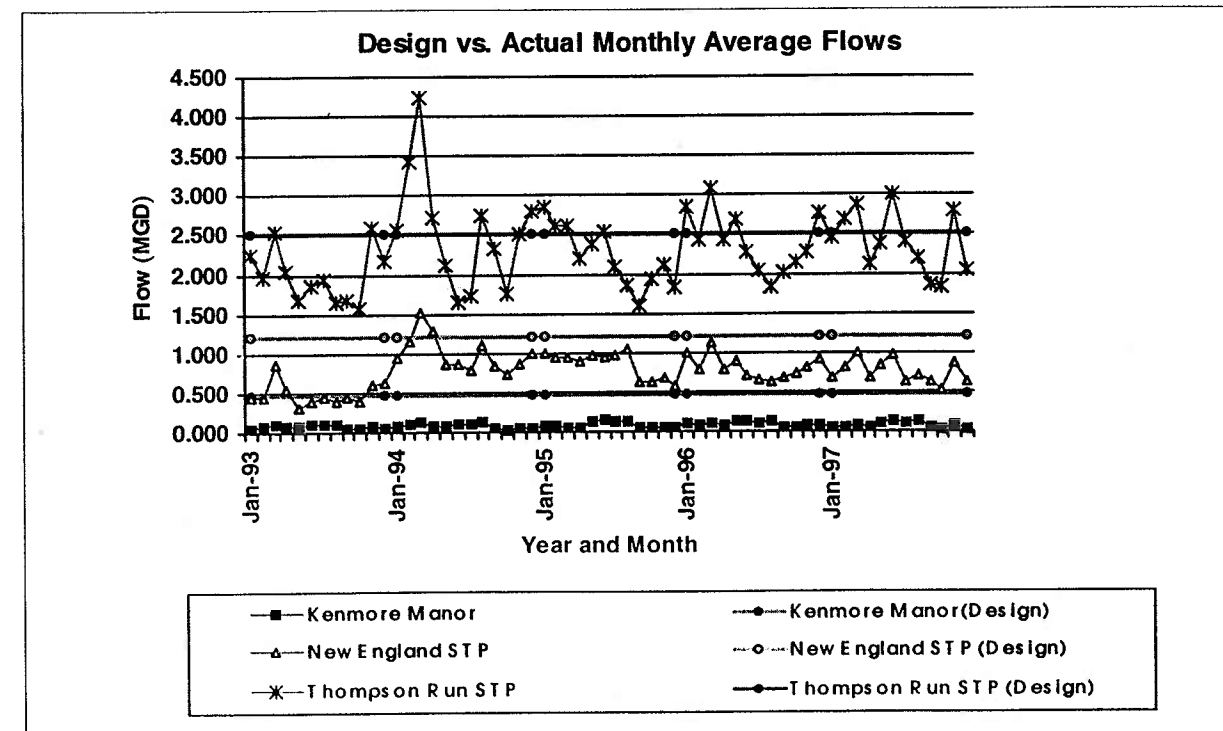
REVENUES		
User Charges:		\$658,380
Grants:		\$0
Other:		\$474,248
Total Revenues		\$1,132,628
EXPENSES		
Operations and Maintenance		\$526,075
Administration:		\$117,623
Debt Service:		\$305,926
Other:		\$24,627
Total Expenses		\$974,251
Surplus(Deficit):		\$158,377
Debt Service Coverage Ratio		1.52
Information Source:	YEAR: 1997	Actual/Budgeted
Revenues	Statistics For Municipal Authorities in PA	Actual
Expenses	Statistics For Municipal Authorities in PA	Actual

West Mifflin Sanitary Sewer Municipal Authority

1997 Plant Performance

Thompson Run STP	Average Daily Flow (mgd)			CBOD ₅ (lb/Day)			Permit Limits			TSS (lb/Day) Effluent	Permit Limits			Effluent Coliform (Col./100ml)		
	Monthly	Summer	Winter	Monthly Influent	Average Effluent	% Removal	Summer	Winter	Average		Summer	Winter	Average Daily	Summer	Winter	
January	2.47			1,969	294	85%			323			732				
February	2.68			2,022	322	84%			521			840				
March	2.87			1,895	292	85%			276			127				
April	2.13			209	169	19%			113			49				
May	2.39			2,052	170	92%			131			207	E			
June	3.00			1,856	240	87%			389			195				
July	2.40			2,176	172	92%			184			182				
August	2.19			1,977	132	93%			123			34				
September	1.85			1,649	130	92%			137			167				
October	1.83			1,697	116	93%			160			54				
November	2.81			1,794	146	92%			171			13				
December	2.05			1,352	134	90%			183			71				
Maximum	3.00	2.50	2.50		322		521	521	521	1000	1000	840	200	2000		
Max as % Limit	120%				62%				52%			420%				
Average	2.39				193				226			223				
3 Month > Limit?	No															

Plant Loading Summary



West Mifflin Sanitary Sewer Municipal Authority

Collection System Facilities

TREATMENT PLANT	Design Capacity (MGD)	Biological Treatment	Owner	Operator
Kenmore Manor STP	0.48	Extended Aeration	WMSSMA	WMSSMA
<u>Pump Station</u>	<u>Peak Capacity</u>	<u>Avg Daily Flow</u>	<u>Owner</u>	<u>Operator</u>
Kenmore L.S.	not provided	not provided	WMSSMA	WMSSMA
<u>Equalization Basin</u>	<u>Capacity</u>	<u>Location</u>	<u>Owner</u>	<u>Operator</u>
None				

TREATMENT PLANT	Design Capacity (MGD)	Biological Treatment	Owner	Operator
New England STP	1.2	Activated Sludge	WMSSMA	WMSSMA
<u>Pump Station</u>	<u>Peak Capacity</u>	<u>Avg Daily Flow</u>	<u>Owner</u>	<u>Operator</u>
Airport	375 / 200 gpm	26.25 / 14 gpm	WMSSMA	WMSSMA
Pleasant Hills #1	200 gpm	18 gpm	WMSSMA	WMSSMA
Pleasant Hills #2	375 gpm	93.75 gpm	WMSSMA	WMSSMA
<u>Equalization Basin</u>	<u>Capacity</u>	<u>Location</u>	<u>Owner</u>	<u>Operator</u>
None				

TREATMENT PLANT	Design Capacity (MGD)	Biological Treatment	Owner	Operator
Thompson Run STP	2.5	Activated Sludge	WMSSMA	WMSSMA
<u>Pump Station</u>	<u>Peak Capacity</u>	<u>Avg Daily Flow</u>	<u>Owner</u>	<u>Operator</u>
Belmont Ave.	750 gpm	263 gpm	WMSSMA	WMSSMA
Briek Hollow	180 gpm	19.8 gpm	WMSSMA	WMSSMA
Carolina Ave.	150 gpm	28.5 gpm	WMSSMA	WMSSMA
Curry Hollow Rd.	1,000 gpm	330 gpm	WMSSMA	WMSSMA
Homeville	900 gpm	342 gpm	WMSSMA	WMSSMA
Lebanon School Rd.	75 gpm	42.75 gpm	WMSSMA	WMSSMA
Maryland Ave.	500 gpm	75 gpm	WMSSMA	WMSSMA
Mid City	560 gpm	50.4 gpm	WMSSMA	WMSSMA
<u>Equalization Basin</u>	<u>Capacity</u>	<u>Location</u>	<u>Owner</u>	<u>Operator</u>
None				

Sewer Maintenance Information

<i>Service Community</i>	<i>Maintained By:</i>	<i>Mainten. Done:</i>	<i>Equipment Source</i>	<i>I/I Removal</i>	<i>I/I Flow Monitor</i>
West Mifflin Borough	WMSSMA	Routine	Authority	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

West Mifflin Sanitary Sewer Municipal Authority

Intermunicipal Agreements

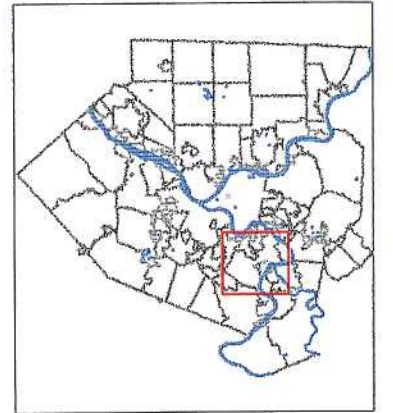
Agreement With	Date Enacted	Agreement Description	Expiration Date	Flow Limits (mgd)	Rate and Surcharge Provisions	Sampling Provisions	Flow Monitoring Provisions	Dispute Resol. Procedure	Basis of Cost Allocation
ALCOSAN	1970		Bonds + 1 year			As-needed	No	No	Water Use
ALCOSAN	1962		Bonds + 1 year			As-needed	No	No	Water Use
ALCOSAN	1949	Original service agreement providing for uniform rate structure based on water consumption. There is no definition of sewage. Municipalities agreed to pay customer arrears, resulting in an excellent credit rating.	Bonds + 1 year			As-needed	No	No	Water Use

West Mifflin Sanitary Authority

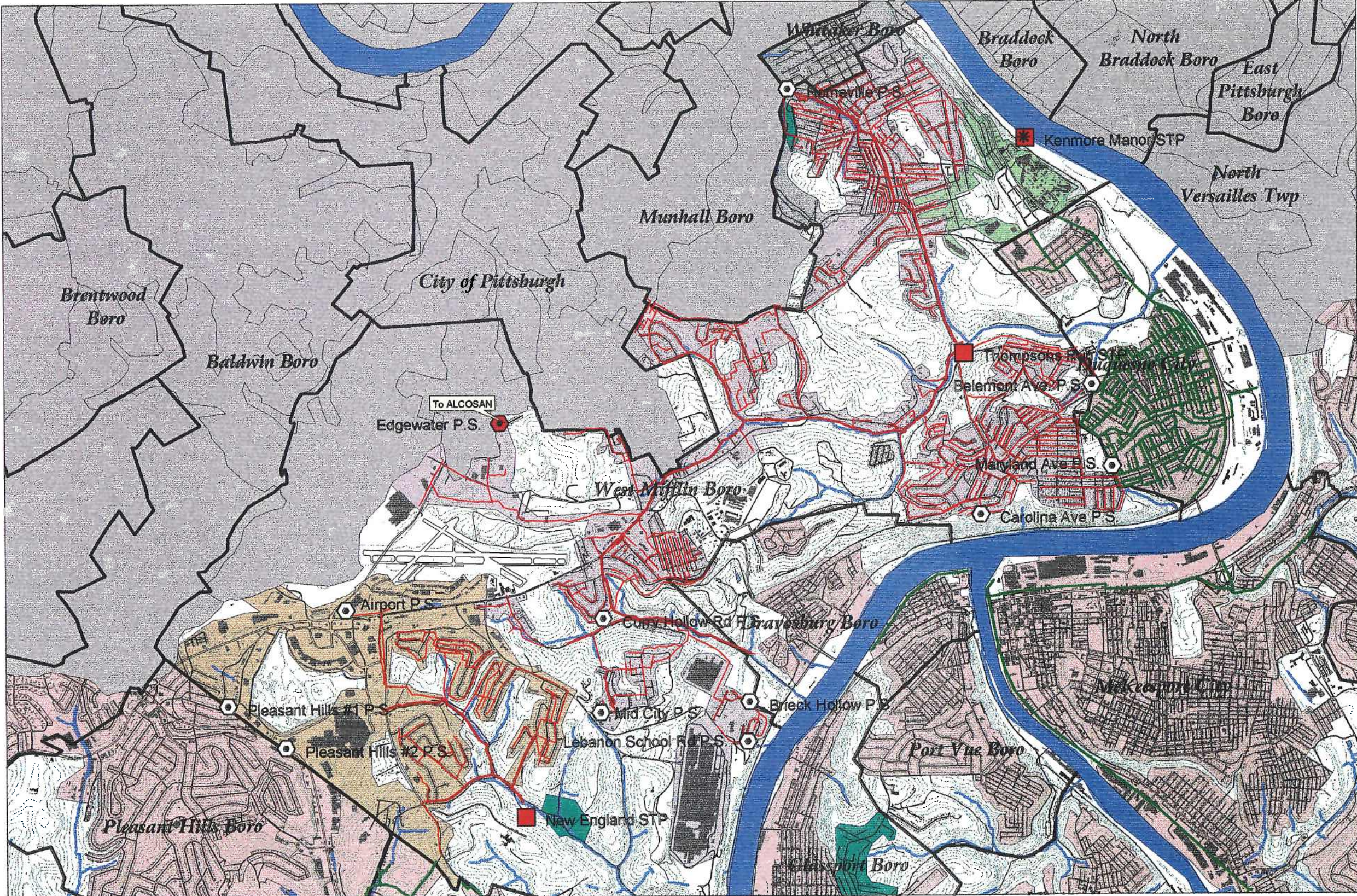
Water Pollution Control Facilities
Service Areas and Collection
Systems

Allegheny County
Department of Economic Development

Allegheny County, PA



900 0 900 1800 Feet



- Public Treatment Facility
- Existing STP
- To Be Converted to Pump Station and Equalization Basin
- Pump Station
- Pump Station to be Abandoned
- Municipal Boundary
- Major Road
- Contour
- Hydrologic Feature
- Building
- West Mifflin Sanitary Authority Collection System
- Kenmore Manor STP Service Area Separate System
- New England STP Service Area Separate System
- Thompsons Run STP Service Area Separate System
- On - Lot Problem Area
- Pipe Type
- Collector
- Force Main
- Trunk
- Neighboring Collection System
- Neighboring Collection System
- ALCOSAN Service Area
- Not Field Verified

Source: West Mifflin Sanitary Authority

Model Sewer Use Ordinance

This model ordinance is intended to provide guidance to municipalities in the development of a sewer use ordinance. It should be reviewed and modified by the municipal attorney and engineer to meet local conditions and policies, specifically the pre-treatment and other requirements of the wastewater treatment agencies into which your system may discharge.

(N) _____ Ordinance Number _____

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1 ORDINANCE NO. _____

2 AN ORDINANCE regulating the use of residential and non-residential, public and private sewers, drains, and
3 wastewater pretreatment and treatment systems and the discharge of waters and wastes into the (n)_____’s
4 wastewater system; and providing penalties for the violation thereof.

5 WHEREAS, it is deemed necessary in the interest of public health and welfare to reasonably regulate the
6 discharge of certain substances, and use of (n)_____’s wastewater system

7 WHEREAS, regulation and inspection are necessary because certain substances may damage or interfere with
8 the operation of the District’s wastewater system and related appurtenances or interfere with the wastewater
9 treatment processes or pose a hazard to the public or to (n)_____’s employees if discharged into the
10 (N)_____’s wastewater system, or pass through the system treatment facilities and impair water quality of the
11 waters of the Commonwealth or contaminate the sludge, or impair air quality through emissions of air
12 pollutants, it is deemed necessary, therefore, to preclude or limit certain substances from entering said
13 wastewater system.

14 WHEREAS, the discharge of excess clearwater (herein defined) poses a threat to the operation of the
15 wastewater system and downstream systems and compliance with Commonwealth and federal statutes.
16 WHEREAS, the discharge of excess clearwater into (N)_____’s and downstream wastewater systems utilizes
17 system capacity that otherwise could be allocated for economic growth and development.

18 BE IT ORDAINED BY THE (n)_____ THAT:

19 ARTICLE I - PURPOSE AND OBJECTIVES

20 Section 1. Purpose of Ordinance

21 The purpose of this Ordinance is to comply with Commonwealth and Federal laws and to protect
22 the public health and safety by abating and preventing pollution through the regulation and
23 control of the quantity and quality of residential and nonresidential wastewater, industrial wastes,
24 stormwater, and other wastes discharged into the (N)_____’s wastewater system, stormwater
25 system and watercourses.

26 Section 2. Objectives.

27 The objectives of this ordinance are:

- 28 A) To prevent the introduction of pollutants into the wastewater system which may damage
29 or interfere with the operation of the systems.
- 30 B) To prevent the introduction of pollutants into the wastewater system which may interfere
31 with treatment and pollution control processes.
- 32 C) To prevent the introduction of pollutants into the wastewater system which will pass
33 through the systems inadequately treated into watercourses, or the atmosphere, or
34 otherwise be incompatible with the systems.
- 35 D) To prevent the introduction of pollutants into the wastewater system which will interfere
36 with sludge and solids management options.

- 37 E) To prevent the introduction of pollutants into the wastewater system which will create a
38 hazard to (n)_____ employees or the public, adversely affect public health and welfare
39 or adversely impact the environment.
- 40 F) To prevent the introduction of pollutants into the stormwater system and watercourses
41 which will interfere with beneficial uses and/or achievement of applicable Commonwealth
42 and Federal water quality standards.
- 43 G) To preserve the hydraulic capacity of the wastewater system to meet current needs and
44 future growth.

45 ARTICLE II - DEFINITIONS

46 Unless the context specifically indicates otherwise, the meaning of terms used in this Ordinance shall be as
47 follows:

- 48 1. ASTM means the American Society for Testing and Materials.
- 49 2. BOD5 (Biochemical Oxygen Demand) means the quantity of oxygen utilized in 5 days in the
50 biochemical oxidation of carbonaceous and nitrogenous compounds and certain inorganic
51 materials in water or wastewater as determined by Standard Methods and expressed in
52 milligrams per liter.
- 53 3. BUILDING SEWER means a sewer extension from a building or an industrial process to the
54 point of connection with (n)_____’s wastewater system or other place of disposal.
- 55 4. BYPASS means the intentional diversion of waste streams from any portion of a user’s sewer
56 system, treatment facility or pretreatment facility or other control facility.
- 57 5. CATEGORICAL PRETREATMENT STANDARDS or CPS means any regulation containing
58 pollutant discharge limits or requirements promulgated by the EPA at 40 CFR Chapter One,
59 Subchapter N, Parts 405 through 471 (as amended), in accordance with Section 307(b) and © of
60 the Clean Water Act, and which apply to a specific category of industrial user. Users subject to
61 categorical standards are also subject to the general pretreatment standards.
- 62 6. CERCLA means the Comprehensive Environmental Response, Compensation, and Liability Act
63 of 1980 and all amendments thereto.
- 64 7. CFR means Code of Federal Regulations as published by the Office of the Federal Register,
65 National Archives and Records Administration.
- 66 8. CLEAN WATER ACT or CWA means the Federal Water Pollution Control Act of 1972 and all
67 amendments thereto.
- 68 9. CLEAN STREAMS LAW means 35 Pennsylvania Statutes 691.1 et seq.
- 69 10. CLEAR WATER means groundwater and stormwater as defined herein plus other sources of
70 unpolluted water not entering the wastewater system as a result of potable water usage or
71 industrial processes.

- 72 11. COD (Chemical Oxygen Demand) means the quantity of oxygen utilized in the chemical
73 oxidation of organic and oxidizable inorganic matter in water or wastewater as determined by
74 Standard Methods and expressed in milligrams per liter.
- 75 12. COMBINED SEWER means a pipe or conduit designed and intended to receive and convey
76 wastewater, stormwater including roof and street drainage, unpolluted water and cooling water.
- 77 13. COMBINED SEWER OVERFLOW means a discharge that occurs from a combined sewer into
78 waters of the Commonwealth when the flow in the combined sewer exceeds the capacity of the
79 combined sewer or flow regulation facility due to wet weather conditions.
- 80 14. COMMERCIAL CENTRALIZED WASTE TREATMENT FACILITY or CWT means a facility
81 (other than a landfill or an incinerator) which treats or stores aqueous wastes generated by
82 facilities not located on the site of the CWT and which disposes of these wastes by discharging
83 them into the (n)_____’s wastewater system.
- 84 15. COMPOSITE SAMPLE means a sample made up by combining individual grab samples
85 collected within a 24 hour period. For all pollutants subject to composite sampling requirements,
86 24 hour flow proportional composite samples shall be obtained when feasible. If the user
87 demonstrates that flow proportional composite samples are not feasible, then the Director may
88 allow collection of time proportional composite samples. In no case may a composite sample be
89 made from fewer than four grab samples. In all cases the individual grab samples must be
90 adequately spaced so as to ensure a sample that is representative of the user’s daily operations.
- 91 16. COOLING WATER means the water discharged from any system of condensation, air
92 conditioning, cooling, refrigeration, industrial cooling process, or other cooling system which
93 uses or generates water during operation.
- 94 17. PENNSYLVANIA CODE means the code of Commonwealth regulations.
- 95 18. DAILY AVERAGE VALUE means the result of analysis for a particular pollutant in a composite
96 sample of a discharge collected within a time period not greater than 24 hours.
- 97 19. DIRECTOR means the [Director of Public Works of (n)_____] [Executive Director of The
98 (n)_____ Authority], or his/her duly authorized representative.
- 99 20. DISCHARGE PERMIT means a permit issued by the (n)_____ to a user for a discharge of
100 wastewater or stormwater into the (n)_____’s system.
- 101 21. (n)_____’S SYSTEM or SYSTEM means the entire system of combined sewers, sanitary
102 sewers, wastewater treatment facilities owned and operated by the (n)_____.
- 103 22. DRAINAGE FACILITY means any system of artificially constructed drains, including open
104 channels, whether lined or unlined, and separate storm sewers used to convey stormwater,
105 surface water or groundwater. A drainage facility may also convey effluent discharged pursuant
106 to an NPDES permit when such use is approved by the Director.
- 107 23. DOWN STREAM SYSTEM shall mean the wastewater system of any municipality or municipal
108 authority into which the (N)_____’s wastewater system discharges for purposes of conveyance
109 or treatment.

- 110 24. DRY WEATHER FLOW means flow which is a combination of sanitary flow, industrial flow and
111 infiltration with no contribution from stormwater runoff.
- 112 25. EPA means the United Commonwealths Environmental Protection Agency.
- 113 26. EXCESSIVE CLEARWATER means any clearwater that is intentionally discharged to a sanitary
114 sewer system and clearwater entering the (N)_____’s wastewater system through leaks in
115 building sewers in rates or volumes exceeding the design standard applicable to the building
116 sewer.
- 117 27. GARBAGE means any refuse accumulation of solid animal, fruit or vegetable matter that attends
118 the preparation, use, cooking, dealing in or storing of food and from the handling, storage and
119 sale of produce.
- 120 28. GENERAL PRETREATMENT STANDARDS means any regulations containing pollutant
121 discharge limits or requirements applicable to all industrial users, promulgated by EPA in 40
122 CFR Chapter One, Subchapter N, Parts 401 through 403 (as amended), in accordance with
123 Section 307(b) and c of the Clean Water Act.
- 124 29. GRAB SAMPLE means an individual sample collected in less than fifteen (15) minutes.
- 125 30. GROUNDWATER means any water pertaining to, formed, or occurring underneath the surface
126 of the earth.
- 127 31. HAULED WASTE means any waters or liquid wastes which have been removed and transported
128 from any pit, sump, holding tank, septic tank, sewage treatment plant or industrial facility for
129 discharge to the (n)_____ at designated points as regulated by applicable Ordinances. 29.
130 INDUSTRIAL USER means any person who discharges into the (n)_____’s wastewater system
131 from any source regulated under Section 307(b),(c) or (d) of the Clean Water Act or from any
132 source listed in Division A, B, D, E or I of the Standard Industrial Classification Manual or from
133 any solid waste disposal operation such as, but not limited to landfills, recycling facilities, solid or
134 hazardous waste handling or disposal facilities, and CATS.
- 135 32. INDUSTRIAL WASTE means the water-borne wastes, including contaminated cooling water,
136 from industrial processes, as distinct from sanitary wastewater.
- 137 33. INFECTIOUS WASTE means any waste which contains pathogens with sufficient virulence and
138 in sufficient quantity so that exposure to the waste by a susceptible host could result in an
139 infectious disease. Such wastes include, but are not limited to: (1) Isolation wastes generated by
140 hospitalized patients who have communicable diseases capable of being transmitted via those
141 wastes; (2) Surgical, dialysis and laboratory wastes contaminated in the process of caring for
142 hospital patients who have communicable diseases capable of being transmitted via those
143 wastes; (3) Cultures and stocks of infectious agents and associated biologicals; (4) Blood and
144 blood products known or suspected to be contaminated with a transmissible infectious agent; (5)
145 All pathology and autopsy wastes, including those from animals contaminated with infectious
146 agents capable of being transmitted to humans; and (6) All discarded sharps including
147 hypodermic needles, syringes, and scalpel blades that have come in contact with material
148 considered infectious.
- 149 34. INFILTRATION shall mean clearwater entering a sanitary sewer through leaks and other
150 unintentional sources.

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- 35. **INFLOW** shall mean clearwater entering a sanitary sewer through drains and other intentional sources.
- 36. **INTERFERENCE** means the inhibition or disruption of the (n)_____’s wastewater system, downstream system or operations or its processing, use or disposal of sludge, by a user’s discharge which alone or in conjunction with other discharges, causes, or contributes to the inhibition or disruption and which: (a) causes a violation of any requirement of the (n)_____’s NPDES Permit (including an increase in the magnitude or duration of a violation); or (b) prevents the use or disposal of sludge by the (n)_____ in compliance with any of the following Statutes and Regulations: Section 405 of the Clean Water Act, the Solid Waste Disposal Act (SWDA), the Resource Conservation and Recovery Act (RCRA), the Clean Air Act, the Toxic Substances Control Act (TSCA) or any more stringent Commonwealth or local regulations. A user contributes to interference when the user: (1) Discharges a pollutant concentration or a daily pollutant loading in excess of that allowed by (n)_____ Ordinance or permit or by Federal, Commonwealth, Allegheny County or Downstream System regulation; (2) Discharges wastewater which substantially differs in nature and constituents from the user’s normal average discharge; (3) Knows or has reason to know that its discharge, alone or in conjunction with discharges from other users, would result in interference; or (4) Knows or has reason to know that the (n)_____ is, for any reason, violating its final effluent limitations in its NPDES permit and that the user’s discharge either alone or in conjunction with discharges from other users, increases the magnitude or duration of the (n)_____’s violations.
- 37. **INSTANTANEOUS VALUE** means the result of analysis for a particular pollutant in a grab sample.
- 38. **LONG TERM AVERAGE** means an average volume or rate of discharge or average mass of pollutant discharge or average rate of production based on actual levels of production or operation over an extended period of time sufficient to capture the normal range of variations in production or operation. A long term average should be based on a minimum of one recent year’s historical data, if available, or upon well documented projections if such data are not available.
- 39. **MAY** as used herein is permissible. “Shall” is mandatory.
- 40. **NEW SOURCE** means any new building, structure, facility or installation from which there is or may be a discharge of pollutants, the construction of which commenced after the publication of proposed pretreatment standards under Section 307© of the CWA which will be applicable to the source if promulgated, provided: (1) Construction is at a site where no other source is located; or (2) Construction totally replaces a process or production equipment that caused a discharge of pollutants at an existing source; or (3) The new production or wastewater generating processes are substantially independent of an existing source at the site. Construction is deemed to have commenced if there has been any placement, assembly or installation of components, significant site preparation work, or entry into binding contractual obligations for the purchase of components which are intended to be used in the new operation within a reasonable period of time. Construction at an existing site results in a modification, not a new source, if it alters, replaces, or adds to existing processes or production equipment, but does not totally replace them, or if the resulting production or wastewater generating processes are not substantially independent of the existing source.
- 41. **NON-RESIDENTIAL** means all property other than residential property, including but not limited to, industrial, commercial and semi-public.

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- 42. **NORMAL WASTEWATER** means wastewater which, prior to any treatment, contains not more than _____ milligrams per liter of suspended solids and has a BOD5 not greater than _____ milligrams per liter, and a COD not greater than _____ milligrams per liter or as defined by a Downstream System
- 43. **NPDES PERMIT** means a permit issued under the National Pollutant Discharge Elimination System pursuant to Section 402 of the Clean Water Act for a discharge into waters of the Commonwealth.
- 44. **OUTFALL** means any point of discharge into a watercourse, or other body of surface or groundwater.
- 45. **OWNER** means the person or persons who legally own, lease or occupy private property with wastewater facilities that discharge, or will discharge, to the (N)_____’s wastewater system.
- 46. **PASS THROUGH** means a discharge of a pollutant from a (n)_____ treatment plant into waters of the Commonwealth when such discharge causes a violation of any requirement of the (n)_____’s NPDES permit, or a violation of a Commonwealth or Federal water quality standard or increases the magnitude or duration of any violation and which is the result of a user’s discharge of the pollutant either alone or in conjunction with other user’s discharges of the pollutant into the (n)_____’s wastewater system. A user contributes to pass through when the user: (1) Discharges a pollutant concentration or a daily pollutant loading in excess of that allowed by (n)_____ Ordinance or permit or by Federal, Commonwealth, Allegheny County or Downstream System regulation; (2) Discharges wastewater which substantially differs in nature and constituents from the user’s normal average discharge; (3) Knows or has reason to know that its discharge, alone or in conjunction with discharges from other users, would result in pass through; or (4) Knows or has reason to know that the (n)_____ is, for any reason, violating its final effluent limitations in its NPDES permit and that the user’s discharge either alone or in conjunction with discharges from other users, increases the magnitude or duration of the (n)_____’s violations.
- 47. **PERSON** means any individual, firm, proprietorship, partnership, company, association, public or private corporation, joint stock company, trust, estate, political subdivision, or any agency, board, department, or bureau of the Commonwealth or Federal government, or any other legal entity.
- 48. **pH** means the intensity of the basic or acidic condition of a solution as determined by Standard Methods and expressed in standard units (s.u.). A standard unit is the negative logarithm (base 10) of the hydrogen ion activity in a solution at a given temperature.
- 49. **POINT OF CONNECTION** means the point at which building sewers are connected to (N)_____’s wastewater system.
- 50. **POINT SOURCE** means any discernible, confined, and discrete conveyance, including but not limited to, any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, vessel, or other floating craft from which pollutants are or may be discharged.
- 51. **POLLUTANT** means any substance which, alone or in combination with other substances, if discharged to waters of the Commonwealth in sufficient quantities, causes or is reasonably certain to cause any alteration of the physical, chemical or biological properties of such waters; or to create a nuisance; or to render such waters harmful, detrimental or injurious to public

- 238 health, safety or welfare, or to domestic, industrial, agricultural, recreational, or other legitimate
239 beneficial uses or to any organism, aquatic life, plant or animal.
- 240 52. POTW means a publicly owned treatment works or wastewater treatment plant operated by
241 (N)_____ or a Downstream System pursuant to a NPDES operating permit.
- 242 53. PRETREATMENT means the reduction or elimination of pollutants or the alteration of the nature
243 of pollutant properties in wastewater to a more acceptable Commonwealth prior to discharge to
244 the (n)_____’s wastewater system.
- 245 54. PRIVATE SEWER means a sewer within the boundaries of the (n)_____ but not owned or
246 controlled by the (n)_____.
- 247 55. PROBLEM DISCHARGE means any upset, slug discharge, bypass, spill or accident which does
248 or may result in a discharge into the (n)_____’s system or into a watercourse of a prohibited
249 substance as listed in Articles IV and V; or of a regulated substance in excess of limitations as
250 listed in Article V; or of a regulated substance in excess of limitations established in any permit
251 issued to the user by the (n)_____ or any NPDES permit issued to the user, and which may: (a)
252 cause interference or pass through; or (b) contribute to a violation of any requirement of the
253 (n)_____’s NPDES permit; or © cause violation of any Commonwealth or Federal water quality
254 standard.
- 255 56. PRODUCTION BASED DISCHARGE LIMITATION means a pollutant limitation which is
256 expressed in terms of allowable mass discharge of pollutant per unit of production. In order to
257 determine compliance with such a limitation, the actual discharge rate and the actual production
258 rate at the time of sampling must be known.
- 259 57. PROPERLY SHREDDED GARBAGE shall mean garbage that has been shredded such that all
260 particles will be carried freely under flow conditions normally prevailing in the wastewater
261 sewers, with no particle greater than 0.5 inches in any dimension; or as specified by a
262 Downstream System.
- 263 58. RCRA means the Federal Resource Conservation and Recovery Act of 1976 and all
264 amendments thereto.
- 265 59. RESIDENTIAL means property used only for human residency and shall include subdivisions,
266 single family dwellings, two family dwellings, and multifamily dwellings.
- 267 60. RESPONSIBLE CORPORATE OFFICER means a president, secretary, treasurer or vice
268 president in charge of a principal business function, or any other person who performs similar
269 policy or decision making functions for the corporation, or the manager of one or more
270 manufacturing, production or operation facilities if authority to sign documents has been
271 assigned or delegated to the manager in accordance with corporate procedures.
- 272 61. SANITARY SEWER means a pipe or conduit designed and intended to receive and convey
273 wastewater as defined herein.
- 274 62. SANITARY WASTEWATER means wastewater emanating from the sanitary conveniences,
275 including toilet, bath, laundry, lavatory, and/or kitchen sink, of residential and non-residential
276 sources, as distinct from industrial waste.
- 277 63. SEMI-PUBLIC means a governmental, institutional, educational or municipal property.

- 278 64. SEPARATE STORM SEWER means a pipe, conduit, conveyance or system of conveyances
279 (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches,
280 manmade channels or storm drains) designed and intended to receive and convey stormwater,
281 as defined herein and which discharges to waters of the Commonwealth and which is not part of
282 the combined sewer system.
- 283 65. SEVERE PROPERTY DAMAGE means substantial physical damage to property, damage to the
284 treatment facilities which causes them to become inoperable, or substantial or permanent loss of
285 natural resources which can reasonably be expected to occur in the absence of a bypass.
286 Severe property damage does not mean economic loss caused by delays in production.
- 287 66. SEWER means a pipe or conduit for conveying wastewater, stormwater or cooling water or other
288 disposed wastes.
- 289 67. SHALL is mandatory; MAY is permissive.
- 290 68. SIGNIFICANT NEW OR INCREASED DISCHARGE means: (1) Any discharge from a new
291 process or facility or a new source. (2) Any increase in volume or rate of discharge from an
292 existing process or facility when the new long term average daily volume or rate of discharge will
293 exceed the previous long term average by 20% or more. (3) Any addition of a priority pollutant or
294 a toxic pollutant not previously present or suspected in the user’s discharge. (4) Any addition of a
295 hazardous waste subject to, but not previously reported under the reporting requirements in
296 Article VIII, Section Nine of this Ordinance. (5) Any increase in mass of an existing regulated
297 pollutant when the new long term average daily mass discharge of that pollutant will exceed the
298 previous long term average by 20% or more. (6) Any addition of a new pollutant or any increase
299 in mass of an existing pollutant when the discharge of such pollutant may cause or contribute to
300 interference or pass through. (7) Any new batch discharges when previous discharges from an
301 existing source occurred on a continuous basis.
- 302 69. SIGNIFICANT NONCOMPLIANCE means the more stringent of the definition used by the
303 applicable Downstream System or means that violations of this Ordinance by a user subject to
304 pretreatment standards meet one or more of the following criteria: (1) Chronic Violation: 66% or
305 more of all measurements taken for the same pollutant during a six month period exceeded (by
306 any magnitude) the applicable daily maximum limit or the applicable average limit; (2) Technical
307 Review Criteria (TRC) Violation: 33% or more of all measurements taken for the same pollutant
308 during a six month period equaled or exceeded the product of the daily average maximum limit
309 or the average limit times the applicable TRC. (For categorical pretreatment limitations the TRC
310 equals 1.4 for BOD, TSS and Oil and Grease; and 1.2 for all other pollutants except pH. For
311 (n)_____ limitations, the same TRCs apply except there is no TRC for BOD and TSS.); (3) An
312 effluent violation caused interference or pass through or endangered the health of (n)_____
313 personnel or the general public; (4) A discharge caused imminent endangerment to human
314 health, welfare or to the environment and resulted in the (n)_____ exercising its emergency
315 authority under Article IX, Section Three of this Ordinance; (5) Failure to meet a compliance
316 schedule milestone date within ninety (90) days or more after the scheduled date; (6) Failure to
317 submit a required report within thirty (30) days of its due date; (7) Failure to accurately report
318 noncompliance; or (8) Any other violation or group of violations which the Director determines
319 may cause interference or pass through or will adversely affect implementation of the
320 (n)_____’s pretreatment program.

321 70. SLUG DISCHARGE means a discharge of a non-routine, occasional nature of any pollutant
322 released at a flow rate and/or concentration which may cause interference as defined herein. A
323 slug discharge may occur as the result of a pollutant release from a batch operation or a spill or
324 any accidental discharge.

325 71. STANDARD INDUSTRIAL CLASSIFICATION MANUAL or SIC MANUAL means the latest
326 edition of said publication issued by the Executive Office of the President, Office of Management
327 and Budget.

328 72. STANDARD METHODS means the latest edition of "Standard Methods for the Examination of
329 Water and Wastewater" as published jointly by the American Public Health Association, The
330 American Water Works Association, and the Water Pollution Control Federation.

331 73. Commonwealth means the Commonwealth of Pennsylvania.

332 74. STORMWATER means rainfall runoff, snow melt runoff and surface runoff and drainage.

333 75. STORMWATER SYSTEM means the entire system of combined sewers and separate storm
334 sewers, operated by the (n)_____, for the collection, storage and treatment of stormwater to
335 serve the needs of the (n)_____ and its inhabitants and others, including all appurtenances and
336 facilities connected therewith or relating thereto, together with all extensions, improvements,
337 additions and enlargements made thereto or as may be acquired by the (n)_____.

338 76. SURFACE WATER means all water appearing on the land surface as distinguished from
339 groundwater and including water appearing in watercourses, lakes, and ponds.

340 77. SYSTEM (See definition of (n)_____'s System).

341 78. TOTAL OIL AND GREASE means the total of all materials recoverable in a sample as a
342 substance soluble in the procedure solvent using the procedures in Standard Methods and
343 expressed in milligrams per liter. Oil and grease includes fatty acids, soaps, fats, oils, waxes and
344 petroleum products.

345 79. TOTAL SUSPENDED SOLIDS (TSS) means all matter in water, wastewater, or other liquids;
346 that is retained on a filter as determined by Standard Methods and expressed in milligrams per
347 liter. Total Suspended Solids is also known as Nonfilterable Residue (NFR).

348 80. TOTAL TOXIC ORGANICS (TTO) means the summation of all quantifiable values greater than
349 .01 mg/l for the applicable toxic organics included in the listing in 40 CFR 401.15 of toxic
350 pollutants identified pursuant to Section 307(a)(1) of the Clean Water Act as determined using
351 the analytical techniques specified in 40 CFR 136 and expressed in milligrams per liter. For
352 discharges subject to categorical pretreatment standards, the list of organics to be included in
353 the TTO is contained in the applicable standard. For the local TTO limit specified in Article V,
354 Section Two, Subsection B of this Ordinance, the organics to be included in the TTO are all of
355 those from the list in 40 CFR 401.15 which are or may be present in the discharge.

356 81. TOXIC SUBSTANCE means any substance which alone or in combination with other
357 substances, when discharged to a wastewater system, stormwater system or watercourse in
358 sufficient quantities, interferes with any biological wastewater treatment process, or, either
359 through direct exposure or through indirect exposure by ingestion through the food chain,
360 interferes with the normal life processes of any organism, aquatic life, plant or animal or causes
361 adverse human health impacts. Toxic substances include, but are not limited to pollutants listed

362 as toxic in 40 CFR 401.15 pursuant to section 307(a)(1) of the CWA and those listed as toxic in
363 sludge pursuant to section 405(d)(2) of the CWA.

364 82. TREATMENT means the reduction or elimination of pollutants in wastewater or stormwater prior
365 to discharge to waters of the Commonwealth.

366 83. UNPOLLUTED WATER means any water that may be discharged under NPDES regulations
367 into waters of the Commonwealth without having to be authorized by a NPDES permit and which
368 will not cause any violations of Commonwealth or Federal water quality standards.

369 84. UPSET means an exceptional incident in which there is unintentional and temporary
370 noncompliance with pretreatment or treatment standards because of factors beyond the
371 reasonable control of the user. An upset does not include noncompliance to the extent caused
372 by operational error, improperly designed pretreatment or treatment facilities, lack of preventive
373 maintenance, or careless or improper operation.

374 85. USER means any person who discharges, or causes the discharge of wastewater into the
375 (n)_____'s wastewater system or who discharges or causes the discharge of stormwater or any
376 NPDES permit regulated effluent or any other waste into the (n)_____'s stormwater system or
377 any person served by the (n)_____'s system.

378 86. WASTE means any material other than unpolluted water which is accidentally or purposely
379 discarded into the (n)_____'s system.

380 87. WASTEWATER means the water-borne wastes, industrial waste and/or sanitary wastewater as
381 defined herein, emanating from residential and non-residential sources together with such
382 groundwater, surface water, or stormwater as cannot be avoided.

383 88. WASTEWATER SYSTEM means (N)_____'s entire sewerage system, including sanitary and
384 combined sewers and treatment facilities (where applicable), owned and operated by the
385 (n)_____ for the collection, storage and treatment of wastewater to serve the needs of the
386 (n)_____ and its inhabitants and others, including all appurtenances and facilities connected
387 therewith or relating thereto, together with all extensions, improvements, additions and
388 enlargements thereto made or acquired by the (n)_____. The (n)_____'s wastewater system
389 is a Publicly Owned Treatment Works (POTW) as defined at 40 CFR Part 122 and is therefore
390 subject to all provisions of Commonwealth and Federal regulations applicable to POTWs.

391 89. WATERCOURSE means a natural or manmade surface drainage channel or body of water
392 (including a lake or pond) in which a flow of water occurs, either continuously or intermittently.

393 90. WATERS OF THE Commonwealth means all rivers, streams, lakes and other bodies of surface
394 water and groundwater lying within or forming a part of the boundaries of the Commonwealth
395 which are not entirely confined and located completely upon lands owned, leased or otherwise
396 controlled by a single person or by two or more persons jointly or as tenants in common and
397 includes waters of the United Commonwealths lying within the Commonwealth.

398 91. WEF means the Water Environment Federation.

399 92. WET WEATHER FLOW in a combined sewer means flow which is a combination of sanitary
400 flow, industrial flow, infiltration and stormwater runoff.

401 ARTICLE III BUILDING SEWERS AND CONNECTIONS

402 Section 1. Connection Permit

- 403 A) No unauthorized person shall uncover, make any connection with or opening into, use,
404 alter or disturb any wastewater sewer or storm sewer without first obtaining a written
405 permit from the Director. The application for such a permit will be made using standard
406 forms provided by the Director. The applicant will provide the Director with any additional
407 information he/she might reasonably require.
- 408 B) There shall be ___ classes of permits for connection to (n)_____’s wastewater system:
409 Class 1 (residential), Class 2 (commercial), Class 3 (institutional), Class 4 (industrial),
410 Class N (_____). A permit and inspection fee of \$_____ dollars for Class 1,
411 \$_____ for Class 2 users, \$_____ for Class 3 users, \$_____ for Class 4 users and
412 \$_____ Class N users shall be paid to (N)_____ at the time the application is filed.

413 Section 2. Connection Costs

414 The costs and expenses incidental to the building sewer installation and connection to
415 (N)_____’s wastewater system shall be borne by the owner. The owner shall indemnify
416 (N)_____ from any loss or damage that directly or indirectly may result from the installation of
417 the building sewer.

418 Section 3. Connection of New Premise

419 Unless prohibited or exempted by other provisions of this Ordinance, any person who develops
420 within the (N)_____ a property or structure which will produce any wastewater or stormwater
421 which must be disposed of, shall discharge such wastewater or stormwater into the (N)_____’s
422 system in compliance with this Ordinance and with all rules, regulations and specifications of the
423 (N)_____ as filed in the office of the _____ of the (N)_____.

424 Section 4. Connection of Existing System

425 Within ninety (90) days after a (n)_____ sanitary sewer becomes available to a property served
426 by an existing residential or non- residential wastewater system a direct connection shall be
427 made to the (n)_____ sewer in compliance with this Ordinance and with all rules, regulations
428 and specifications of the (n)_____ as filed in the office of the _____ of the (n)_____. A
429 sanitary sewer shall be considered available if it is within two hundred (200) feet of any legal
430 boundary of the property to be connected to the sewer and if the sewer and receiving treatment
431 plant can, by design, properly convey and treat the wastes to be discharged. Any septic tank,
432 cesspool, lagoon, or other residential, or non- residential wastewater treatment facility shall be
433 abandoned and filled with suitable material as per applicable (n)_____ Ordinances and/or
434 Commonwealth or local regulations or shall be removed unless such system is to be used for
435 pretreatment or control of wastewater prior to discharge to the (n)_____’s wastewater system.

436 Section 5. Non-(n)_____ System Required.

437 When connection to a (n)_____ sanitary sewer is prohibited by other provisions of this
438 Ordinance or when the Director determines that connection to a sanitary sewer is not feasible or
439 when a (n)_____ sanitary sewer is not available under the provisions of this Ordinance, the
440 building sewer shall be connected to a residential, or non-residential on-lot system complying

441 with the provisions of Act 537 (as amended) and with applicable local, Allegheny County,
442 Commonwealth and Federal regulations.

443 Section 6. Separate Connections Required

444 A separate and independent building sewer shall be provided for every building, except when
445 one building stands at the rear of another on an interior lot and no private sewers is available or
446 can be constructed to the rear building through an adjoining alley, court-yard or driveway. In
447 such cases, the building sewer serving the front building may be extended to the rear building
448 and the whole considered as one building sewer. (N)_____ assumes no obligation or
449 responsibility for damage caused by or resulting from any single building sewer that serves two
450 buildings.

451 Section 7. Existing Building Sewers

452 Existing building sewers may be used for connection of new buildings only when they are found,
453 after examination and test by the director to meet the requirements of new building sewers as
454 specified in this ordinance.

455 Section 8. Building Sewer Design

456 The size, slope, alignment, construction materials, trench excavation and backfill method, pipe
457 placement, jointing, and testing methods used in the construction of installation of a building
458 sewer shall conform to the building and plumbing code or to other applicable requirements of
459 (N)_____. In the absence of code provisions or in amplification thereof, the materials and
460 procedures set forth in appropriate specifications of the ASTM and WEF shall apply.

461 Section 9. Building Sewer Elevation

462 Whenever practical, the building sewer shall be brought to a building at an elevation below the
463 basement floor. In buildings in which any building drain is too low to permit gravity flow to the
464 (N)_____’s wastewater system, wastewater carried by such building drain shall be lifted by an
465 approved means and discharged to a building sewer draining into (N)_____’s wastewater
466 system.

467 Section 10. Surface Runoff and Groundwater Drains

- 468 A) No person shall connect roof, foundation, areaways, parking lot, roadway other surface
469 runoff or groundwater drains to any sanitary sewer unless such connection is authorized
470 in writing by the Director.
- 471 B) Except as provided in Section 7(a) above, roof , foundation, areaway, parking lot,
472 roadway or other surface runoff of groundwater drains shall discharge to natural outlets
473 or storm sewers.
474

475 Section 11. Conformance to Applicable Code

- 476
- 477 A) The connection of a building sewer into a wastewater sewer shall conform to the
478 requirements of the building and plumbing code or other applicable requirements to
479 (N)_____ or to the procedures set forth in appropriate specifications of the ASTM or
480 the WEF. The connections shall be made gas tight and watertight and verified by proper

testing. Any deviation from the prescribed procedures and materials must be approved in writing by the Director before installation.

B) The connection of a surface runoff or groundwater drain to a stormwater or natural outlet designed to transport surface runoff or groundwater drainage shall conform to the requirements of the applicable building code or other applicable requirements of the (N)_____. The connection of any such drain to a wastewater sewer under special permit as provided in section 7A of Article III shall conform to the requirements specified by the Director as a condition of approval of such permit.

Section 12. Connection Inspection

The applicant for a building sewer or private sewer connection permit shall notify the Director when such sewer or drainage connection is ready for inspection before its connection to the (N)_____'s wastewater system. Such connection and testing, shall conform with procedures set forth in applicable plumbing or building code or by ASTM or WEF. Connection and testing shall be made under the supervision of the Director or his/her representative.

Section 13. Excavation Guards and Property Restoration

Excavations for building sewer installation shall be adequately guarded with barricades and lights to protect the public from hazard. Streets, sidewalks, parkways, and other public property disturbed in the course of the work shall be restored in a manner satisfactory to the (N)_____.

Section 14. Protection of Capacity for Existing Users

The Director shall not issue a permit for any class of connection to the (N)_____'s wastewater system unless there is sufficient capacity not legally committed to other users in the wastewater system to convey and adequately treat the quantity of wastewater that the required connection will added to the system. The Director may permit such a connection if there are legally binding commitments to provide the needed capacity.

Section 15. Removal of Properties from Service

Upon the discontinuation of wastewater discharges from a building due to alteration or demolition, the building sewer shall be sealed water-tight at the point of connection to the wastewater system using a method approved by the Director. The Director shall be notified in writing as to the completion of this requirement.

ARTICLE IV BUILDING SEWER PERFORMANCE

Section 1. Maintenance of Building Sewer Performance

- A) Building sewers connected to (N)_____'s wastewater system shall be maintained in a water tight and gas tight condition that conforms to the standards applicable at the time of original construction.
- B) The Director may waive the above requirement if in his/her determination, a deterioration of the building sewer does not result in the discharge of excessive clear water into the wastewater system. The Director's determination will be based on factors such as local topographic and hydrologic conditions.

- C) If the Director determines that the performance standards applicable to a building sewer at the time of construction are inadequate to exclude excessive clear water from entering the wastewater system; the Director may require that building sewers be replaced or upgraded to provide levels of structural integrity beyond original construction standards.

Section 2. Building Sewer Inspections

The Director is granted the authority to periodically inspect building sewers and related appurtenances to verify compliance with this Ordinance.

- A) Owners of buildings connected to the (N)_____'s wastewater system will provide reasonable access to buildings and property to the Director or his/her representatives for the purpose of inspecting and testing the building sewer(s) and to inspect the premises for illicit connections of clear water sources. Such inspections may be carried out electronically through remote control video equipment inserted into building sewers, pressure testing, smoke or dye testing, or other non-destructive testing procedures selected by the Director.
- B) The (N)_____ shall hold property owners harmless for injuries to (N)_____'s employees or contractors and for loss or damage to equipment occurring during inspections. Provided, that such injuries or damage does not result from actions or negligence of the property owner.
- C) Property owners will be given a minimum of _____ days notice prior to inspections. Property owners shall be individually notified via mail or other means. The notification will include a description of the procedure, the reason for the procedure, a means to reasonably accommodate property owner schedules and other information determined desirable by the Director.
- D) At the discretion of the Director, (N)_____ may install inspection ports at the point of connection between the building sewer and the wastewater system.

The Director will provide the owner with written results of the inspection and identify specific actions required (if any) by the owner to come into compliance with this Ordinance.

Section 3. Building Sewer Repairs

Upon a determination that excessive clearwater is being discharged to the wastewater system, the owner shall within _____ days take the following steps as applicable:

- A) Repair or replace the building sewer.
- B) Disconnect sources of clearwater discharge to the wastewater system as identified by the Director or his/her representative.

The Director may allow additional time for the correction of excessive clearwater based upon a written schedule provided by the owner. Upon completion of repairs, the owner shall provide written certification that the building sewer complies with design standards. At the Director's discretion, (N)_____ may inspect the building sewer to ascertain compliance with this Ordinance.

558 Section 4. Surcharges for Discharge of Excessive Clearwater

- 559 A) The Director shall bill users whom have failed to remove or correct sources of excessive
560 clearwater within _____ days of notification a surcharge of \$_____ quarterly, ending
561 upon the Director's determination that the violation has been corrected.
- 562 B) The Director shall credit the surcharge to the user if the violation is corrected within a
563 written schedule provided by the owner and approved by the Director.

564 ARTICLE V - CONTROL OF POLLUTANT DISCHARGES TO (N)_____ 'S STORMWATER SYSTEM

565 Discharges to the (n)_____ 's separate storm sewers enter waters of the Commonwealth directly or after
566 conveyance through the (n)_____ 's system and are subject to NPDES permit regulations. All users shall
567 comply with the provisions of this article to ensure that discharges from the (n)_____ 's separate storm sewers
568 do not violate conditions of any of the (n)_____ 's NPDES permits or of any NPDES permit regulations,
569 including stormwater discharge regulations, or cause any violations of Commonwealth or Federal water quality
570 standards.

571 Section 1. Prohibited Discharges to the Stormwater System

- 572 A) No person shall discharge any wastewater treatment plant effluent, cooling water,
573 stormwater or unpolluted water into any separate storm sewer or watercourse unless
574 such discharge is authorized by an NPDES permit or is exempt from NPDES permit
575 regulations and is not otherwise prohibited by this Ordinance.
- 576 B) No person shall discharge or cause to be discharged into any separate storm sewer any
577 stormwater associated with industrial activity as defined in 40 CFR 122.26(b) unless the
578 discharge is in compliance with all applicable provisions of the NPDES stormwater
579 regulations in 40 CFR 122.26 and any applicable Commonwealth regulations and is in
580 compliance with the terms and conditions of any system- wide stormwater discharge
581 permit issued to the (n)_____ pursuant to those regulations.
- 582 C) No user shall initiate a significant new or increased discharge above the levels contained
583 in the authorization to discharge to any separate storm sewer or watercourse without first
584 complying with the reporting provisions of Article VIII, Section Six and until having
585 received approval from the Director subject to the provisions of Article VI, of this
586 Ordinance.
- 587 D) A user shall report to the Director, in accordance with the provisions of Article VIII,
588 Section Eight of this Ordinance, any problem discharges as defined in this Ordinance or
589 any other discharges to a separate storm sewer or watercourse that are not in
590 compliance with NPDES or (n)_____ permit conditions.

591 Section 2. Flow Obstruction Prohibited

- 592 A) No person shall place any dam or other flow restricting structure or device in any
593 drainage facility or watercourse without first having obtained approval from the Director.
- 594 B) No person shall place or deposit into any outfall, drainage facility, storm sewer or
595 watercourse within the (n)_____ any garbage, trash, yard waste, soil, rock or similar
596 material, or any other substance which obstructs flow in the system or damages the
597 system or interferes with the proper operation of the system or which constitutes a

598 nuisance or a hazard to the public. In the event that such an obstruction occurs, the
599 Director may cause such obstruction to be removed or cause such damage to be
600 repaired and to recover applicable costs pursuant to the provisions of Article IX, Section
601 Six of this Ordinance.

602 ARTICLE VI CONTROL OF POLLUTANT TO THE WASTEWATER SYSTEM

603 Pollutants which are discharged to the (n)_____ 's wastewater system enter waters of the Commonwealth from
604 (N)_____ or downstream system treatment plant outfalls or combined sewer overflow outfalls after
605 conveyance through the (n)_____ 's wastewater system and are therefore subject to NPDES permit
606 regulations. All users of the system shall comply with the prohibitions and standards of this article to ensure
607 that discharges originating in (N)_____ 's service area do not cause a violation of the conditions of
608 (n)_____ 's or Downstream system NPDES permits, or cause any violations of Commonwealth or Federal
609 water quality standards.

610 Section 1. Prohibited Substances

611 No person shall introduce or cause to be introduced, directly or indirectly into any sanitary or
612 combined sewer any of the following substances:

- 613 A) Any substance, including clear water, in a quantity or concentration which will interfere
614 with or adversely affect the operation or performance of the POTW, or pass through the
615 POTW into the waters of the Commonwealth of Pennsylvania and causes, alone or in
616 conjunction with other discharges, a violation of any requirement of the POTW's NPDES
617 permit, or adversely affect the use or disposal of the POTW's sludge.
- 618 B) Ignitable Waste. A waste or substance which can create a fire hazard in the POTW
619 which has any of but is not limited to the following properties:
620
621 1, It is a liquid with a flash point less than 60 degrees C (140 degrees F) using the
622 test methods specified in 40 CFR 261.21.
623
624 2. It is an oxidizer as defined in 49 CFR 173.151.
- 625 C) Reactive/Explosive Waste. A waste or substance which can create an explosion hazard
626 in the POTW which has any of but is not limited to the following properties:
627
628 1) It is normally unstable and readily undergoes violent change without detonating.
629
630 2) It reacts violently with water.
631
632 3) It forms potentially explosive mixtures with water.
633
634 4) When mixed with water, it generates toxic gases, vapors, or fumes in a quantity
635 sufficient to present a danger to human health or the environment.
636
637 5) It is a cyanide or sulfide bearing waste which can generate toxic gases, vapors, or
638 fumes in a quantity sufficient to present a danger to human health or the
639 environment.
640
641 6) it is capable of detonation or explosive reaction if it is subjected to a strong
642 initiating source or if heated under confinement.

- 637 7) It is readily capable of detonation, explosive decomposition or reaction at
638 standard temperature and pressure. 676
- 639 8) It is a forbidden explosive as defined in 49 CFR 173.51, or a Class A explosive as
640 defined in 49 CFR 173.53 or a Class B explosive as defined in 49 CFR 173.88. 677
- 641 D) Corrosive Waste. A waste or substance which has any of the following properties: 678
- 642 1) It is aqueous and has a pH less than or equal to 5 or greater than or equal to 10,
643 as determined by a pH meter. 679
- 644 2) It is a liquid and corrodes steel (SAE 1020) at a rate greater than 6.35 mm (0.250
645 inch) per year at a test temperature of 55°C (130°F). 680
- 646 E) Hazardous Waste. All wastes that are defined as hazardous under the regulations
647 enacted pursuant to the Resource Conservation and Recovery Act (RCRA) as specified
648 in 40 CFR 261 or under the regulations promulgated pursuant to the Pennsylvania Solid
649 Waste Management Act as specified in 25 PA Code 261, except as provided for in these
650 regulations. 681
- 651 F) Thermal Waste. Any wastewater with a temperature greater than 60°C (140°F). Also,
652 heat in the amounts which will inhibit biological activity in the POTW resulting in
653 interference, but in no case heat in such quantities that the temperature at the POTW
654 treatment plant exceeds 27°C (80°F). 682
- 655 G) Radioactive Waste. Any waste which exceeds the naturally occurring background levels
656 for either alpha, beta, or gamma radiation and/or any wastewater containing any
657 radioactive wastes or isotopes of such half life or concentration not in compliance with
658 applicable State or Federal regulations. 683
- 659 H) Any solids or any substances that will solidify or become discernibly viscous at
660 temperatures between 32 and 150 degrees Fahrenheit (0 and 65 degrees Celsius) or
661 any other substances in quantities capable of causing obstruction to flow within the
662 (n)_____ wastewater system or Downstream systems, including any obstruction within
663 the combined sewer system which causes or contributes to a combined sewer overflow. 684
- 664 I) Malodorous/Noxious Substances. Any pollutants or noxious or malodorous liquids,
665 gases, or solids which either singly or by interaction with other wastes: 685
- 666 1) result in the presence of toxic gases, vapors, or fumes in a quantity that may cause
667 acute worker health and safety problems; or 686
- 668 2) are sufficient to create a public nuisance or hazard to life or are sufficient to
669 prevent entry into the sewers for maintenance and repair. 687
- 670 J) Any pollutant, including oxygen demanding pollutants (BOD, etc.) released in a discharge
671 at a flow rate and/or pollutant concentration which will cause Interference with the
672 POTW. 688
- 673 K) Any substance which will cause the POTW's effluent or any other product of the POTW
674 such as residues, sludges, or scums, to be unsuitable for reclamation processes,
675 including any substance which will cause the POTW to be in noncompliance with sludge 689

use or disposal criteria, guidelines, or regulations developed under Section 405 of the Act, any criteria, guidelines, or regulations promulgated pursuant to the Solid Waste Disposal Act, the Clean Air Act, the Toxic Substances Control Act or State laws or regulations applicable to the treatment or disposal of such effluent or such product.

- L) Any petroleum based oil or grease, nonbiodegradable cutting oil or product of mineral oil origin except those which unavoidably enter the user's waste stream as a normal constituent of wastewater from processes or equipment which use or process such materials or through contact with areas contaminated with such materials. In no case may such materials be discharged in quantities or concentrations which will cause interference or pass through. 690
- M) Any garbage containing particles larger than one-half inch in any dimension or particles which will not be carried freely under the flow conditions of the sewer. 691
- N) Any water or waste which by itself or by interaction with other materials, emits toxic gases, vapors or fumes into the atmosphere of any area of the wastewater system at levels in excess of Threshold Limit Values (TLV) established for air-borne contaminants by the American Conference of Governmental Industrial Hygienists (ACGIH) or the Occupational Safety and Health Administration (OSHA). 692
- O) Any trucked or hauled wastes except as authorized by (n)_____ and Downstream systems, and in compliance with the provisions of this Ordinance. In no case may trucked or hauled wastes include any hazardous wastes as defined in 40 CFR Part 261. 693
- P) Any wastes which are highly colored, such as, but not limited to concentrated dye wastes, tannin or spent tanning solutions at concentrations which cause discoloration of (n)_____ equipment or which cause the effluent from the (n)_____ 's plant to have an objectionable color. 694
- Q) Any infectious wastes, except those wastes which are authorized for disposal into sanitary sewers under Commonwealth regulations or more stringent local regulations. 695
- R) Any substance in quantities which either alone or in combination with other wastes results in the formation within the wastewater system of any malodor, foam, or other condition which is capable of creating a public nuisance or hazard to life or interferes with operation and maintenance of the system. 696
- S) If any item in this Section are in conflict with the requirements of a Downstream System, the more stringent requirements shall prevail. 697

709 Section 2. Discharge Limitations.

The limitations for quantities and/or concentrations of pollutants contained in this section apply to all users who discharge to the (n)_____ 's wastewater system.

- A) National Categorical Pretreatment Standards
- Certain Industrial Users are now or hereafter shall become subject to National Categorical Pretreatment Standards promulgated by the EPA specifying quantities or concentrations of pollutants or pollutant properties which may be discharged into the POTW. Each Industrial User subject to a National Categorical Pretreatment Standard

shall comply with all requirements of such standard, and shall also comply with any additional or more stringent limitations contained in these regulations unless modified pursuant to these regulations. Compliance with National Categorical Pretreatment Standards for existing sources subject to such standards or for existing sources which hereafter become subject to such standards shall be within three (3) years following promulgation of such standards, unless a shorter compliance time is specified in the standard. Compliance with National Categorical Pretreatment Standards for new sources shall be upon promulgation of the standard. Compliance with National Categorical Pretreatment Standards is required whether or not the Industrial User has been issued a permit or that permit has been revised pursuant to section 4.2.4 of these regulations. For the purpose of implementing and enforcing the provisions of this section, the National Categorical Standards, found in 40 CFR Chapter I, Subchapter N, parts 405-471, are hereby incorporated into these regulations and made a part thereof.

B) Notice of National Categorical Pretreatment Standards and Other Requirements

Upon the promulgation of National Categorical Pretreatment Standards for a particular industrial subcategory, the Director shall notify all affected Users of such promulgation and of the applicable reporting requirements under 40 CFR 403.12. The Director shall also notify affected Users of any other applicable standards or requirements under sections 204(b) and 405 of the Act and subtitles C and D of the Resource Conservation and Recovery Act.

C) Specific Pollutant Limits

No User shall discharge wastewater containing concentrations of pollutants in excess of those contained in the standards listed below unless (a) an exception has been granted to the User under the provisions of Section 5 of these regulations or (b) the wastewater permit issued to such User pursuant to Section 4 infra provides, as a special permit condition, a higher interim concentration level in conjunction with a requirement that such User construct a pretreatment facility or institute changes in its operation and maintenance procedures to reduce the concentration of pollutants to levels not exceeding the standards set forth in the table within a fixed period of time. Interim limits shall be established in accordance with the requirements of section 5 of these regulations pertaining to Modifications to Standards and Requirements. The 121 specific pollutant limitations are divided into the following 5 classifications:

- Metals (13);
- Organics (81);
- Restricted Pollutants (23);
- Pass Through Protection Level (2); and
- Miscellaneous (2).

The limitations represent a maximum instantaneous concentration. Periodically, the specific pollutant concentration limitations may be changed because of new health effects studies, water quality reports, or other adjustments to federal or state criteria or regulations.

SPECIFIC POLLUTANT LIMITATIONS

METALS

Priority Pollutant	Concentration Limitation (ug/l-unless otherwise noted)	TAIL (lb/day)
Cadmium (Total)	0.4 mg/l	40.8
Chromium (Total)	13.6 mg/l	1,389.0
Copper (Total)	10.4 mg/l	1,062.2
Lead (Total)	13.2 mg/l	1,348.2
Nickel (Total)	8.0 mg/l	817.1
Zinc (Total)	12.5 mg/l	1,276.7
Antimony (Total)	780	79.7
Arsenic (Total)	830	84.8
Beryllium (Total)	30	3.1
Mercury (Total)	90	9.2
Selenium (Total)	47	4.8
Silver (Total)	700	71.5
Thallium (Total)	50	5.1

PASS THROUGH PROTECTION LEVEL

Cyanide (Total)	1.5 mg/l	153.2
Phenols (Total)	60 mg/l	6,128.0

MISCELLANEOUS

Oil and Grease	200 mg/l	20,426.6
Asbestos (fibrous)	3 fibers/ml	

ORGANICS

	Concentrations Limitation (ug/l-unless otherwise noted)	TAIL (lb/day)

783 Total Toxic Organics (TTO) 5.0 mg/l 510.7

784 The term "TTO" shall mean total toxic organics which is the summation of all quantifiable values greater than
785 0.01 milligrams per liter for the following 81 organic compounds.

786	Cmpound	CAS Number
787	Acenaphthene	83-32-9
788	Acenaphthylene	208-96-8
789	Acrolein	107-02-8
790	Acrylonitrile	107-13-1
791	Anthracene	120-12-7
792	Benzo (a) Pyrene	50-32-8
793	Benzo (a) anthracene	56-55-3
794	Benzo (ghi) perylene	191-24-2
795	Benzo (k) fluoroanthene	207-08-9
796	3,4-Benzofluoroanthene	205-99-2
797	Bis (2-Chloroethoxy) Methane	111-91-1
798	Bis (2-Chloroethyl) Ether	111-44-4
799	Bis (2-Chloroisopropyl) Ether	108-60-1
800	Bis (2-Ethylhexyl) Phthalate	117-81-7
801	Bromoform	75-25-2
802	4-Bromophenyl Phenyl Ether	101-55-3
803	Butyl Benzyl Phthalate	85-68-7
804	Carbon Tetrachloride	56-23-5
805	Chlorobenzene	108-90-7
806	Clorodibromomethane	124-48-1
807	Chloroethane	75-00-3
808	2-Chloroethyl Vinyl Ether (Mixed)	110-75-8
809	Chloroform	67-66-3
810	2-Chloronaphthalene	91-58-7
811	2-Chlorophenol	95-57-8
812	4-Chlorophenyl Phenyl Ether	7005-72-3
813	Chrysene	218-01-9
814	Di-n-butyl Phthalate	84-74-2
815	Di-n-octyl Phthalate	117-81-7
816	Dibenzo (a,h) anthracene	53-70-3
817	1,2-Dichlorobenzene	95-50-1
818	1,4-Dichlorobenzene	106-46-7
819	1,3-Dichlorobenzene	541-73-1
820	3,3-Dichlorobenzidine	91-94-1
821	Dichlorobromomethane	75-27-4
822	1,1-Dichloroethane	75-34-3
823	1,2-Dichloroethane	107-06-2
824	1,1-Dichloroethylene	75-35-4
825	2,4-Dichlorophenol	120-83-2
826	1,2-Dichloropropane	78-87-5
827	1,3-Dichloropropylene	542-75-6
828	Diethyl Phthalate	84-66-2
829	Dimethyl Phthalate	131-11-3
830	2,4-Dimethylphenol	105-67-9
831	4,6-Dinitro-o-cresol	534-52-1

832	2,4-Dinitrophenol	51-28-5
833	2,4-Dinitrotoluene	121-14-2
834	2,6-Dinitrotoluene	606-20-2
835	1,2-Diphenolhydrazine	122-66-7
836	Ethylbenzene	100-41-4

837	Compound	CAS Number
838	Fluorene	86-73-7
839	Fluoroanthene	206-44-0
840	Hexachlorobenzene	118-74-1
841	Hexachlorobutadine	87-68-3
842	Hexachlorocyclopentadiene	77-47-4
843	Hexachloroethane	67-72-1
844	Indeno (1,2,3-c-d) Pyrene	193-39-5
845	Isophorone	78-59-1
846	Methyl Chloride	74-87-3
847	Methyl Bromide	74-83-9
848	Methylene Chloride	75-09-2
849	n-Nitrosodi-n-propylamine	621-64-7
850	n-Nitrosodimethylamine	62-75-9
851	n-Nitrosodiphenylamine	86-30-6
852	Naphthalene	91-20-3
853	Nitrobenzene	98-95-3
854	4-Nitrophenol	100-02-7
855	2-Nitrophenol	88-75-7
856	p-Chloro-m-cresol	59-50-7
857	Pentachlorophenol	87-86-5
858	Phenanthrene	85-01-8
859	Pyrene	129-00-0
860	1,1,2,2-Tetrachloroethane	79-34-5
861	Tetrachloroethylene	127-18-4
862	1,2-Trans-dichloroethylene	156-60-5
863	1,2,4-Trichlorobenzene	120-82-1
864	1,1,1-Trichloroethane	71-55-6
865	1,1,2-Trichloroethane	79-00-5
866	Trichloroethylene	79-01-6
867	2,4,6-Trichlorophenol	88-06-2
868	Vinyl Chloride	75-01-4

869 **Restricted Pollutants**

870	Priority Pollutant	Concentration Limitation (ug/l-unless otherwise noted)	TAIL (lb/day)
871			
872	Aldrin	0.004	
873	Alpha-BHC	0.003	
874	Beta-BHC	0.006	
875	Benzene	125	12.8
876	Benzidine	0.08	
877	Delta-BHC	0.009	
878	Gamma-BHC (Lindane)	4	

879	Chlordane	0.014	
880	4,4'-DDD (p,p'TDE)	0.011	
881	4,4'-DDE (p,p'DDX)	0.004	
882	4,4'-DDT	0.012	
883	Dieldrin	0.002	
884	Alpha-endosulfan	0.014	
885	Beta-endosulfan	0.004	
886	Priority Pollutant	Concentration Limitation	TAIL
887		(ug/l-unless otherwise noted)	(lb/day)
888	Endosulfan Sulfate	0.066	
889	Endrin	0.2	
890	Endrin Aldehyde	0.023	
891	Heptachlor	0.003	
892	Heptachlor Epoxide	0.083	
893	Polychlorinated Biphenyls	50	
894	(PCB)		
895	2,3,7,8 Tetrachlorodibenzo	0.003	
896	p-dioxin		
897	Toluene	225	23.0
898	Toxaphene	5	

D) More Restrictive Standards:

The Director shall establish limits on the volume and concentration of contributions from users which are more strict than those specified in this Section when the Director determines such action is necessary to ensure that the aggregate discharges to the sewers tributary to any segment of the (n)_____ 's wastewater system or in Downstream systems do not cause:

- (1) Interference or pass through,
- (2) Violations of the (n)_____ 's or Downstream Systems' NPDES permit conditions,
- (3) Violations of any Allegheny County, Commonwealth or Federal water quality standards,
- (4) Danger to life, limb or property,
- (5) Local nuisance conditions, or
- (6) Air emissions or any other environmental releases from the (n)_____ 's or Downstream systems in excess of the limits and requirements of applicable Commonwealth, Federal and local regulations. When the Director determines it is necessary to establish more strict limits under the provisions of this subsection, the Director shall advise the users affected by the change and shall require the users to develop within a reasonable period of time, compliance schedules or management plans or to take such other action as may be necessary to achieve the goals of this subsection.

If any item in this Section are in conflict with the requirements of a Downstream System, the more stringent requirements shall prevail.

Section 3. Restrictions

- A) New or Increased Discharges. A user shall not initiate a significant new or increased discharge without first complying with the reporting provisions of Article VIII, Section Six and until having received approval from the Director subject to the provisions of Article VI, of this Ordinance.
- B) Upsets. In the event of an upset, as defined in this Ordinance, the user shall take all feasible steps to control production or discharges so as to minimize the extent or duration of any noncompliance until the condition causing the upset is mitigated or an alternative method of maintaining compliance approved by the Director is provided. The user shall also comply with the reporting requirements of Article VIII, Section Eight of this Ordinance.
- C) Dilution Prohibited. Except where expressly authorized to do so by an applicable categorical pretreatment standard or requirement, no user shall increase the use of potable or process water in any way for the purpose of diluting a discharge as a partial or complete substitute for pretreatment required to comply with the provisions of this Ordinance.
- D) Bypassing. No industrial user may bypass any portion of its pretreatment facilities except when necessary to perform essential maintenance and then only if the bypass will not result in a violation of applicable pretreatment standards or requirements. Any other pretreatment facility bypass is prohibited unless:
 - (1) The bypass is unavoidable to prevent loss of life, personal injury or severe property damage;
 - (2) There are no feasible alternatives to the bypass; and
 - (3) In the event of an anticipated bypass, advance notice is provided to the Director. Any pretreatment facility bypass shall be reported to the Director in accordance with the provisions of Article VIII, Section Eight of this Ordinance.
- E) Prohibited Discharges to Sanitary Sewers: No person shall discharge or cause to be discharged into any sanitary sewer any:
 - (1) Stormwater, surface water, or groundwater,
 - (2) Roof runoff,
 - (3) Cooling water which is from a non-contact once-through operation and which is not treated prior to or during use, or
 - (4) Unpolluted water, except that:
 - (a) any water listed above which contains pollutants regulated by this Ordinance may be discharged when approved by the Director subject to any pretreatment, flow control or other control measures and monitoring procedures as determined by the Director, and,
 - (b) small volumes of otherwise excluded cooling water may be discharged provided such discharge does not violate any other provisions of this Ordinance.
- F) Open Connections Prohibited. No person constructing or repairing a sanitary sewer, or any building sewer connected to a sanitary sewer shall leave such sewer open, unsealed, or incomplete in a manner which will permit stormwater, groundwater, or

964 surface water to enter any (n)_____ sanitary sewer. All such openings shall be tightly
965 sealed at all points whenever work is not actually in progress on such sewer or
966 connection.

967 **ARTICLE VII AUTHORITY TO PROHIBIT OR REGULATE DISCHARGES**

968 **Section 1. Control Alternatives**

969 A) If any wastewater or stormwater is discharged or is proposed to be discharged into the
970 (n)_____ 's wastewater system, the Director, in order to ensure compliance with the
971 provisions of this Ordinance or with Allegheny County, Commonwealth or federal
972 regulations, may take one or more of the following actions:

- 973 1) Prohibit the discharge,
- 974 2) Require pretreatment to a condition acceptable for discharge into the wastewater
975 system,
- 976 3) Require treatment to a condition acceptable for discharge into a separate storm
977 sewer, drainage facility or watercourse.
- 978 4) Require controls on the quantities and rates of discharge,
- 979 5) Require payment to cover added costs of handling and treating the wastes not
980 covered by existing fees or user charges,
- 981 6) Require the development of compliance schedules for meeting any applicable
982 treatment or pretreatment standard, or stormwater discharge standard or any
983 requirement of this Ordinance,
- 984 7) Require the submission of reports necessary to assure compliance with any
985 applicable treatment or pretreatment standard, or stormwater discharge standard,
986 or any requirement of this Ordinance,
- 987 8) Require the user to obtain a discharge permit from the (n)_____.
- 988 9) Carry out all inspections, surveillance, and monitoring necessary to determine
989 compliance with any applicable treatment or pretreatment standard, stormwater
990 discharge standard or any requirement of this Ordinance,
- 991 10) Require submission of management plans for the control of accidental discharges
992 or slug discharges,
- 993 11) Require submission of management plans to control pollutants entering the
994 wastewater and/or separate stormwater system,
- 995 12) Require sampling and analysis of discharges and reporting of the results,
- 996 13) Seek remedies for noncompliance by any user as provided in Article IX of this
997 Ordinance, and/or
- 998 14) Terminate service.

999 B) When considering the above alternatives, the Director shall ensure that the (n)_____ is
1000 in compliance with all Allegheny County, Commonwealth and Federal requirements and
1001 limitations. The Director shall also take into consideration the cost effectiveness,
1002 economic impact of each alternative on the user and the (n)_____, and any other
1003 factors relevant to the situation.

1004 **Section 2. Variances**

1005 A) Categorical Pretreatment Standards: Requests for variances from categorical
1006 pretreatment standards shall be made to the Downstream System treating (N)_____ 's
1007 wastewater and to the Pennsylvania Department of Environmental Protection (PaDEP) in
1008 accordance with the provisions of 40 CFR 403.13. One copy of such a variance

1009 application and its supporting documentation shall be provided to the Director no later
1010 than the date of submittal to the Downstream System and PaDEP.

1011 B) (N)_____ Standards: Requests for variances from the (N)_____ 's limitations or
1012 requirements contained in this Ordinance shall be made in writing to the Director on a
1013 form provided by the Director. The Director may approve or deny a variance application
1014 in full or in part and shall set time limits for the duration of the variance. No variance may
1015 be approved for a time period longer than three (3) years. No variances will be
1016 approved by the Director without the written concurrence of applicable Downstream
1017 Systems.

1018 Variances shall contain such conditions as the Director determines necessary to ensure
1019 compliance with this Ordinance and with any Commonwealth or Federal regulations. The
1020 Director will notify the applicant in writing of his decision within sixty (60) days of receipt
1021 of a completed application. Variances from (n)_____ standards may be approved only
1022 where: (1) The alternative limit is no less stringent than justified by the factors presented
1023 for consideration; and (2) The alternative limit will not result in a violation of the
1024 prohibitions in Article V, Section One; and (3) The alternative limit will not result in an
1025 adverse non- water quality environmental impact; and (4) The alternative limit will not
1026 violate any applicable Commonwealth, Federal, Allegheny County or Downstream
1027 System regulations; and (5) Compliance with the standard would result in either (a) a
1028 removal cost that can not be justified for the size and/or nature of the discharge, or (b) an
1029 adverse non-water quality environmental impact.

1030 C) Hauled Wastes: When a variance from a (n)_____ limitation is sought for discharge of a
1031 hauled waste subject to the provisions of applicable (n)_____ Ordinances, the Director
1032 may approve or deny the request solely on the basis of the information contained in the
1033 application for special discharge and an analysis of the waste to be hauled using the
1034 criteria in subsection B above.

1035 D) Variance Modification or Revocation: The Director may revoke a variance after thirty (30)
1036 days notice to the user for cause including, but not limited to, the following causes: (1) A
1037 violation of any term or condition of the variance. (2) A misrepresentation or failure to fully
1038 disclose all relevant facts in obtaining a variance. (3) A determination by the Director
1039 based upon additional information, that a variance is no longer appropriate. The Director
1040 may modify a variance after thirty (30) days notice to the user following a determination
1041 by the Director that the circumstances under which the variance was granted have
1042 changed and a modification is necessary to ensure compliance with the conditions stated
1043 in subsection B of this Section.

1044 **Section 3. Discharge Permits**

1045 A) Permit Required: The Director may require that a user obtain a permit to discharge into
1046 the (n)_____ 's wastewater system or stormwater system. Such judgment shall be made
1047 based upon data contained in the User Questionnaire or in other reports required
1048 pursuant to Article VIII of this ordinance or resulting from sampling or investigations
1049 performed by the (n)_____ or as required by Commonwealth or Federal regulations.

1050 1) Within 60 days of being notified by the Director that a permit is required, the user
1051 shall submit a permit application on a form provided by the Director complete with
1052 all supplementary information as specified on the application form and as
1053 specified in the Director's notification. The Director shall promptly review the

1054 application and shall advise the applicant of any deficiencies. The Director shall
1055 issue or deny the permit within 90 days of receipt of a complete application,
1056 including all supplementary information required. Should the applicant fail to
1057 correct application deficiencies within a reasonable period of time, the Director
1058 may proceed to issue or deny the permit within 90 days of his last request for
1059 information.

1060 2) Any user who has been issued a discharge permit shall apply for renewal of that
1061 permit at least 180 days prior to the expiration date contained therein. The
1062 (n)_____ shall process permit renewal applications on the same basis as a first
1063 time application. Any user who fails to submit a timely application for permit
1064 renewal will be subject to enforcement action as provided in Article IX of this
1065 ordinance. 3. No user who has been required to submit a permit application may
1066 continue to discharge into the (n)_____ 's system after the date of a permit
1067 denial. 4. The terms and conditions of a permit are automatically continued past
1068 its expiration date and remain fully enforceable pending issuance of a new permit
1069 if: (a) The permittee has submitted a timely and sufficient application for renewal;
1070 and (b) The (n)_____ is unable, through no fault of the permittee, to issue a new
1071 permit before the expiration date of the previous permit; and © The permittee is
1072 not in significant noncompliance with the terms and conditions of the previous
1073 permit on its expiration date.

1074 3) The Director will not approve any permit prior to receiving evidence that
1075 Downstream Systems have issued applicable permits.

1076 B) Change in or Termination of Discharge:

1077 1) A permittee shall not significantly increase the average daily volume, or flow rate
1078 of discharge or add any significant new pollutants or significantly increase the
1079 discharge of existing pollutants set forth in a permit without first having secured
1080 an amendment to the permit unless the permit conditions authorize such increase
1081 or additions without an amendment. A permittee shall notify the Director of any
1082 proposed significant new or increased discharge in accordance with the
1083 provisions of Article VIII, Section Six. If required by the Director, the permittee
1084 shall submit a new permit application for the discharge and shall not commence
1085 the new or increased discharge until a revised permit has been issued.

1086 2) Whenever any discharge covered by a permit is permanently eliminated, the
1087 existing permit will be terminated or modified upon verification by the Director.

1088 C) Permits not Transferrable:

1089 A permit may not be transferred or reassigned. When a property covered by a discharge
1090 permit is sold or otherwise transferred to a new owner, the new owner shall apply for a
1091 new permit at least ten (10) days prior to the transfer and shall agree to abide by all of
1092 the conditions and terms of the previous owner's permit until the Director issues a new
1093 permit or denies the application.

1094 D) Permit Conditions:

1095 The Director shall include conditions and terms in each permit to ensure compliance with
1096 the provisions of this Ordinance and with applicable federal, Commonwealth, Allegheny

1097 County and downstream municipality regulations. Conditions may include, but are not
1098 limited to:

- 1099 1) Limits on rate, time, and characteristics of discharge or requirements for flow
1100 regulation and equalization;
- 1101 2) Installation and maintenance of inspection, flow measurement, and sampling
1102 facilities, including access to such facilities;
- 1103 3) Specifications for monitoring programs which may include flow measurement,
1104 sampling, chemical and biological tests, recording of data, and reporting
1105 schedule;
- 1106 4) Treatment or pretreatment standards and requirements;
- 1107 5) Schedules for development and/or implementation of management plans,
1108 drawings and specifications, construction of necessary facilities or process
1109 changes, including schedules for reporting progress toward meeting these
1110 requirements;
- 1111 6) Submission of self-monitoring reports and other reports as required pursuant to
1112 this Ordinance;
- 1113 7) Effective date and termination date. No permit will be issued for a time period
1114 longer than five (5) years.
- 1115 8) Special service charges or fees pursuant to applicable Ordinances;
- 1116 9) Any other conditions to ensure compliance with this Ordinance and with
1117 applicable requirements of Commonwealth and Federal regulations.
- 1118 10) Authority to revoke for cause.

1119 E) Permit Modification or Revocation: The Director may revoke a permit after thirty (30) days
1120 notice to the user for cause including, but not limited to, the following causes: (1) A
1121 violation of any term or condition of the permit. (2) A misrepresentation or failure to fully
1122 disclose all relevant facts in obtaining a permit. The Director may modify a permit after
1123 thirty (30) days notice to the user following promulgation of new Commonwealth, Federal
1124 or local regulations to ensure compliance with the effective dates contained in any such
1125 new regulations.

1126 Section 4. Special Agreements

- 1127 1) When necessary to provide for proper treatment of wastewater or stormwater, the
1128 Director may enter into special agreements or arrangements with a user to accept
1129 wastewater or stormwater into the (n)_____ 's system at other than the usual discharge
1130 points or to accept wastewater or stormwater of unusual strength or character for special
1131 treatment, subject to any special discharge conditions or payments or user charges as
1132 may be applicable.
- 1133 2) Such agreements between the Director and a user will be conditional, where applicable,
1134 on the user's compliance with Downstream System requirements.

1135 ARTICLE VIII TREATMENT, PRETREATMENT AND DISCHARGE CONTROL FACILITIES

1136 Section 1. Facilities Required

1137 Treatment, pretreatment or discharge control facilities shall be provided for discharges to the
1138 (n)_____’s system when required by Commonwealth or Federal, Allegheny County or
1139 Downstream System regulations or when, in the judgement of the Director, such facilities are
1140 necessary to ensure compliance with the provisions of Articles III through VI of this Ordinance or
1141 for the control of pollutants which are contained or may be contained in any of the user’s
1142 discharges or for the prevention or control of slug discharges or spills. All such facilities shall be
1143 located so as to be readily accessible for maintenance and inspection.

1144 Section 2. Interceptors and Traps

- 1145 A) Interceptors or traps for oil, grease, grit, or other harmful or flammable substances which
1146 can be trapped, shall be provided when required by the Director. Such interceptors or
1147 traps shall not be required for private dwelling units. Degreasers, enzymes and similar
1148 substances which act to temporarily emulsify or suspend oil or grease shall not be
1149 introduced into any trap designed to capture and retain oil and grease.
- 1150 B) All traps shall be maintained in a manner which prevents the trapped substances from
1151 being discharged into the wastewater system, stormwater system, or any watercourse.
- 1152 C) Users required to install interceptors and traps will, at time of application for service,
1153 specify the anticipated frequency of the removal of trapped and intercepted materials as
1154 well as the basis of the anticipated frequency. The user shall document compliance with
1155 this schedule through copies of hauler manifests or other documentation acceptable to
1156 the Director no less than annually. Cleanout frequencies may be altered to meet
1157 changing conditions upon written approval of the Director.

1158 Section 3. Spill Containment

1159 Spill containment facilities shall be provided when required by Federal, Commonwealth,
1160 Allegheny County or Downstream System regulations or when, in the judgement of the Director,
1161 such facilities are necessary for the containment of any raw materials, products, wastes or other
1162 potential pollutants used or stored on the user’s premises in such locations that a spill of the
1163 material may enter into the (n)_____’s system or a watercourse and cause interference or pass
1164 through or cause violations of the (n)_____’s NPDES permit or cause violations of
1165 Commonwealth or Federal water quality standards.

1166 Section 4. Stormwater Treatment Facilities

1167 Stormwater treatment or control facilities shall be provided when required by Commonwealth or
1168 Federal regulations or when, in the judgement of the Director, such facilities are necessary for
1169 the treatment or control of stormwater which has or may come into contact with any raw
1170 materials, products, wastes or other potential pollutants used or stored on the user’s premises in
1171 such locations that stormwater flowing through or running off the user’s premises may contact
1172 such materials and may convey pollutants therefrom into the (n)_____’s system or a
1173 watercourse and cause interference or pass through or cause violations of the (n)_____’s
1174 NPDES permit or cause violations of Commonwealth or Federal water quality standards.

1175 Section 5. Drawings and Specifications

1176 Drawings, specifications, and any other pertinent engineering data relating to proposed
1177 wastewater treatment or pretreatment facilities, holding tanks, grease, oil and grit interceptors,
1178 spill control or containment facilities or other facilities to be utilized in the treatment,
1179 pretreatment, or control of wastewater or stormwater discharged to any sewer or watercourse
1180 within the (n)_____, shall be submitted to the Director for approval. All plans and specifications
1181 shall be prepared by a registered professional engineer, licensed in the Commonwealth of
1182 Pennsylvania, except this requirement may be waived on a case by case basis by the Director
1183 for facilities which will not become part of the system owned or operated by the (n)_____.
1184 Construction of facilities shall not be started until said drawings and specifications have been
1185 approved by the Director through issuance of a construction permit or other written approval.

1186 Section 6. Construction Approvals

1187 A) Construction Permit:

1188 Before starting construction of any residential, or non-residential building sewer, on-lot
1189 wastewater system, treatment facility, or drainage facility or any connection to the
1190 (n)_____’s system, the owner thereof shall first obtain a construction permit from the
1191 Director. The application for such permit shall be made on a form furnished by the
1192 Director. Fees for plan review, connection, permits and inspections shall be paid to the
1193 (n)_____ in accordance with applicable Ordinances. The Director shall either issue or
1194 deny the requested permit within 90 days after submittal of the application.

1195 B) Construction Approval:

1196 Before starting construction of any pretreatment facility or any other facility not included
1197 under Subsection A of this Section for the control of wastewater or stormwater
1198 discharges or for spill control or containment, the user shall first obtain written approval
1199 from the Director. The Director shall either approve or reject a pretreatment or other
1200 facility design within 90 days after its submittal.

1201 C) Approval of the Director shall not relieve the applicant of responsibility for obtaining all
1202 applicable permits from Federal, Commonwealth, Allegheny County or Downstream
1203 System agencies.

1204 Section 7. Construction Inspections

1205 The Director shall have the right to inspect the work at any stage of construction of any facility
1206 required pursuant to Section One of this Article, or any connection to the (n)_____’s system.
1207 The owner or contractor shall notify the Director before any underground portions are covered,
1208 and when the work is ready for final inspection. Inspections shall be made within two (2) working
1209 days following receipt of such notice by the Director unless the owner or contractor agrees to a
1210 later time for the inspection.

1211 Section 8. Accidental Discharge Management

- 1212 A) Each user shall provide protection from accidental discharge or slug discharges of any
1213 substance in violation of these regulations or of applicable federal, Commonwealth,
1214 Allegheny County or Downstream system laws or regulation. Facilities to prevent such
1215

accidental prohibited discharges or slug discharge shall be provided and maintained at the user's expense.

B) In the case of any accidental prohibited discharge or sludge discharge, it shall be the responsibility of the user to immediately notify (N)_____ and the applicable Downstream System by telephone of the incident. The notification shall include the location of the discharge, type of waste, concentration and volume and corrective actions taken.

C) Emergency notification procedures shall be permanently posted by the user on bulletin boards or in other prominent places advising employees whom to call in the event of an upset, accidental discharge or slug discharge. At a minimum, notification shall be made to the (n)_____ 's emergency response number and Downstream System(s)' emergency response numbers as applicable. Other agencies shall be notified as per applicable laws and regulations. Users shall make certain that all employees who may be in a position to cause or observe such incidents are advised of the emergency notification procedures. Section Eleven - Local Approvals. Users who are required to construct or operate facilities under the provisions of this Ordinance may be subject to local health and building codes. It is the user's responsibility to ensure that all such requirements are met.

D) Within five (5) days following an accidental prohibited discharge, the user shall submit to the Director and to the Downstream System a detailed written report describing the cause of such discharge and the measures to be taken by the user to prevent similar future occurrences. Such notification shall not relieve the User of any expense, loss, damage or other liability which may be imposed pursuant to this ordinance or applicable law. For the purposes of this section, a slug discharge is any discharge of a nonroutine episodic nature, including but not limited to an accidental spill or noncustomary batch discharge and may consist of, but is not limited to, any of the prohibited pollutants listed in this ordinance or at 40 CFR 403.5(b), or any discharges with could case problems to the POTW.

E) The Director may, at his or her discretion, require management plans for the control of accidental discharges or slug discharges shall be provided when required by Federal, Commonwealth, Allegheny County or Downstream System regulations or when, in the judgement of the Director, such plans are necessary for the control of slug discharges or for the control of pollutants that could be discharged to the (n)_____ 's system during an accidental discharge on the user's premise. When required such plans shall include, as a minimum, the following elements:

- 1) Description of discharge practices, including non-routine batch discharges.
- 2) Description of stored chemicals.
- 3) Procedures for notifying the (n)_____ of any accidental discharges or slug discharges pursuant to Article VIII, Section Eight of this Ordinance.
- 4) Procedures to prevent accidental discharges or slug discharges.
- 5) Procedures for containing spills that occur.
- 6) Measures for controlling toxic organic pollutants.
- 7) Procedures and equipment for emergency response.

8) Follow up practices to limit damage to the (n)_____ 's system and Downstream Systems and the environment. When a user has developed a similar plan under RCRA, CERCLA, or other statutes and such plan provides adequate protection for the (n)_____ 's system and the environment, the Director may accept that plan as fulfilling the requirements of this subsection.

F) Solvent management plans shall be provided when required by the Director or by any Commonwealth or Federal regulation.

G) Stormwater management plans shall be provided when required by the Director or by any Commonwealth or Federal regulation.

H) Any other management plans shall be provided when required by the Director for the control of discharges or for the control or containment of any raw materials, products, wastes or any other substances which are potential pollutants if discharged into the (n)_____ 's system or into a watercourse.

Section 9. Compliance Schedules

When required pursuant to the provisions of Article VI, Section One or Section Three of this Ordinance, or when in the judgement of the Director, a schedule is required to ensure compliance with any provision of this Ordinance, a user shall develop a compliance schedule which contains increments of progress toward meeting applicable treatment or pretreatment standards, or stormwater discharge requirements or any provisions of this Ordinance. The increments shall be in the form of dates for commencement and completion of major events leading to the construction and operation of treatment or pretreatment facilities or process changes. No increment shall exceed nine months. The schedule shall provide for the shortest period of time practicable for completion of necessary facilities or process changes. When the schedule is for compliance with newly promulgated categorical pretreatment standards, the final date for compliance may not be later than the compliance date contained in the standard. Section Seven - Pollution Control Operations. All facilities for the treatment, pretreatment, or control of wastewater, cooling water or storm water or for spill containment shall be maintained continuously in satisfactory and effective operation by the user at the user's expense and shall be subject to inspection as deemed necessary by the Director. The user shall maintain operating records and shall submit all reports as stipulated in Article VIII, and Article X, of this Ordinance. Sludges, floatables and all other residuals removed during treatment or pretreatment operations or from grease, oil and grit traps or from spill containment facilities or from accidental discharge remediation activities, shall be disposed of in accordance with applicable local, Commonwealth and Federal regulations.

Section 10. Provisions for Monitoring

A) When required by the Director, the user shall provide a suitable manhole, inspection port or other appurtenance in each building sewer and in each regulated process discharge or at other suitable locations determined necessary by the Director, to facilitate observation, sampling, and measurement of all wastewater discharged from regulated processes and all wastewater, cooling water or stormwater discharged from the user's premise into the (n)_____ 's system. Such sampling points shall be located so as to ensure the ability to collect samples which are representative of the user's daily operations. All sampling points shall be designed and constructed in a manner approved by the Director and shall be provided and maintained by the user at the user's expense and shall be safe and accessible at all times.

1302 B) Whenever the Director determines that a public safety hazard may exist due to the
1303 nature of a user's discharge, the Director shall require the user to install and maintain at
1304 the user's expense suitable monitoring devices to detect the presence of hazardous
1305 conditions.

1306 **ARTICLE IX USER REPORTS AND MONITORING**

1307 **Section 1. User Questionnaire**

1308 When required by the Director any user as identified below shall submit applicable User
1309 Questionnaires to the Director on forms provided by the Director.

- 1310 1) Any user who discharges wastewater to the (n)_____ 's wastewater system, or
1311 stormwater system or to a watercourse, and who consumes at least fifty thousand
1312 (50,000) cubic feet of water in a six month period.
- 1313 2) Any user who discharges or may discharge toxic substances.
- 1314 3) Any user subject to Federal Categorical Pretreatment Standards.
- 1315 4) Any user required to pretreat wastewater in accordance with Article VI.
- 1316 5) Any user who discharges radioactive materials.
- 1317 6) Any user who discharges stormwater associated with industrial activity as defined in 40
1318 CFR 122.26(b) or any user who the Director determines is or may be contributing a
1319 substantial pollutant loading to the (n)_____ 's stormwater system.
- 1320 7) Any other user not previously listed when the Director determines that such information is
1321 required to ensure the (n)_____ 's compliance with any Commonwealth, Federal,
1322 Allegheny County or Downstream System regulation or with the provisions of this
1323 Ordinance. Any user who has previously submitted a User Questionnaire may be
1324 required to submit a new questionnaire at any time the Director determines such
1325 information is necessary to ensure the (n)_____ 's compliance with any Commonwealth,
1326 Federal, Allegheny County or Downstream Systems regulations or with any provisions of
1327 this Ordinance. Unless so requested by the Director, a user who submitted a
1328 questionnaire prior to enactment of this Ordinance, is not required to submit a new
1329 questionnaire.

1330 **Section 2. Baseline Monitoring Report**

1331 Any existing industrial user subject to a newly promulgated categorical pretreatment standard or
1332 a new source or any source that becomes subject to the standard after the promulgation of an
1333 applicable categorical standard, shall submit a report to the Director which contains the
1334 information required by 40 CFR 403.12(b). Existing users shall submit the report within 180 days
1335 of promulgation of the standard. New sources and sources that become subject to the standard
1336 after promulgation shall submit the report at least 90 days before initiating discharge. The report
1337 shall indicate whether or not applicable pretreatment standards are being met on a consistent
1338 basis; and, if not, whether additional operation and maintenance and/or additional pretreatment
1339 is required for the user to meet applicable pretreatment standards and requirements. If
1340 additional pretreatment and/or operation and maintenance will be required to meet the
1341 standards, a schedule shall be developed by the user, with the approval of the Director, to

1342 indicate when the user will provide such additional pretreatment. The completion date in the
1343 schedule shall not be later than the compliance date established for the applicable pretreatment
1344 standards.

1345 **Section 3. 90 Day CPS Compliance Report**

1346 When required by the Director, within 90 days following the date for final compliance with
1347 applicable categorical pretreatment standards (CPS) or following commencement of introduction
1348 of wastewater from a new source into the (n)_____, any industrial user subject to the standards
1349 shall submit a report to the Director which contains the information required by 40 CFR
1350 403.12(b).

1351 **Section 4. Self-Monitoring Reports**

- 1352 A) When required by the Director or by Commonwealth, Federal, Allegheny County or
1353 Downstream System regulations, any user who discharges any wastewater or
1354 stormwater to the (n)_____ 's system shall submit to the Director self- monitoring reports
1355 identifying the nature and concentration or mass of prohibited or regulated substances in
1356 discharges from regulated processes or from the user's premises. The results shall be
1357 reported as concentration if the pollutant limits are given in concentration terms and shall
1358 be reported as mass if the pollutant limits are given as mass. The report shall include a
1359 record of all measured or estimated average and maximum daily flows during the
1360 reporting period. Other information may be required based upon applicable
1361 Commonwealth and Federal regulations. The reporting period shall be determined by the
1362 Director based upon the quantity or characteristics of the discharge or the requirements
1363 of the Commonwealth or Federal regulations. All sampling and analyses performed to
1364 satisfy this monitoring requirement shall be performed in accordance with the provisions
1365 of Article X, Section Two of this Ordinance.
- 1366 B) If a user performs monitoring using the methods specified in Article X, Section Two, more
1367 often than required by the Director, the results of all such additional monitoring and any
1368 additional flow measurements shall be reported to the Director at least quarterly.
- 1369 C) If any sampling performed by a user using the methods specified in Article X, Section
1370 Two indicates a violation of any pretreatment limitation the user shall notify the Director
1371 within one business day of becoming aware of the violation. The user shall re-sample the
1372 discharge and shall submit the results of the re-sampling to the Director within thirty (30)
1373 days of becoming aware of the violation.

1374 **Section 5. Production Reports**

- 1375 A) All users subject to production based discharge limitations shall submit to the Director
1376 periodic reports on production rates. The first report shall be submitted within 90 days
1377 following the date for final compliance with applicable categorical pretreatment standards
1378 or following commencement of discharge from a new source into the (n)_____.
1379 Thereafter, the reports shall be submitted semi-annually at the times specified by the
1380 Director. Users for which equivalent mass or concentration limits have been established
1381 by the Director in accordance with Article V, Section Two, subsection A, shall report a
1382 reasonable measure of the user's long term average daily production rate. For the initial
1383 report, the long term average daily production rate should be based upon a minimum of
1384 one recent year's historical data, if available, or upon well documented projections if such
1385 data are not available. Subsequent reports shall contain actual average daily production

1386 rates during the reporting period. All other users subject to production based discharge
1387 limitations shall report the actual daily production rates during the reporting period.

1388 B) Any user for which the Director has converted production based discharge limitations to
1389 equivalent mass or concentration limits shall notify the Director within two (2) business
1390 days after the user has a reasonable basis to know that the average daily production rate
1391 will significantly change within the next calendar month.

1392 **Section 6. Reports of New/Increased Discharge**

1393 Any user planning a significant new or increased discharge, shall notify the Director at least ten
1394 (10) business days prior to the date of the planned increase or addition. The Director may
1395 exercise the authority granted in Article VI, Section One to impose conditions on the proposed
1396 increase or addition.

1397 **Section 7. Compliance Schedule Progress Reports**

1398 Any user for which a compliance schedule has been established pursuant to the provisions of
1399 this Ordinance, shall submit a report of progress to the Director not later than fourteen (14)
1400 business days following each date in the schedule and the final date for compliance or at such
1401 frequency as the Director has determined necessary. Each report shall Commonwealth the
1402 status of compliance with the progress increment due and shall explain the reasons for any
1403 delays, actions being taken to return to schedule and the expected date the missed increment
1404 will be completed.

1405 **Section 8. Notification of Anticipated Discharge**

1406 A) Anticipated Discharge: If a user anticipates a need for a pretreatment facility or treatment
1407 facility bypass which may cause pretreatment or treatment standards or requirements to
1408 be violated, the user shall notify the Director prior to commencing the bypass. An
1409 anticipated bypass will be allowed only when the conditions specified in Article V, Section
1410 Three, subsection D are met.

1411 **Section 9. Hazardous Waste Discharge Report**

1412 Any user who discharges to the (n)_____ 's wastewater system any substance which, if
1413 otherwise disposed, is a listed or characteristic waste in 40 CFR 261, shall submit to the Director
1414 a report pursuant to the provisions in 40 CFR 403.12(p). Pollutants already being reported to the
1415 Director pursuant to the provisions of Section Four of this Article do not have to be included in
1416 this report. Users who are initially exempt from this reporting requirement because they do not
1417 discharge applicable quantities of hazardous wastes are subject to the reporting requirements of
1418 Section Six of this Article if they subsequently initiate discharge of such wastes.

1419 **Section 10. Non-(n)_____ Operated Facilities Reports.**

1420 Any person who operates a wastewater system or wastewater treatment facility or who
1421 discharges any wastewater, cooling water, storm water or unpolluted water into any watercourse
1422 within the (n)_____ shall furnish such reports as may be required by the Director for
1423 ascertaining compliance with this Ordinance.

1424 **Section 11. Stormwater Reports**

1425 When required by the Director, any user who discharges stormwater to the (n)_____ 's
1426 stormwater system shall submit a report to the Director which includes the following information:
1427 (1) Name and address of the facility and name and telephone number of a contact person. (2)
1428 Location of the discharge on the user's property. (3) Description, including SIC, which best
1429 reflects the principal products or services provided by the facility. (4) Any existing NPDES
1430 number for the discharge. (5) Any of the information specified in 40 CFR 122.26(c)(1)(I)(A)
1431 through (E) which the Director determines is necessary. (6) Any other information the Director
1432 determines is necessary to evaluate compliance with this Ordinance and with NPDES
1433 stormwater regulations. Any user who plans a new discharge of stormwater associated with
1434 industrial activity, as defined in 40 CFR 122.26(b)(14) shall submit such report at least 180 days
1435 before initiating the discharge, except that dischargers included under 122.26(b)(14)(x) shall
1436 submit such report at least 90 days before initiating construction. All other users who discharge
1437 stormwater shall submit such reports at the times specified by the Director.

1438 **Section 12. Other Reports**

1439 Users shall submit any other reports required by the Director to ensure compliance with the
1440 provisions of this Ordinance and with applicable Commonwealth, Federal, Allegheny County and
1441 Downstream System regulations.

1442 **ARTICLE X ENFORCEMENT**

1443 **Section 1. Notification of Violation**

1444 Whenever any user is found to have violated or to be violating any provision of this Ordinance or
1445 a discharge permit or order issued pursuant to this Ordinance, the Director shall provide the user
1446 with a notification of the nature of the violation and direct that actions be taken to remedy the
1447 noncompliance. Within thirty (30) days after receipt of the notice, unless a shorter time is
1448 specified in the notice, a plan for the satisfactory correction thereof shall be submitted by the
1449 user to the Director.

- 1450 A) Verbal Notice: For a violation which involves the discharge or imminent threat of
1451 discharge of pollutants by a user and which presents or appears to present an immediate
1452 danger to the health or welfare of humans, the Director may notify the user by telephone
1453 or visit to take immediate action to discontinue or reduce the discharge to safe levels or,
1454 in the case of an imminent threat, to take appropriate actions to eliminate the threat
1455 within a reasonable amount of time as established by the Director. Such verbal notice
1456 shall be followed within five days by a written notice.
- 1457 B). Written Notice: For any violation other than one requiring immediate action, the Director
1458 may notify the user by letter or by order as provided in Section two of this Article of the
1459 nature of the violation and require the user to take action to remedy the noncompliance.

1460 **Section 2. Administrative Orders**

1461 The Director is authorized to issue the following administrative orders at any time he deems
1462 such action appropriate to secure timely and effective compliance with this Ordinance or a
1463 discharge permit or order issued pursuant to this Ordinance, whether or not any previous
1464 notifications of violation have been provided to the user.

- 1465 A) Cease and Desist Order: The Director may issue an order to cease and desist a violation
1466 or an action or inaction which threatens a violation and to direct the user to comply

1467 forthwith or to take such appropriate remedial or preventive action as may be needed to
1468 properly address the violation or threatened violation, including halting operations and
1469 terminating the discharge.

1470 B) Compliance Order: The Director may issue an order requiring a user to provide within a
1471 specified period of time, such treatment, pretreatment or discharge control facilities or
1472 related appurtenances as are necessary to correct a violation or to prevent a threatened
1473 violation. A compliance order may also direct that a user provide improved operation and
1474 maintenance of existing discharge facilities, conduct additional self-monitoring or submit
1475 appropriate reports or management plans.

1476 C) Show Cause Order: The Director may issue an order to show cause why a proposed
1477 enforcement action should not be taken. Notice shall be served on the user specifying
1478 the time and place for a meeting, the proposed enforcement action and the reasons for
1479 such action, and a request that the user show cause why the proposed enforcement
1480 action should not be taken. Whether or not a duly notified user appears as noticed,
1481 additional enforcement action may be initiated.

1482 D) Consent Order: The Director may enter into consent orders, assurances of voluntary
1483 compliance, or other similar documents establishing an agreement with a user. Such
1484 orders shall include specific actions to be taken by the user and specific time frames to
1485 correct a violation or to remove the threat of a violation.

1486 Section 3. Emergency Action

1487 When a user has failed to take action within the time established in a notice or order to eliminate
1488 an imminent threat to humans or to the environment or to the effective operation of (n)_____
1489 facilities or Downstream Systems, the Director may take such action as deemed necessary,
1490 including work by (n)_____ personnel to eliminate the threat or to mitigate the impact on the
1491 (n)_____’s system, Downstream Systems or the environment. The Director shall attempt to
1492 notify the user of the intended action, but if unable to do so within a reasonable period of time,
1493 shall proceed with the action.

1494 Section 4. Legal Action and Penalties

1495 As an alternative to, or in addition to, the procedures set forth in Sections One through Three of
1496 this Article, the Director may initiate through counsel litigation for appropriate legal and/or
1497 equitable relief in the City or County Courts having jurisdiction.

- 1498 A) Injunctive Relief: Injunctive relief may be sought to restrain a violation or threatened
1499 violation of any of the provisions of this Ordinance.
- 1500 B) Consent Decree: When deemed appropriate, the (n)_____ may enter into a consent
1501 decree with any person accused of a violation of this Ordinance, prior to a full hearing on
1502 the issues.
- 1503 C) Penalties: Any person who pleads or is found guilty of a violation of this Ordinance shall
1504 be fined not more than One Thousand Dollars (\$1000.00) or be imprisoned for a period
1505 of not more than one year, or both such fine or imprisonment, for each violation. Each
1506 day in which any such violation shall continue shall be deemed a separate offense.

1507 Section 5. Liability Due to Violations

1508 A) Any person who violates any provisions of this Ordinance shall be liable to the (n)_____
1509 for any expense, loss, or damage incurred by the (n)_____ due to such violation and for
1510 any penalties assessed against the (n)_____ by reason of such violation.

1511 B) Actions taken by a user in response to notifications, orders or enforcement activities
1512 initiated by the (n)_____ pursuant to Sections One through Three of this Article in no
1513 way relieve the user of liability for any violations occurring before or after the (n)_____’s
1514 action.

1515 Section 6. Recovery of Costs

1516 The Director shall bill the user for the costs incurred by the (n)_____ for any work undertaken
1517 pursuant to the provisions of Section Three of this Article. The Director may also bill the user for
1518 work undertaken pursuant to the provisions of Article IV, Section Two and Article VII, Section
1519 Nine of this Ordinance. Failure to pay any such assessed costs within thirty (30) days after
1520 demand has been made shall constitute a violation of this Ordinance, enforceable under the
1521 provisions of this Article, or notice may be filed in the Office of the Recorder of Deeds of the City
1522 or County having jurisdiction, as the case may be, whereupon such bill shall become a lien
1523 against the property involved.

1524 Section 7. False Statements

1525 Any person who knowingly makes any false statements, representation or certification in any
1526 application, questionnaire, record, report, plan, drawing or other document filed or required to be
1527 maintained pursuant to this Ordinance, or who falsifies, tampers with, or knowingly renders
1528 inaccurate any monitoring device or method shall, upon conviction, be subject to the penalties
1529 stipulated in Section Four of this Article.

1530 Section 8. Publication of Violators

1531 Excluding violations of the excessive clearwater provisions occurring on residential properties, a
1532 list of the users who have experienced significant noncompliance of the pretreatment limitations
1533 or requirements of this Ordinance during the previous twelve (12) months shall be published
1534 annually by the Director in the largest daily newspaper published in the (n)_____’s service area.
1535 The notification shall also summarize any enforcement action taken against the user during the
1536 same period.

1537 ARTICLE XI GENERAL PROVISIONS

1538 Section 1. Records Retention

1539 All persons subject to this Ordinance shall retain and preserve, for not less than three (3) years,
1540 all records, books, documents, memoranda, reports, sample analysis results, correspondence
1541 and any and all summaries thereof relating to the monitoring, sampling and chemical analyses of
1542 their discharge made by or on their behalf. All records which pertain to matters which are the
1543 subject of administrative action or any other enforcement or litigation activities brought by the
1544 (n)_____ shall be retained and preserved by such persons until all enforcement activities have
1545 been concluded and all periods of limitation with respect to appeals have expired.

1546 Section 2. Analytical Procedures

1547 All sampling and analyses performed to satisfy the monitoring and reporting requirements of this
1548 Ordinance shall be performed in accordance with the techniques prescribed in 40 CFR 136 and
1549 amendments thereto unless other techniques are prescribed for specific parameters.

- 1550 A) Sampling of discharges subject to categorical standards and sampling of discharges to
1551 the (n)_____’s wastewater system shall be conducted in such a manner as to ensure
1552 that the results of individual samples (whether grab or composite) are representative of
1553 daily operations and that the results of all samples during the reporting period are
1554 representative of the conditions during the reporting period.
- 1555 B) Sampling of discharges to a separate storm sewer shall be conducted in accordance with
1556 40 CFR 122.21(g)(7) and 122.26(d)(2) or as specified in any NPDES permit issued for
1557 such discharges.
- 1558 C) When a user employs continuous monitoring techniques for temperature or pH and
1559 maintains records of the temperature or pH continuously monitored, the user shall meet
1560 the temperature and pH prohibitions and limitations specified in Article V of this
1561 Ordinance and in any applicable categorical standard, except that unintentional and
1562 temporary excursions above the temperature and upper pH values and below the lower
1563 pH values are allowed so long as: (1) The total time during which values for each
1564 parameter are outside the prohibition or limitation levels does not exceed Eight (8) hours
1565 in any calendar month; (2) No individual excursion exceeds sixty (60) minutes in length;
1566 and (3) No excursion results in or contributes to violations of the prohibitions in Article V,
1567 Section One, Subsections A.1, A.8 or A.14 or otherwise endangers life, limb or property
1568 or causes a public nuisance. When the Director determines that a sixty minute excursion
1569 by any user will or may result in a violation as described in (3) above, the Director may
1570 establish a shorter allowable duration for that discharger.

1571 Section 3. Certifications on Applications and Reports

- 1572 A) All reports, questionnaires or applications required to be submitted to the Director
1573 pursuant to the provisions of this Ordinance shall contain the following certification
1574 statement: "I certify under penalty of Law that this document and all attachments were
1575 prepared under my direction or supervision in accordance with a system designed to
1576 assure that qualified personnel properly gather and evaluate the information submitted.
1577 Based on my inquiry of the person or persons who manage the system, or those persons
1578 directly responsible for gathering the information, the information submitted is, to the best
1579 of my knowledge and belief, true, accurate, and complete. I am aware that there are
1580 significant penalties for submitting false information, including the possibility of fine and
1581 imprisonment for knowing violations."
- 1582 B) All reports, questionnaires and applications must be signed as follows: 1. By a
1583 responsible corporate officer if the user is a corporation. 2. By a general partner if the
1584 user is a partnership. 3. By the proprietor if the user is a sole proprietorship. 4. By a duly
1585 authorized representative of the individual designated in 1, 2 or 3 if that individual
1586 submits a written authorization to the Director and the authorization specifies a person or
1587 position having responsibility for the overall operation of the facility from which the
1588 discharge originates, such as a plant manager, or overall responsibility for environmental
1589 matters at the company. A new authorization must be submitted to the Director anytime
1590 the person or position changes.

1591 Section 4. Data Verification

1592 When the Director determines it is necessary to verify any data reported on any application or
1593 any User Questionnaire or any other reports submitted pursuant to the provisions of this
1594 Ordinance, the Director may sample wastewater or stormwater discharges or potential sources
1595 of pollutant discharges from an applicant or a user. Samples may be collected by the (n)_____
1596 on a periodic or continuous basis as required to verify reported data. The analytical information
1597 obtained from such sampling, if substantially different from reported data, may be used in lieu of
1598 the information reported by the applicant or user. If deemed necessary, an extended,
1599 comprehensive sampling program may be conducted after notice to the user by the Director to
1600 obtain additional discharge or source data necessary for verification of reported data. The
1601 analytical results obtained from said program may also be used in lieu of reported values for
1602 each source or potential source of pollutant discharge. If a comprehensive sampling program is
1603 deemed necessary, all equipment installation, sampling, and analysis costs shall be borne by
1604 the user in accordance with applicable ordinances. If the user elects to make the sampling or
1605 monitoring installations with the user's own personnel, each installation shall be of a type and
1606 configuration acceptable to the Director. The hours of operation of any gauging or sampling
1607 station shall be the time required, as approved by the Director, to obtain representative samples
1608 of the effluent discharged and to conduct necessary analytical examinations of the samples
1609 collected.

1610 Section 5. Right of Entry

1611 In order to ensure compliance with the provisions of this Ordinance and applicable
1612 Commonwealth and Federal regulations, (n)_____ representatives may inspect a user's
1613 treatment, pretreatment or discharge control facilities, or any process or any area of the user's
1614 premise which may be a source of any discharge or a source of any pollutants contained in any
1615 discharge into the (n)_____’s wastewater or stormwater system or any watercourse; conduct
1616 sampling of such facilities, processes or areas; and examine or copy any user's records related
1617 to such discharges. Any duly authorized representative of the (n)_____ upon presentation of
1618 proper credentials and after execution of appropriate confidentiality agreements shall be
1619 permitted access to appropriate areas of a user's premises without prior notice for these
1620 purposes. A representative of the user shall, if appropriate, accompany the (n)_____
1621 representative while the work is being performed and shall assure that all applicable safety rules
1622 are being observed by the (n)_____’s representative.

1623 Section 6. More Stringent Regulations

- 1624 A) In any instance in which the Commonwealth of Pennsylvania, Federal government,
1625 Allegheny County, or Downstream System modifies an existing regulation or promulgates
1626 a new regulation which establishes treatment, pretreatment or discharge standards or
1627 requirements for new or existing users which are more stringent than those contained in
1628 this Ordinance, such requirements shall, on the effective date of the new regulations,
1629 supersede the less stringent provisions of this Ordinance and shall be fully enforceable
1630 under this Ordinance as if fully set out herein.
- 1631 B) In any instance in which a Commonwealth, Federal, Allegheny County or Downstream
1632 System agency imposes restrictions or limitations on the use of or discharges to any
1633 facilities regulated by this Ordinance which are more stringent than the provisions of this
1634 Ordinance, such restrictions or limitations shall take precedence within the jurisdictional
1635 area of the Commonwealth, Federal or local government agency.

1636 Section 7. Applicable Charges and Fees

- 1637 A) All users shall pay the sewer use charges and capital improvement surcharges
 1638 authorized by applicable (n)_____ Ordinances. Nonresidential users who discharge
 1639 wastewater containing BOD5, COD or TSS or other substance in excess of the
 1640 concentrations of those substances in normal wastewater as defined by (N)_____ or
 1641 Downstream Systems may be subject to extra strength surcharges as authorized by
 1642 applicable (n)_____ Ordinances.
- 1643 B) Charges or fees to provide for the recovery of costs associated with implementation and
 1644 enforcement of this Ordinance shall be as Stated in the applicable (n)_____
 1645 ordinances. These fees shall be in addition to the normal sewer use charges. Charges
 1646 and fees may include:
- 1647 1) Fees for monitoring, inspections and surveillance;
 - 1648 2) Fees for laboratory analyses.
 - 1649 3) Fees for permit applications
 - 1650 4) Appeal fees;
 - 1651 5) Charges for emergency actions or repairs;
 - 1652 6) Other fees necessary to carry out the requirements stipulated herein.

1653 Section 8. Damage to Property

1654 No person shall willfully damage, destroy, uncover, deface, alter, or tamper with any structure,
 1655 appurtenance, sampling equipment, flow monitoring equipment, or equipment which is a part of
 1656 the (n)_____’s system. Any person who willfully or negligently damages any structure,
 1657 appurtenance, or equipment which is a part of the (n)_____’s system shall be liable to the
 1658 (n)_____ for all loss and expense.

1659 Section 9. Conflicting Ordinances

1660 All ordinances or parts of ordinances in conflict herewith are hereby repealed.

1661 Section 10. Liability Under Previous Ordinances

1662 Nothing contained in this Ordinance shall be construed as abating any action now pending
 1663 under or by virtue of any ordinance herein repealed; or as discontinuing, abating, modifying or
 1664 altering any penalty accrued or to accrue, or as affecting the liability of any person, firm or
 1665 corporation, or as waiving any right of the (n)_____ under the provisions of any ordinance
 1666 hereby repealed.

1667 Section 11. Severability

1668 The invalidity of any section, clause, sentence, or provision of this Ordinance shall not affect the
 1669 validity of any other part of this Ordinance which can be given effect without such invalid part.

1670 Section 12. Right to Confidentiality

1671 Information and data obtained from applications, questionnaires, permits, monitoring programs
 1672 and inspections and any other required reports or documents shall be available for inspection by
 1673 the public or any government agency without restriction, unless a user specifically

1674 Commonwealths that the release of such information would divulge information, processes, or
 1675 methods of production entitled to protection as trade secrets of the user. Any information
 1676 submitted to the Director may be claimed as confidential in accordance with applicable Federal
 1677 regulations. Any claim of confidentiality must be made at the time of submittal by stamping the
 1678 words "Confidential Business Information" on each page containing such information. When
 1679 requested by the user furnishing the report, the portion of a report which might disclose trade
 1680 secrets or secret processes shall not be made available for inspection by the public, but shall be
 1681 made available upon written request to governmental agencies for uses related to regulation of
 1682 the user's discharge; subject however to the confidentiality provisions of 40 CFR, Part 2 which
 1683 are incorporated by this reference as applicable to the (n)_____ to the same extent Part 2 is
 1684 applicable to EPA, or any applicable Pennsylvania law.

1685 In the event that a party to any judicial or administrative proceeding or any court or any
 1686 administrative agency (except as specified above) demands or subpoenas or orders the
 1687 production of any such confidential information, the (n)_____ shall immediately notify the
 1688 person who supplied such information so that person shall have the opportunity to secure
 1689 judicial or administrative relief to preserve such confidentiality. Unless such person gets such
 1690 relief, the (n)_____ will comply with such demand, subpoena or order if it is legally required so
 1691 to do. Wastewater constituents and characteristics will not be recognized as confidential
 1692 information. Persons, other than authorized representatives of the United Commonwealths
 1693 Environmental Protection Agency or the Pennsylvania Department of Environmental Protection,
 1694 requesting to review information and data must do so in writing and must pay all applicable costs
 1695 associated with the preparation and copying of such information and data.

1696 Section 13. Right to Amend Ordinance

1697 The (n)_____ reserves the right to amend this Ordinance in any manner and to establish more
 1698 stringent limitations or requirements where deemed necessary to comply with the objectives set
 1699 forth in Article I, Section Two of this Ordinance.

1700 Section 14. Appeals

1701 Any user who claims to be aggrieved by an act of, or failure to act by, the Director may appeal to
 1702 the (n)_____’s [Board of Directors] [Board of Commissioners] [Borough or City Council] as
 1703 provided for under Pennsylvania Code. A written petition of appeal may be filed with the Board
 1704 within thirty (30) days of the Director's act or failure to act. At its next regularly scheduled
 1705 meeting the Board shall set a time for hearing the appeal and shall give written notice to the
 1706 parties, stating the time and place for the hearing. The hearing shall be set for a date not later
 1707 than sixty (60) days from the date of the Board meeting. The Board shall decide the appeal
 1708 within 30 days after the hearing and shall notify the parties in writing of its decision.

1709 The foregoing Ordinance was adopted _____

1710 This model ordinance was adopted in part from the Metropolitan St. Louis Sewer District Sewer Use Ordinance,
 1711 made available from the Center for Watershed Protection (<http://www.cwp.org>). Also used for guidance were
 1712 the *Pretreatment Regulations of the Allegheny County Sanitary Authority* (1993) and the WEF Manual of
 1713 Practice No. SM-7 *Municipal Strategies for the Regulation of Sewer Use* (1987). The non-profit Center for
 1714 Watershed Protection has a variety of model ordinances available. See also the Local Government
 1715 Environmental Assistance Network website (<http://lgean.org>).

Appendix C

Model Intermunicipal Service Agreement

This model agreement is intended to provide guidance to municipalities in the development of a intermunicipal wastewater service agreement. It should be reviewed and modified by the municipal attorneys and engineers to meet local conditions and policies.

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This agreement made as of the _____ day of _____, 20__ by and among _____, hereafter the Accepting Municipality and _____, hereafter the Discharging Municipality, bodies corporate and politic of the Commonwealth of Pennsylvania created and existing [as a municipal corporation][under the Municipality Authorities Act of 1945, as amended.]

WHEREAS, the Discharging Municipality desires to connect its wastewater; system to that of the Accepting Municipality for purposes of transporting and/or treating its wastewater, and

WHEREAS, The Discharging Municipality and the Accepting Municipality have determined that such a connection is mutually beneficial to their respective citizens and to the environment;

NOW THEREFORE, the Discharging Municipality and the Accepting Municipality legally bind themselves, their successors and assigns to covenant and agree as follows:

ARTICLE I - PURPOSE AND OBJECTIVES

The purpose of this Agreement is to set forth the terms and conditions by which the Discharging Municipality may discharge wastewater into the Accepting Municipality's wastewater system.

ARTICLE II DEFINITIONS

1. BOD5 (Biochemical Oxygen Demand) means the quantity of oxygen utilized in 5 days in the biochemical oxidation of carbonaceous and nitrogenous compounds and certain inorganic materials in water or wastewater as determined by Standard Methods and expressed in milligrams per liter.
2. CAPITAL COSTS mean the historic and future costs incurred by the Accepting Municipality to acquire, expand or upgrade its wastewater system.
3. CFR means Code of Federal Regulations as published by the Office of the Federal Register, National Archives and Records Administration.
4. CLEAN WATER ACT or CWA means the Federal Water Pollution Control Act of 1972 and all amendments thereto.
5. CLEAN STREAMS LAW means 35 Pennsylvania Statutes 691.1 et seq.
6. CLEAR WATER means groundwater and stormwater as defined herein plus other sources of unpolluted water not entering the wastewater system as a result of potable water usage or industrial processes.
7. COMPOSITE SAMPLE means a sample made up by combining individual grab samples collected within a 24 hour period. For all pollutants subject to composite sampling requirements, 24 hour flow proportional composite samples shall be obtained when feasible. If the Discharging Municipality demonstrates that flow proportional composite samples are not feasible, then the Accepting Municipality may allow collection of time proportional composite samples. In no case may a composite sample be made from fewer than four grab samples. In all cases the individual grab samples must be adequately spaced so as to ensure a sample that is representative of the user's daily operations.
8. PENNSYLVANIA CODE means the code of Commonwealth regulations.
9. DAILY AVERAGE VALUE means the result of analysis for a particular pollutant in a composite sample of a discharge collected within a time period not greater than 24 hours.

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10. DOWN STREAM SYSTEM shall mean the wastewater system of any municipality or municipal authority into which the Accepting Municipality's wastewater system discharges for purposes of conveyance or treatment.
 11. EPA means the United States Environmental Protection Agency.
 12. EXCESSIVE CLEARWATER means any clearwater that is intentionally discharged to a sanitary sewer system and clearwater entering the Accepting Municipality's wastewater system through leaks in the Discharging Municipality's sewers and building sewers within the Discharging Municipality in rates or volumes exceeding the design standard applicable to the building sewer. In addition, inflow of streams and acid mine drainage are considered to be excessive clearwater.
 13. FIXED COSTS means costs incurred by the Accepting Municipality in the collection, transport and treatment of wastewater that do not vary proportionately to changes in the volume of wastewater entering its system or the concentration of pollutants within the wastewater.
 14. INFILTRATION shall mean clearwater entering a sanitary sewer through leaks and other unintentional sources.
 15. INFLOW shall mean clearwater entering a sanitary sewer through drains and other intentional sources.
 16. MAY as used herein is permissible. "Shall" is mandatory.
 17. NON-RESIDENTIAL means all property other than residential property, including but not limited to, industrial, commercial and semi-public.
 18. NORMAL WASTEWATER means wastewater which, prior to any treatment, contains not more than _____ milligrams per liter of suspended solids and has a BOD5 not greater than _____ milligrams per liter, and a COD not greater than _____ milligrams per liter or as defined by a Downstream System.
 19. NPDES PERMIT means a permit issued under the National Pollutant Discharge Elimination System pursuant to Section 402 of the Clean Water Act for a discharge into waters of the Commonwealth.
 20. POINTS OF CONNECTION means the points at which Discharging Municipality's wastewater system are connected to the Accepting Municipality's wastewater system.
 21. POLLUTANT means any substance which, alone or in combination with other substances, if discharged to waters of the Commonwealth in sufficient quantities, causes or is reasonably certain to cause any alteration of the physical, chemical or biological properties of such waters; or to create a nuisance; or to render such waters harmful, detrimental or injurious to public health, safety or welfare, or to domestic, industrial, agricultural, recreational, or other legitimate beneficial uses or to any organism, aquatic life, plant or animal.
 23. POTW means a publicly owned treatment works or wastewater treatment plant operated by the Accepting Municipality or a Downstream System pursuant to a NPDES operating permit.
 24. RESIDENTIAL means property used only for human residency and shall include subdivisions, single family dwellings, two family dwellings, and multifamily dwellings.
 25. SANITARY SEWER means a pipe or conduit designed and intended to receive and convey wastewater as defined herein.
 26. SANITARY WASTEWATER means wastewater emanating from the sanitary conveniences, including toilet, bath, laundry, lavatory, and/or kitchen sink, of residential and non-residential sources, as distinct from industrial waste.
 27. SEWER means a pipe or conduit for conveying wastewater, stormwater or cooling water or other disposed wastes.
 28. SEWER USE ORDINANCE means one or more municipal enactments regulating the use of the municipal wastewater system.
 29. SHALL is mandatory; MAY is permissive.
 30. Commonwealth means the Commonwealth of Pennsylvania.
 31. STORMWATER means rainfall runoff, snow melt runoff and surface runoff and drainage.
 32. TREATMENT means the reduction or elimination of pollutants in wastewater or stormwater prior to discharge to waters of the Commonwealth.
 33. USER means any person who discharges, or causes the discharge of wastewater into the Discharging Municipality's wastewater system or any person served by the Discharging Municipality's wastewater system.
 34. UPSTREAM SYSTEM shall mean the wastewater system of any municipality or municipal authority discharging into the Discharging Municipality's wastewater system.
 35. WASTE means any material other than unpolluted water which is accidentally or purposely discarded into the Accepting Municipality's system.
 36. WASTEWATER means the water-borne wastes, industrial waste and/or sanitary wastewater as defined herein, emanating from residential and non-residential sources together with such groundwater, surface water, or stormwater which have a cumulative volume of less than _____ gallons per capita per day within the service area on an average annual basis.
 37. WASTEWATER SYSTEM means any municipality's entire sewerage system, including sanitary and combined sewers and treatment facilities (where applicable), owned and operated by the municipality for the collection, storage and treatment of wastewater to serve the needs of the municipality and its inhabitants and others, including all appurtenances and facilities connected therewith or relating thereto, together with all extensions, improvements, additions and enlargements thereto made or acquired by the municipality. The municipality's wastewater system is a Publicly Owned Treatment Works (POTW) as defined at 40 CFR Part 122 and is therefore subject to all provisions of Commonwealth and Federal regulations applicable to POTWs.
 38. WATERCOURSE means a natural or manmade surface drainage channel or body of water (including a lake or pond) in which a flow of water occurs, either continuously or intermittently.
 39. WATERS OF THE COMMONWEALTH means all rivers, streams, lakes and other bodies of surface water and groundwater lying within or forming a part of the boundaries of the States which are not entirely confined and located completely upon lands owned, leased or

91 otherwise controlled by a single person or by two or more persons jointly or as tenants in
92 common and includes waters of the United Commonwealths lying within the Commonwealth.

93
94 ARTICLE III ACCEPTANCE OF WASTEWATER

95 Section 1 Acceptance of Wastewater

96 The Accepting Municipality will accept sewage as herein defined flowing from Discharging
97 Municipality's wastewater system for purposes of transport to the Accepting Municipality's
98 POTW (herein defined)] [a Downstream System (herein defined).]

99 Section 2 Geographical Service Area

100 The point of origin of sewage discharged to Accepting Municipality pursuant to this
101 Agreement shall be limited to the geographic area(s) of Discharging Municipality shown on
102 the map in Attachment A and incorporated herein by reference.

103 A) Service Area Map

104 The service area map constituting Attachment A shall:

- 105 1. Include the sanitary and combined sewers of the Discharging Municipality,
106 showing
 - 107 a) Approximate alignment of sewer lines
 - 108 b) Manholes, pump stations and other appurtenances
- 109 2. All points of connection between the Accepting and the Discharging
110 Municipality shall be identified.
- 111 3. All points of connection between the Discharging Municipality and any
112 Upstream Systems (herein defined)
- 113 4. Be updated no less frequently than is required for municipal sewer maps
114 under Article XIV of the Allegheny County Health Department Code and
115 provided to the Accepting Municipality.
- 116 5. Be referenced to State Plan Coordinates or by latitude and longitude.

117 B) The geographic service area shall not be expanded without the written approval of
118 the Accepting Municipality.

119 Section 3 Point(s) of Connection

120 A) The Discharging and the Accepting municipalities shall maintain inventories of points
121 of connections between their respective wastewater systems. Information shall
122 include (but not necessarily limited to):

- 123 1. Exact locations of connections
- 124 2. Discharging Municipality's and Accepting Municipality's pipe size(s) at point
125 of connection
- 126 3. Manhole numbers of adjacent manholes in the municipal sewer systems.

4. Hydraulic limitations

5. The Discharging Municipality and the Accepting Municipality will review the
inventory annually and revise it as necessary.

B) Known points of connection as of the effective date of this Agreement are shown on
Attachment B of this Agreement.

C) Future Points of Connection

All future points of connection or current points of connection that are substantially
modified in nature or capacity shall:

1. Include a manhole at the point of connection or proximate convenient
location.
2. Be designed to allow for short term or permanent flow monitoring.
3. Both parties to this Agreement shall approve the design of future points of
connection.
4. The design of future connection points shall conform to the design standards
of PaDEP and other applicable agencies.
5. The costs and regulatory approval related to the installation of new points of
connection shall be the responsibility of the Discharging Municipality.

D) Discharging Municipality and Accepting Municipality shall have equal access to all
points of connection and related appurtenances for purposes of flow monitoring,
sampling and other purposes related to the implementation of this Agreement.

Section 4 Limitations on the Quantity of Wastewater Accepted

A) Volumetric Limitations

1. The Accepting Municipality will accept sewage (defined herein) at an average
annual volume equaling an average of _____ million gallons per day (mgd).
2. The volume of sewage discharged by Discharging Municipality to Accepting
Municipality shall not exceed an average of _____ mgd for any consecutive
30 day during a calendar year.

B) Flow Rate Limitations

Peak rates of discharge into Accepting Municipality's system shall at no time exceed
_____ mgd.

Section 5 Pollutant Loading Limitations

The Accepting Municipality may limit the concentration and quantity of Biochemical Oxygen
Demand (BOD₅), Total Suspended Solids (TSS) or other pollutant at the point(s) of
connection to the equivalent of Normal Wastewater as determined necessary by the
Accepting Municipality to maintain compliance with Federal, Commonwealth, Allegheny
County or Downstream System requirements.

128 Section 6. Flow Monitoring

- 129 A) All flows entering the Accepting Municipality's wastewater system from the
 130 Discharging Municipality shall be quantified using methodologies mutually agreed
 131 upon by the Discharging Municipality and the Accepting Municipality. The flow
 132 monitoring protocols to be in place during the duration of this Agreement are
 133 specified in Attachment C of this Agreement, and are incorporated by reference.
- 134 1. Where practicable, permanent recording flow metering devices shall be
 135 installed at the _____ expense at point(s) of connection with the Accepting
 136 Municipality's system.
 - 137 2. Temporary flow monitoring equipment and computer modeling may be used
 138 as agreed to by the Accepting Municipality and the Discharging Municipality.
 - 139 3. Estimates of the Discharging Municipality's and the Accepting Municipality's
 140 wastewater flows shall not be based exclusively on billed water consumption
 141 records. Estimates of wastewater flows shall include clearwater (herein
 142 defined).
 - 143 4. The flow monitoring protocols shall specify:
 144 a) Quality assurance and control procedures
 145 b) Responsibilities for the analysis of data
 146 c) Ownership and responsibilities for the maintenance of flow monitoring
 147 equipment
 148 d) Frequency of data and analysis distribution
- 149 B) All data and analysis shall be available to the Discharging Municipality and the
 150 Accepting Municipality.
 151

152 Section 7. Discharging Municipality's Obligations to Limit Flows

- 153 A) Upon a determination that the volumetric or flow rate limitations specified in Section 4
 154 above have been exceeded, the Discharging Municipality shall evaluate the causes
 155 of the exceedences and prepare a written correction plan and implementation
 156 schedule.
- 157 B) The correction plan shall be submitted to the Accepting Municipality for comment and
 158 approval.
- 159 C) The efficacy of repairs shall be verified through flow monitoring using the protocols
 160 referenced in Section 6 of this Article.
- 161 D) Should the Discharging Municipality not rectify problems within its wastewater
 162 system within _____ days after receiving written notice from the Accepting
 163 Municipality, the Accepting Municipality shall have the right to take whatever
 164 measures are necessary to remedy the violations to this Agreement, including, but
 165 not limited to, limiting the volume accepted to the volumetric limit specified in Section
 166 4 of this Article and/or terminating this Agreement and to disconnect and divert all of
 167 the wastewater from the Discharging Municipality, as permitted by Federal,
 168 Commonwealth or Allegheny County laws.

169 In such event, the Accepting Municipality covenants and agrees to take immediate
 170 action to provide its own facilities for the treatment and disposal of its sewage as
 171 required by law and Discharging Municipality consents and agrees that it will not

disconnect and divert sewage from the Discharging Municipality without having first
 given the Municipality a reasonable period of time to construct such facilities and
 place them into operation. In the event that excessive flows shall be the cause of or
 tend to be the cause of damage, injury or harm to the Accepting Municipality or cause
 the Accepting Municipality to violate Federal, Commonwealth or Allegheny County
 regulatory requirements, nothing herein contained shall be interpreted or is intended
 to waive or prevent the Accepting Municipality from seeking any form of legal or
 equitable relief.

Section 8. New Connections Within the Service Area

The Discharging Municipality may, in its own discretion and without hindrance by the
 Accepting Municipality, permit the connection with the Discharging Municipality's wastewater
 system of any and all premises used wholly as private dwellings, but no permit shall be
 issued by the Discharging Municipality for the connection with any such sewer or any
 premises (a) used wholly or in part for commercial or industrial purposes or (b) which would
 cause the volume or rate of wastewater discharge to exceed the limits in Section 4 of this
 Article, unless the application for such permit shall first have been approved by the
 Accepting Municipality as may be required by Pennsylvania Law.

ARTICLE IV REGULATION OF WASTEWATER SYSTEM USAGE

Section 1 The Discharging Municipality's Sewer Use Ordinance:

Pollutants which are discharged from Discharging Municipality's wastewater system to the
 Accepting Municipality's wastewater system enter waters of the Commonwealth from the
 Accepting Municipality's or Downstream System treatment plant outfalls or combined sewer
 overflow outfalls after conveyance through the Accepting Municipality's wastewater system
 and are therefore subject to NPDES permit regulations .

- A) The Discharging Municipality shall enact and enforce a Sewer Use Ordinance
 requiring that all users of the Discharging Municipality's system shall comply with the
 all requirements, prohibitions and standards of the Accepting Municipality's Sewer
 Use Ordinance (Ordinance Number _____) incorporated into this Agreement by
 reference and as may be amended from time to time to ensure that discharges
 originating in the Discharging Municipality's service area do not cause a violation of
 the conditions of the Accepting Municipality's or Downstream System NPDES
 permits, or cause any violations of Commonwealth or Federal water quality
 standards.
- B) The Discharging Municipality's Sewer Use Ordinance shall conform to any additional
 requirements, prohibitions and standards of any applicable Downstream Systems.
- C) In cases of conflicts between the requirements, prohibitions and standards of the
 Discharging Municipality's ordinance, the Accepting Municipality's ordinance and any
 applicable Downstream System's ordinance, the most stringent requirements shall
 prevail.
- D) At the Accepting Municipality's discretion, the Discharging Municipality may:
1. Enact the Accepting Municipality's ordinance by reference.
 2. Contract with the Accepting Municipality to enforce and administer the ordinance.

172 E) The Discharging Municipality understands and agrees that the wastewater
173 discharged to the Accepting Municipality's wastewater system and the wastewater or
174 treated water discharged by the Accepting Municipality to the Waters of the
175 Commonwealth or to Downstream Systems are subject to full compliance with
176 Federal, Commonwealth, Allegheny County, Accepting Municipality or Downstream
177 System laws, rules, permits, orders, pretreatment regulations and other regulations.

178 Section 2 Accepting Municipality's Responsibility to Update its Sewer Use Ordinance

- 179 A) The Accepting Municipality shall update its Sewer Use Ordinance as required to
180 conform with changing Federal, Commonwealth, Allegheny County or Downstream
181 System requirements, prohibitions and standards.
- 182 B) The Accepting Municipality shall provide the Discharging Municipality with written
183 notification of changes to the Accepting Municipality's ordinance at least _____
184 prior to the effective date of the revisions. However, this time period may be waived
185 by the Accepting Municipality in response to emergency conditions.

186 Section 3. Notifications

187 Upon becoming aware of any accidental prohibited discharge to its wastewater system, the
188 Discharging Municipality will immediately notify the Accepting Municipality and applicable
189 Downstream Systems by telephone. The notification shall include, to the best of the
190 Discharging Municipality's knowledge, the location of the discharge, materials discharged,
191 concentration and volume and corrective actions taken or to be taken. Within seven days
192 following the discharge, the Discharging Municipality shall submit a detailed written report to
193 the Accepting Municipality describing the cause of such discharge and the measures to be
194 taken by the user to prevent similar future occurrences. The written notification submitted to
195 the Discharging Municipality pursuant to its ordinance may be used for this purpose.

196 Section 4 Discharging Municipality Indemnification

197 The Discharging Municipality hereby covenants and agrees that it will fully comply with the
198 Federal, Commonwealth, Allegheny County and Downstream System laws, rules and
199 regulations and it will indemnify, defend and hold the Accepting Municipality harmless from
200 any damages, costs, expenses, or fees (including but not limited to professional fees) arising
201 out of or resulting from any noncompliance of said Laws by the Discharging Municipality or
202 its users.

203 Section 5 Discharging Municipality Response to Prohibited Discharges

204 Upon the discovery of the discharge or conveyance of any prohibited substance or of
205 substances in their volume or concentrations violate the Accepting Municipality's Sewer Use
206 Ordinance, Federal, Commonwealth, Allegheny County or Downstream System regulations,
207 the Discharging Municipality shall take immediate action to locate and eliminate the cause or
208 causes of the violations of this Agreement or to implement such alternative measures as are
209 acceptable to the Accepting Municipality to mitigate or diminish the adverse impacts to the
210 Accepting Municipality resulting therefrom. If the Discharging Municipality does not do so
211 promptly after receiving written notice from the Accepting Municipality, the Accepting
212 Municipality shall have the right to take whatever measures are necessary to remedy the
213 violations, including, but not limited to, limiting the discharge from the Discharging
214 Municipality and/or terminating this Agreement and disconnecting and diverting all of the
215 sewage from the Discharging Municipality.

216 Section 6 Emergency Response Plan

The Discharging and Accepting Municipalities shall prepare an Emergency Response Plan
for coordinating efforts in the event of an accidental discharge of prohibited substances,
equipment failure, structural damage to sewers or other mishap that could result in violations
of Federal, Commonwealth, Allegheny County or Downstream System regulations, damage
to the environment or threaten public health and safety.

ARTICLE V SERVICE CHARGES

Section 1 Cost Allocation Principles

- A) It is the intent of the Accepting Municipality that each user of Accepting Municipality's
wastewater system pay its proportionate share of operation, maintenance,
replacement and capital costs within its service area, based on the user's
proportionate contribution to the total wastewater loading from all users.
- B) User costs, including those attributable to Discharging Municipalities, include fixed
costs and variable costs as defined herein.

Section 2 Cost Allocation Formulae¹

The annual service charge to the Discharging Municipality shall include the Discharging
Municipality's proportionate costs for wastewater transport, wastewater treatment,
administrative costs plus any surcharges or additional fees charged by Downstream
Systems. If these formulae are in conflict with the provisions of service charges from
Downstream Systems, the provisions of Downstream Systems shall prevail. The cost
allocation formulae in effect as of the effective date of this Agreement are shown on
Attachment D of this Agreement and are incorporated herein by reference.

Section 3 Cost Allocation Factors

The following factors shall be used in calculating Discharging Municipality's proportionate
share of joint annual costs:

- A) The annual quantities of the following parameters discharged to Accepting
Municipality's system:
1. Wastewater (including sewage generated from the use of potable water,
clearwater and other sources) as determined through flow metering at point(s)
of system interconnection or through other means consented to by the parties
to this Agreement.
 2. Biochemical Oxygen Demand
 3. Total Suspended Solids
 4. (Others as appropriate)
- B) The estimated proportion of the Accepting Municipality's annual costs of its sewer
collection system represented by the sewers used in the transport of the Discharging
Municipality's sewage to the Downstream System or the Accepting Municipality's
wastewater treatment plant.

¹ The following formula are illustrative of one approach, the appropriate cost allocation
approach for your municipality may differ.

217 Section 4 Periodic Revisions to the Cost Allocation Formula

- 218 A) The Accepting Municipality shall calculate the Discharging Municipality's and the
219 Accepting Municipality's annual costs for the next calendar year using:
- 220 1. A three year historical moving average to determine the proportionate shares
221 of wastewater flows and loadings.
 - 222 2. Projected costs for the next calendar year, including the Accepting
223 Municipality's annual budget and the anticipated service charges from
224 Downstream Systems (if applicable).
 - 225 3. Costs shall include contributions to operating and debt service reserve funds
226 which the Accepting Municipality may reasonably establish.
- 227 B) No less than once every five years, the Accepting Municipality will evaluate its cost
228 allocation formulae to determine the adequacy of revenues collected and the
229 continued proportionality of the cost allocation formula. The cost allocation formula
230 will be modified as required.

231 Section 5. Billing Procedures

- 232 A) The Accepting Municipality shall notify in writing the Discharging Municipality
233 annually _____ days prior to the end of the calendar year as to the service charges
234 for the coming year. The data, assumptions and formula used in the calculation of
235 the service charges shall be provided to the Discharging Municipality.
- 236 B) The Accepting Municipality shall send a bill to the Discharging Municipality on a
237 quarterly schedule. The quarterly bills will be based upon the actual flows and
238 loadings from the previous quarter.
- 239 C) The Discharging Municipality shall pay the Accepting Municipality within _____ days
240 of receipt. After _____ days, a service charge of _____ percent shall be imposed
241 on any unpaid balances.
- 242 D) Any provisions of this Agreement that are in conflict with

243 Section 6. Other Charges and Fees

244 The Accepting Municipality may collect reasonable charges or fees from the Discharging
245 Municipality to provide for the recovery of costs associated with implementation and
246 enforcement of this Agreement. These fees shall be in addition to the normal service
247 charges. Charges and fees may include:

- 248 1) Fees for monitoring, inspections and surveillance;
- 249 2) Fees for laboratory analyses.
- 250 3) Fees for permit applications
- 251 4) Appeal fees;
- 252 5) Charges for emergency actions or repairs;
- 253 6) Other fees necessary to carry out the requirements stipulated herein.

254 Section 7 Connection Fees

255 The Accepting Municipality may at its discretion assess a Connection Fee pursuant to the
256 Pennsylvania Municipalities Authority Act or other applicable enabling legislation for new

connections within the service area. Provided that connection fees for the connection of
existing private residences which, prior to connection, utilize on-lot wastewater systems shall
be payable in quarterly installments over a _____ year period.

Section 8 Surcharge for Excessive Discharge Volumes

- A) Notwithstanding other remedies available through this Agreement; the Accepting
Municipality may impose an excessive flow surcharge upon the Discharging
Municipality for each month in which that month's average daily flow exceeds the
volumetric limit set in Section 4 of this Article.
- B) The surcharge shall be based on the excessive volume, defined as the difference
between actual flow (measured or estimated) and the volumetric limit specified in
Section 4, multiplied by _____ times the flow component of the regular service charge.
- D) Excessive flow surcharges paid by the Discharging Municipality shall be deposited
into a trust account.
- E) Excessive flow surcharge revenues shall be utilized as follows:
1. To pay any costs incurred by the Accepting Municipality in implementing the
surcharge.
 2. Rebated to the Discharging Municipality for documented costs incurred in the
removal of excessive clearwater from its wastewater system.

Section 9 Conflicts with Prior Covenants

Any aspect of this Agreement that conflicts with provisions of outstanding bonds held by the
Discharging Municipality or the Accepting Municipality shall be superseded by the conflicting
bond covenants

ARTICLE VI OPERATION OF WASTEWATER SYSTEM

Section 1 Operation of Wastewater System

- A) The Accepting Municipality shall operate its wastewater system (including
conveyance and treatment facilities and related appurtenances) in compliance with
any NPDES permitting requirements and with Federal, Commonwealth, Allegheny
County and Downstream System regulations.
- B) The Accepting Municipality shall hold the Discharging Municipality harmless for any
violations of Federal, Commonwealth or Allegheny County regulations or policies that
are not directly or indirectly resultant from the Discharging Municipality's violation of
this Agreement or of the Accepting Municipality's sewer use ordinance.

Section 2 Future Regulatory Requirements

- C) Federal, Commonwealth or Allegheny County regulations promulgated after the
effective date of this Agreement which are applicable to the Accepting Municipality
shall also be applicable to the Discharging Municipality.

- 257 D) The Discharging Municipality and Accepting Municipality agree to modify this
258 Agreement as necessary to bring the rights and responsibilities of this Agreement
259 into conformance with Federal, Commonwealth or Allegheny County regulations
260 promulgated after the effective date of this Agreement.
- 261 C) The Accepting Municipality shall make such changes in and additions to its
262 wastewater system as may be necessary to enable Wastewater System to comply
263 with Federal, Commonwealth or Allegheny County regulations promulgated after the
264 effective date of this Agreement.
- 265 1. The Accepting Municipality shall provide the Discharging Municipality with an
266 opportunity to comment on proposed changes that may affect the costs to be
267 paid by the Discharging Municipality.
 - 268 2. Cost Allocation
- 269 The Accepting Municipality shall, at their sole discretion, issue bonds, seek
270 grant funding or otherwise raise funds necessary for changes and additions to
271 its wastewater system. The Accepting Municipality shall have the right to
272 allocate costs resulting from changes and additions to the Discharging
273 Municipality and other discharging municipalities and users. These costs
274 shall be allocated amongst the discharging municipalities proportionately to
275 their utilization of the system.

276 **ARTICLE VII IMPLEMENTATION**

277 **Section 1. Liabilities in the Event of Default**

- 278 A) Either municipality violating any provisions of this Agreement shall be liable to the
279 other for any expense, loss, or damage incurred due to such violation and for any
280 penalties assessed by reason of such violation.
- 281 B) Actions taken by the violating municipality in response to notifications, orders or
282 enforcement activities initiated by the other municipality in no way relieve the user of
283 liability for any violations occurring before or after the violator's action.

284 **Section 2. Dispute Resolution**

285 In the event of disputes between the Discharging and the Accepting Municipalities
286 concerning any aspect of this Agreement, the Municipalities Shall:

- 287 A) Make every reasonable effort to resolve the dispute through discussion and
288 negotiation between their respective Boards of Directors and/or their respective
289 wastewater management.
- 290 B) Submit to informal mediation through the Allegheny County peer review and dispute
291 resolution.²
- 292 C) Enter formal arbitration pursuant to Pennsylvania statute
- 293 D) Seek injunctive relief and/or litigation in a court of competent jurisdiction.

² The establishment of such a Board is a recommendation in the Comprehensive Sanitary Sewage Management Plan (page 9-2).

Section 3. Duration and Renewal of the Agreement

- A) This Agreement shall expire at midnight on the _____ day of 20__ . This Agreement shall be automatically renewed upon expiration for a period of _____ unless the Discharging Municipality or the Accepting Municipality transmits in writing, objections to this automatic renewal no less than _____ year(s) prior to the expiration date.
- B) The party objecting to renewal shall specify the basis for its objections and propose resolutions to its objections.
- C) Notwithstanding paragraphs 3(a) and 3(b) above, this Agreement will remain in effect if its expiration or termination of this agreement would result in violation of any Federal, Commonwealth of Pennsylvania or Allegheny County code, damage to the environment or a public health risk.

Section 4. Indemnification

A) **Indemnification of the Discharging Municipality**

The Accepting Municipality shall indemnify and save the Discharging Municipality harmless for all costs and expenses (except those arising from material violations of this Agreement, Federal, Commonwealth, Allegheny County or Accepting Municipality laws, rules and regulations or except as otherwise provided for in this Agreement), liability, claims and demands of any sort arising out of the construction, extension, replacement, operation, maintenance, or repair of the Accepting Municipality's wastewater system.

B) **Indemnification of the Accepting Municipality**

The Discharging Municipality shall indemnify and save the Accepting Municipality harmless from all costs and expenses (except those expressly arising from material violations of this Agreement, Federal, Commonwealth, or Allegheny County laws, rules or regulations or except as otherwise provided for in this Agreement), liability, claims and demands of any sort, as to all matters in connection with the Discharging Municipality's wastewater system.

Section 5. Annual Coordination

- A) The Discharging Municipality and the Accepting Municipality shall provide each other with copies of their respective Chapter 94 reports.
- B) The Discharging Municipality and the Accepting Municipality shall meet no less than once annually to discuss any outstanding and anticipated issues related to the implementation of this Agreement.

ARTICLE VIII EXCLUSIVITY OF WASTEWATER SERVICES

Section 1 Accepting Municipality as the Exclusive Agency

The Discharging Municipality covenants and agrees that the Accepting Municipality shall be the exclusive agency during the life of this Agreement to accept wastewater for conveyance and or treatment for the service area defined within this Agreement.

Section 2 Accepting Municipality Right of First Refusal

The Discharging Municipality may enter inter service agreements with other public or private agencies for wastewater conveyance or treatment for all volumes of wastewater in excess of the volumetric limits set in this Agreement. However, the Accepting Municipality shall have the first right to provide such services provided that the Accepting Municipality's service charges are less than or equal to alternatives available to the Discharging Municipality.

ARTICLE IX SEVERABILITY

The invalidity of any section, clause, sentence, or provision of this Ordinance shall not affect the validity of any other part of this Ordinance which can be given effect without such invalid part.

- ATTACHMENT A SERVICE AREA MAP
- ATTACHMENT B POINTS OF CONNECTION
- ATTACHMENT C FLOW MONITORING PROTOCOLS
- ATTACHMENT D COST ALLOCATION FORMULAE

A) The Discharging Municipality's annual costs for its use of the Accepting Municipality's sewers to transport wastewater to a Downstream System or to Accepting Municipalities's wastewater plant shall be calculated using the following formula:

$$\text{DM costs} = ((\text{DMTF} / \text{AMTF}) \times \text{AMTVC} \times (\text{SSVC} / \text{AMTVC})) + ((\text{DMFCA} / \text{SSDC}) \times \text{FC}) + \text{AC}$$

Where:

DMTF = DM's total annual flows entering the AM wastewater system
AMTF = AM's total annual flows
AMTVC = AM's total annual variable³ costs
SSVC = Shared sewer⁴ variable costs
AMTVC = AM's total variable costs
DMFCA = DM's capacity allocation within the AM system
SSDC = AM's shared sewer design capacity
FC = Fixed costs⁵
AC = Administrative costs attributable to the DM.

B) (if applicable) The Discharging Municipality's annual variable costs for wastewater treatment at the Accepting Municipality's wastewater treatment facility shall be calculated using the following formula:

$$\text{DM variable treatment costs} = ((\text{DMTF} / \text{AMTF}) \times \text{FlowVC}) + ((\text{DMBOD}_5 / \text{AMTBOD}_5) \times \text{BOD}_5\text{VC}) + ((\text{DMTSS} / \text{AMTSS}) \times \text{TSSVC}) + ((\text{Dmn} / \text{AMn}) \times \text{nVC})$$

Where:

- ³ Variable costs are those that vary materially by wastewater flow volumes such as pumping costs.
- ⁴ Shared sewers are the portion of the Accepting Municipality's sewer system through which flows from the Discharging Municipality are transported.
- ⁵ Fixed costs are those that do not vary by wastewater flow volumes such as debt service, etc.

DMTF = DM's total annual flows entering the Accepting Municipality wastewater system

AMTF = Accepting Municipality's total annual treatment plant flows

FlowVC = Flow related variable treatment costs

DMBOD₅ = DM's total annual biochemical oxygen demand

AMTBOD₅ = Total annual biochemical oxygen demand loading at the treatment plant

BOD₅VC = Variable costs related to the treatment of BOD₅

DMTSS = DM's total annual total suspended solids

AMTSS = Total annual total suspended solids at the treatment plant

TSSVC = Variable costs related to the treatment of suspended solids

Dmn = DM's total annual loading of any additional treatment parameter.

C) (if applicable) The Discharging Municipality's annual fixed costs for wastewater treatment at the Accepting Municipality's wastewater treatment facility shall be calculated using the following formula:

$$\text{DM fixed treatment costs} = ((\text{DMFCap} / \text{AMDFC}) \times \text{FlowFC}) + ((\text{DMBOD}_5\text{Cap} / \text{AMTBOD}_5\text{Cap}) \times \text{BOD}_5\text{FC}) + ((\text{DMTSSCap} / \text{AMTSSCap}) \times \text{TSSFC}) + ((\text{DmnCap} / \text{AMnCap}) \times \text{nFC})$$

Where:

DMFCap = DM's flow capacity allocation at the Accepting Municipality treatment plant
AMDFC = AM's treatment plant design flow capacity
FlowFC = Flow related fixed treatment costs
DMBOD₅Cap = DM's allocated capacity for the treatment of BOD₅
AMTBOD₅Cap = Design capacity for BOD₅ at AM's treatment plant
BOD₅FC = Fixed costs related to the treatment of BOD₅
DMTSSCap = DM's total annual total suspended solids
AMTSSCap = Design capacity for TSS at AM's treatment plant
TSSFC = Fixed costs related to the treatment of suspended solids
Dmn = DM's total annual loading of any additional treatment parameter.