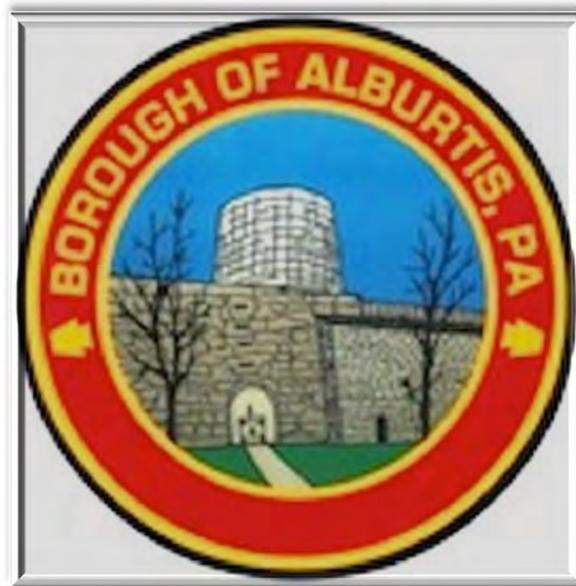


# BOROUGH OF ALBURTIS SEWER DEPARTMENT

*Capacity, Management, Operations, and Maintenance  
Program for Sewers*

Borough of Alburdis  
Lehigh Co., Pennsylvania



**February 2018**

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## Table of Contents

EXECUTIVE SUMMARY .....	4
EXISTING SANITARY SEWER SYSTEM .....	4
CMOM ACTIVITIES.....	5
PUMP STATION.....	6
CMOM PROGRAM GOALS.....	7
COLLECTION SYSTEM CAPACITY ASSURANCE PROGRAM.....	13

### APPENDICES

- APPENDIX A** – General Aerial Map of Alburdis
- APPENDIX B** – General Sanitary Sewer Map of Alburdis
- APPENDIX C** – Alburdis Meter Basins
- APPENDIX D** – Inspection Forms
- APPENDIX E** – Western Lehigh Interceptor Overview Sewer Map
- APPENDIX F** – Borough of Alburdis Projected Development Flows
- APPENDIX G** – Borough of Alburdis CCTV Inspection Photos (LCA)

### ABBREVIATIONS

- CMOM – Capacity, Management, Operations and Maintenance
- CCTV – Closed Circuit Television
- CIP – Capital Improvement Program
- DIP – Ductile Iron Pipe
- EPA – Environmental Protection Agency
- GIS – Geographic Information System
- I/I – Infiltration/Inflow
- LCA – Lehigh County Authority
- LF – Lineal Feet
- NPDES – National Pollution Discharge Elimination System
- PADEP – Pennsylvania Department of Environmental Protection
- PVC Pipe – Polyvinyl Chloride Pipe
- RCP – Reinforced Concrete Pipe
- SCARP – Sewer Capacity Assurance and Rehabilitation Program
- SSO – Sanitary Sewer Overflow
- VCP – Vitriified Clay Pipe
- WLSP – Western Lehigh Sewerage Partnership
- WWTP – Wastewater Treatment Plant

## **EXECUTIVE SUMMARY**

The Borough of Alburtis, is a suburb of Allentown, and is included in the Allentown-Bethlehem-Easton Area, located in Lehigh County, Pennsylvania. The borough was named after Edward K. Alburtis, a civil engineer involved in constructing a portion of the East Pennsylvania Branch of the Philadelphia and Reading Railway. According to the U.S. census the population in accordance with the 2016 census is 2,563. The Borough is comprised of 0.7 square miles, a total of 910 housing units with 881 units occupied.

The Borough is served by the East Penn School District from grades kindergarten through 12<sup>th</sup>. The school district was established in 1952 and contains Alburtis, Emmaus, Macungie, Lower Macungie and Upper Milford Township all located within the Lehigh Valley Region. The school district operates one high school, two middle schools and seven elementary schools and is noted for its academic excellence. In addition, the Borough also comprises of residential and commercial properties.

As the infrastructure throughout the borough continues to be developed, the demand for repairing the existing sanitary sewer collection increases. A table is provided in Appendix F projecting the rise in population and the anticipated increase in sanitary sewer flows. The Borough is currently participating in the regional Sewer Capacity Assurance and Rehabilitation Program (SCARP) which is aimed at reducing flows within the Borough's sanitary sewer collection system. To further assist with the SCARP program, a Capacity, Management, Operations, and Maintenance (CMOM) program is being implemented to better manage, operate, and maintain the sanitary sewer collection system. Borough Codes Chapter 65 provides the basis for the management operation, maintenance, testing and specifications for the sanitary sewer system.

## **EXISTING SANITARY SEWER SYSTEM**

A sanitary sewer collection system was first discussed in 1945 in order to convey municipal waste water from residential, commercial and industrial properties.

The Borough of Alburtis sanitary sewer system is owned and operated by the Borough. The Borough Public Works Department maintains the sewer system and currently employs 4 full time employees. The collection system is comprised of approximately 9.27 miles of sanitary sewer pipe and serves approximately 60% of the Borough's population. The initial sanitary sewer system was constructed between 1968 and 1972. Extensions to the public sewer system were added primarily by development growth over the years accounting for its present size. Currently the Borough system customer base consists of 929 residential, 26 commercial and 1 industrial customer for a total of 956 customers. Table 1.1 presented on the next page depicts the pipe type and length of pipe within the Borough. A sanitary sewer map is provided in Appendix B which also provides the layout of the sanitary sewer collection system. According to the Borough Code, Chapter 65-233, the Borough is responsible for the lateral from the main to the curb line (or property line). The property owner is responsible for maintenance of the lateral from the curb line (or property line) to the building.

**Table 1.1: Alburdis Sanitary Sewer Pipe Lengths**

<b>Alburdis Sanitary Sewer Pipe</b>		
<b>Pipe Type</b>	<b>Length (ft)</b>	<b>%</b>
<b>Polyvinyl Chloride Pipe (PVC)</b>	9,261	19
<b>Terra Cotta Pipe (Vitrified Clay Pipe)</b>	37,698	77
<b>Ductile Iron Pipe</b>	1,964	4
<b>Total Lineal Length (ft)</b>	<b>48,923</b>	

**Table 2.1: Alburdis Sanitary Sewer Pipe Diameter System Percentages**

<b>Alburdis Sanitary Sewer Pipe</b>	
<b>Pipe Diameter</b>	<b>%</b>
<b>8 inches or less</b>	82
<b>9-18 inches</b>	18
<b>19-36 inches</b>	0
<b>&gt;36 inches</b>	0

The sanitary sewer collection system also contains a total of 220 sanitary manholes and 312 clean-out locations. The sewer system connects to the Western Lehigh Interceptor System (WLIS), which is owned and operated by the Lehigh County Authority (LCA). The interceptor system consists of 18 miles of gravity sewers ranging in size from 8 to 36 in. diameter, two pump stations (Spring Creek Pump Station, Park Pump Station) and one Flow Equalization Basin located in Upper Macungie Township. An overall map of the WLIS is included as Appendix E.

**CMOM ACTIVITIES**

This Capacity, Management, Operations, and Maintenance (CMOM) Program for Sewers has been developed for the Borough of Alburdis wastewater collection system. The CMOM Program was derived in accordance with the Environmental Protection Agency (EPA) and the Pennsylvania Department of Environmental (PaDEP) regulations. The purpose of this manual is to instruct the operating and maintenance personnel in the proper understanding, techniques, references and necessary procedures for operating and maintaining the Borough of Alburdis sewage collection system. An understanding of the resources required of the operating staff to implement and maintain the program is necessary.

The CMOM is to serve as a guideline to the Borough of Alburdis to assure an efficient, effective, continuous operation in accordance with the rules and regulations set forth by the Commonwealth of Pennsylvania Department of Environmental Protection and other agencies associated with the sewer collection system. This manual outlines the recommendations and methods to maintain the sanitary sewer collection system.

## **PUMP STATION**

### **Pump Station Maintenance Guidelines**

The Borough of Alburdis owns one pump station which is the main operational component of the entire sewer system. The pump station is located near the intersection of West Penn Avenue and N. Main Street. The pump station experiences a variation in flows. As the Borough of Alburdis continues to develop in population, it is imperative to maintain the pump station at its full capacity. If the pump station is not well maintained, wear will increase, efficiency will decrease and eventually the pump station will fail. The proceeding sections provide the basis for maintaining a pump station through inspection, scheduling, work order systems and record keeping.

### **Inspection**

The Borough pump station is to be inspected periodically to evaluate its performance during wet and dry weather flows and to ensure the capacity of the sewer system meets design standards. Wet and dry weather flows are discussed later under Infiltration and Inflow (I/I). The Borough is responsible for inspecting the pump station, taking readings, monitoring pump cycles and maintaining the pump station.

### **Schedule**

A schedule with priorities of subjects, personnel and time is a convenient aid to reduce impulse searches for work. The schedule chart may be divided into daily, weekly, monthly, quarterly, semi-annually and yearly sections so that the entire range of maintenance functions can be observed.

### **Work Order System**

A work order system should be established to identify work to be accomplished, procedure priority and information on any special aspects of the job. Work order logs provide a record of when the work order was initiated and completed. The work order form to be completed during scheduled maintenance is included in Appendix D.

### **Record Keeping**

It is imperative to maintain a list of all items associated with the pump station. The following list provides a general overview of the items to record:

- Name and number given to the item
- Name of manufacturer or supplier
- Name of telephone number of representative
- Cost and installation date
- Model number, serial number, size and type
- Equipment data
- Maintenance item on hand
- Spare parts on hand.
- Relative cost of maintenance (man-hours, wages, cost of parts, contract cost)

The above sections discussed are the prime basis to maintaining a pump station for full operational capacity. The remainder of the CMOM program discusses the program goals and the procedures in operating and maintaining the Borough sanitary sewer collection system. The CMOM manual will conclude with an assurance program as the sanitary collection sewer system continues to develop.

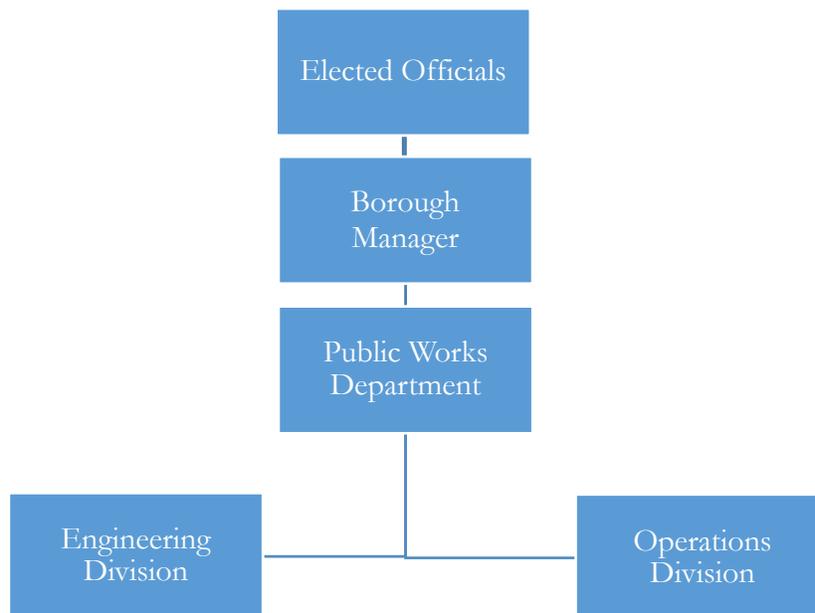
### **CMOM PROGRAM GOALS**

The goals of the CMOM include:

- Protection and preservation of the health, safety and welfare of the inhabitants of this Borough.
- Manage, operate and maintain the collection system to provide uninterrupted sanitary sewer service for all users within the Borough.
- Comply with all state and federal regulations pertaining to the sanitary sewer system, including NPDES Permit requirements.
- Implement programs and procedures to reduce and mitigate the impact of sanitary backups.
- Ensure new sewers are properly designed and installed.
- Receive, document and respond to user complaints or problems relating to the sanitary sewer system.
- Develop a written summary of the CMOM plan and perform required program audits.

### **Organizational Chart**

A sanitary sewer collection system requires an organized and competent staff to provide the services demanded by its customers. Below is the organizational structure designed to maintain an efficient and operating sanitary sewer collection system.



**Elected Officials** – Mayor and Council Members  
**Borough Manager** – Borough Manager  
**Public Works Department** – Public Works Director/Borough Engineer  
**Operations Division** – Operations Manager  
**Engineer Division** – Assistant Borough Engineer

### **Legal Authority**

The Borough should select and enforce the legal authority necessary to regulate the volume of flow entering the collection system, including residential, commercial, industrial and institutional customers. The legal authority may take the form of sewer use ordinances, contracts, service agreements and other legally binding documents. The Borough should have the authority to ensure new and rehabilitated sewers and connections have been properly designed, constructed and tested prior to operation. The authority should take the form of design and performance specifications in a sewer use ordinance or other legal documents such as a statute or series of contracts or joint power agreements which contains a minimum of general prohibitions, adequate grease control requirements and measures, prohibitions on stormwater inflow, infiltration from laterals and new construction standards. Strict control should be maintained over the connection of private sewer laterals to sewer mains which have significant potential as a source of infiltration. The following is a few of the regulations the Borough set forth to be in-place to act upon guiding the appropriate parties to maintaining an operational collection sewer system:

- Ordinance Chapter 65 – Alburdis Sanitary Sewer Systems Ordinance – This ordinance serves as the Borough’s requirements of connecting into the sewer system including use and capital fees, discharge permits, pretreatment of wastewater, proper reporting procedures, monitoring, administrative and enforcement remedies and violations.
- Clean Water Act (33 U.S.C. & 1251 et seq.) – The objective of this Act is to restore and maintain the chemical, physical, and biological integrity of the Nation’s waters.
- General Pretreatment Regulations (40 C.F.R. Part 403) – Provides the regulatory basis to require non-domestic dischargers to comply with pretreatment standards.
- Borough to comply with agreements set forth by the City of Allentown dated December 22, 1969, amended July 12, 1982. This agreement was set forth to resolve various issues concerning the transmission and treatment of wastewater and other related matters.
- Best Management Practices (65-206.1) – Includes: Treatment requirements, operating procedures, management plans, practices to control discharge pollutants.

### **Infiltration and Inflow (I/I)**

The Borough's I/I removal program is an ongoing operation which coincides with the Lehigh County Authority Waste Load Management Plan. The sewer collection system rehabilitation plan includes lining, replacing, repairing and cleaning existing sanitary sewer pipes, laterals and manhole structures.

The Borough is participating in the regional Sewer Capacity Assurance and Rehabilitation Program (SCARP) which is aimed at reducing infiltration and inflow within the Borough's sanitary sewer system.

The Borough, along with other municipalities and authorities tributary to the Western Lehigh Interceptor, entered into a cooperative effort named the Western Lehigh Sewerage Partnership (WLSPP) in 2009 for the purposes of reducing infiltration and inflow entering their sanitary sewer systems and contributing to a reduction of flows into the City of Allentown's wastewater treatment plant. From March through September 2009, a comprehensive flow monitoring program was conducted throughout the areas tributary to the Western Lehigh Interceptor. Three flow meters were installed in the Borough of Alburdis' sanitary sewer collection system. The primary goal of the flow monitoring study was to determine the sanitary sewer system's response to wet weather events and quantify the general location and severity of infiltration and inflow within each defined catchment in the overall system. The meter basin map is included in Appendix C. The study resulted in establishing 3 priority areas to focus I/I removal efforts.

An overflowing sanitary sewer system typically indicates there is on-going deterioration that needs to be addressed. Various test methods are used to determine the extent of the repairs that are required within the sanitary sewer system. These test methods include smoke testing, basement and private property inspections, above-grade stormwater observations, CCTV inspections during wet weather, nighttime flow weiring and manhole inspections. Two of the most common test methods are smoke testing and CCTV inspection. Both test methods are described in further detail below.

### Smoke testing

Smoke testing is a quick method to detect sources of inflow in sanitary sewer systems. Smoke testing is not used frequently. However, it is used when I/I is excessive. The Borough should have procedures to define the following:

- How sanitary sewer lines are isolated
- The maximum length of sanitary sewer pipe to be tested at a time.
- Smoke testing cannot be performed during rain, snow or wind weather events

Building inspections are conducted as part of the smoke testing program to determine sanitary sewer connections that were installed improperly. Smoke that enters the building is an indication that gases from the sanitary sewer system are entering the building. Smoke will exit the vent stacks of the surrounding properties if the sanitary sewer system is connected properly.



## **Closed Circuit Television (CCTV)**

Closed circuit television equipment is used to inspect the sewer line to determine the exact nature of the obstruction. T.V. inspection of the sewer main and laterals is also done annually by Lehigh County Authority personnel. The data collected from the T.V. inspection phase is reviewed by the Borough Engineer, and the system defects are prioritized for repair as part of the infiltration/inflow removal program. The work is scheduled so that the entire system is T.V. inspected every five (5) years. Documented photos from LCA along Front Street is included in Appendix G as a sample.

If it is determined that the sewer line cannot be cleaned due to the extent of the blockage, the problem area is further explored by excavating the area.



## **Sewer System Operation and Maintenance**

A preventative maintenance program is one of the best ways to keep a system in good working order. Regularly planned maintenance of the sanitary sewer will be part of the program. Work will be performed by the Borough or outside contractors. The maintenance will include routine inspections of the collection system addressing defects or other issues, investigate complaints and correct faulty conditions, proper sealing and/or maintenance of manholes and repairing deteriorating sewer lines. Maintenance is performed so that equipment failure is avoided, thereby minimizing system costs and environmental impacts by reducing breakdowns and the need for emergency maintenance.

## **Sanitary Sewer Lining Assessment**

The collection system's sewer lines should be evaluated by the Borough Engineer and Borough staff based on their knowledge of the system. The system can be evaluated through surface inspection and internal inspection. Surface inspection involves walking the sewer line length to record areas that may be sinking or ponding water. These areas found during surface inspection are indicators that the sewer line is deteriorating. Suspected areas found during surface inspection should be inspected using televising to determine the condition and extent of rehabilitation required.

## **Emergency Response**

There are various types of disruptions that can have a negative impact on the operation of the sewer collection system. These emergencies can include failure of a pump station, sanitary sewer overflows (SSOs) due to rain events or sanitary sewer line blockages. Emergency crews are on call 24 hours a day year round and reached through the Borough Office at 610-955-4777.

## **Record Keeping**

Accurate and complete record keeping is a crucial component to maintaining the collection system. With advanced technology, the use of digital recording is increasing by means of a Geographical Information System (GIS). Geographical Information System is a collection of computer hardware, software, and geographic data for capturing, managing, analyzing, and displaying all forms of geographically referenced information. With GIS, it is possible to link information (attributes) to location data, such as sewer complaints to addresses, maintenance records to sewer pipes or manholes within a system. These records may include televising, repairs, preventive and routine maintenance, as-built drawings of sewers, manhole inspection, smoke testing, dye testing, sanitary sewer construction standards and sewer system map updates. The files will be maintained by the Sewer Foreman and retained at the Borough office.

## **Inspection of Construction Work**

All work performed in connection with the extension, modification or improvement of public wastewater facilities within the Borough shall be required to conform to all applicable rules and regulations and shall be inspected during construction by an authorized representative of the Borough. All completed work shall be required to meet the approval of the Borough Engineer and shall be changed, modified, replaced, removed or otherwise corrected by the Contractor to an extent directed by the Borough Engineer.

## **Sanitary Sewer Overflow (SSO) Notification**

The Borough must notify customers and the PaDEP of a sanitary sewer overflow (SSO) event which includes projected lengths of time, road closings, etc. A representative from the Borough should be given the responsibility to properly communicate with the public of an SSO event. The following information must be reported for an SSO:

- Date
- Time
- Location
- Cause
- Volume of the overflow
- Methods used to alleviate SSO
- Remediation methods taken

A phone number shall be listed on the Borough's website for the public to report observed overflow events.

## **Budgeting**

The Borough must properly budget needed work each year to properly maintain the sanitary collection sewer system. Funding can come from a variety of sources. An inadequate budget results in a weak CMOM operating system. Therefore, maintaining costs, funding and budgets will result in a successful maintenance program. Currently, the annual sewer fund expenditure is approximately \$520,000.00. The Borough should review their rates charged to customers on an annual basis and adjust the rates accordingly.

## **Training**

Collection system employees are exposed to numerous challenging conditions and an adequate training program is necessary for employees to meet these challenges. Training programs should be developed to adequately prepare an employee to implement appropriate provisions of the CMOM program. Training may be in the form of formal off-site or on-site training, on the job training, college/vocational course work or other appropriate venues. Training is mandatory and is provided in the following areas:

- Routine line maintenance
- Environmental/safety regulations
- Confined Space Entry
- Traffic control
- Record Keeping
- Electrical and instrumentation
- Public relations and customer service
- SSO/Emergency response
- Pump station operations and maintenance

## **Communication With The Public**

Communication and customer service are key components to the CMOM program. Customers with concerns about the collection system can contact the Borough offices with their issues. Should issues arise, customers will be notified of impacts and the duration of time the customer will be affected until all necessary repairs are completed.

## **Updating and Auditing The CMOM**

Updating the CMOM ensures that the CMOM has the most recent information while auditing the CMOM means making sure the CMOM is still relevant and may involve adding or removing sections of the plan. Updating the CMOM can be done by anyone who has adequate knowledge of the Borough's collection system, while auditing the CMOM should be done only by those who have a sufficient background in CMOM activity and a comprehensive knowledge of the Borough's collection system. An audit of the sanitary sewer collection system will be performed at least every five (5) years. See Table 2.1 on page 12 for a suggested table for tracking the CMOM audits as well as any changes that have occurred as a result of an audit.

**Table 3.1: CMOM Audits**

<b>CMOM AUDITS</b>				
<b>Manual No.</b>	<b>Name</b>	<b>Entity</b>	<b>Date</b>	<b>Revisions Made</b>

**COLLECTION SYSTEM CAPACITY ASSURANCE PROGRAM**

A Sewer Capacity Assurance Program shall be developed to monitor the flows throughout the Borough sewer system. The program shall include flow monitoring of dry and wet weather flows. Reporting from this program shall be used to located sources of infiltration/inflow to the sewer system. The assurance program must consider new sewer connections as a contribution to the overall flow capacity of the sanitary sewer collection system. A plan must be prepared and implemented to model peak flow conditions during wet and dry weather flows that are potentially contributing to the sewer system. At a minimum, the plan must include the following:

**Evaluation** – The Borough should take steps to model the collection system that is contributing to the LCA Interceptor. The model should provide estimates of peak flows associated with conditions similar to those causing overflow events, provide estimates of the capacity of key system components, identify hydraulic deficiencies and identify the major sources that contribute to the peak flows associated with overflow events. The sanitary sewer should be monitored to determine if the capacity of flow is decreasing in pipes and manholes.

**Capacity Enhancement Measures** – Short and long term actions should be developed to report the sewer system capacities. The report should be used to establish priority, alternative analyses, and recommendations regarding upsizing sewers with insufficient capacity.

**Plan Updates** – The overall plan should be updated regularly to include new and rehabilitated sanitary sewer and manhole locations. The plan should be updated to reflect available information on the performance measures that have been implemented.

Identifying problem areas allows the Borough to make the necessary repairs and improvements to maintain a maximum sanitary sewer flow capacity through the sewer collection system. The capacity of the sewer collection system changes as the system ages, new connections are created and existing connections change in usage. Certification of adequate sanitary sewer collection system capacity is required to confirm each sewer line (existing and new) contains adequate sewer capacity to convey peak wet weather flows through all new and existing service connections without causing an excess surcharge. It is also required to assure the pump station transmits adequate sewage capacity during peak wet weather flow without causing an excess surcharge at the pump station or within the sanitary sewer collection system served by the pump station. The data obtained from the flow monitoring and modeling can be used to determine which sewers have insufficient capacity and/or are receiving significant I/I.

The CMOM program in conjunction with the SCARP program serves to set forth a systematic and reliable sanitary sewer collection system. By following the guidelines recommended in this manual, the Borough will be assured an efficient, effective and continuous operation of the sanitary sewer collection system.

**APPENDIX A**

**General Aerial Map of Alburdis**

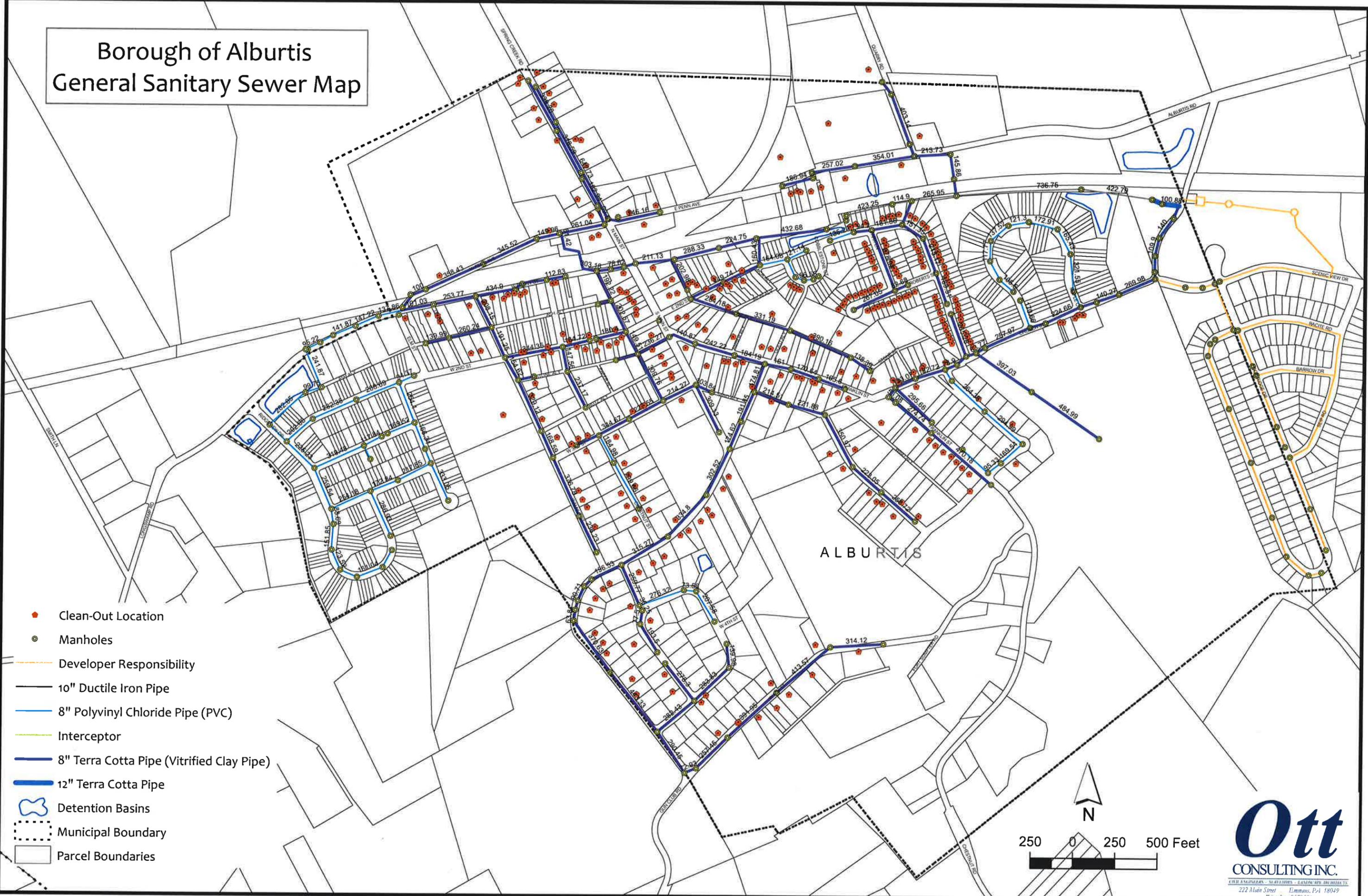


0 500 1,000 Feet

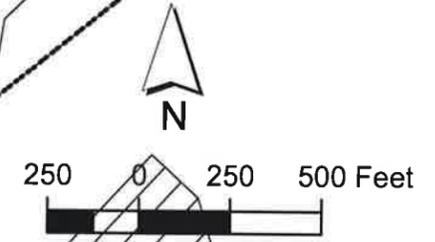
**APPENDIX B**

**General Sanitary Sewer Map of Alburdis**

# Borough of Alburtis General Sanitary Sewer Map



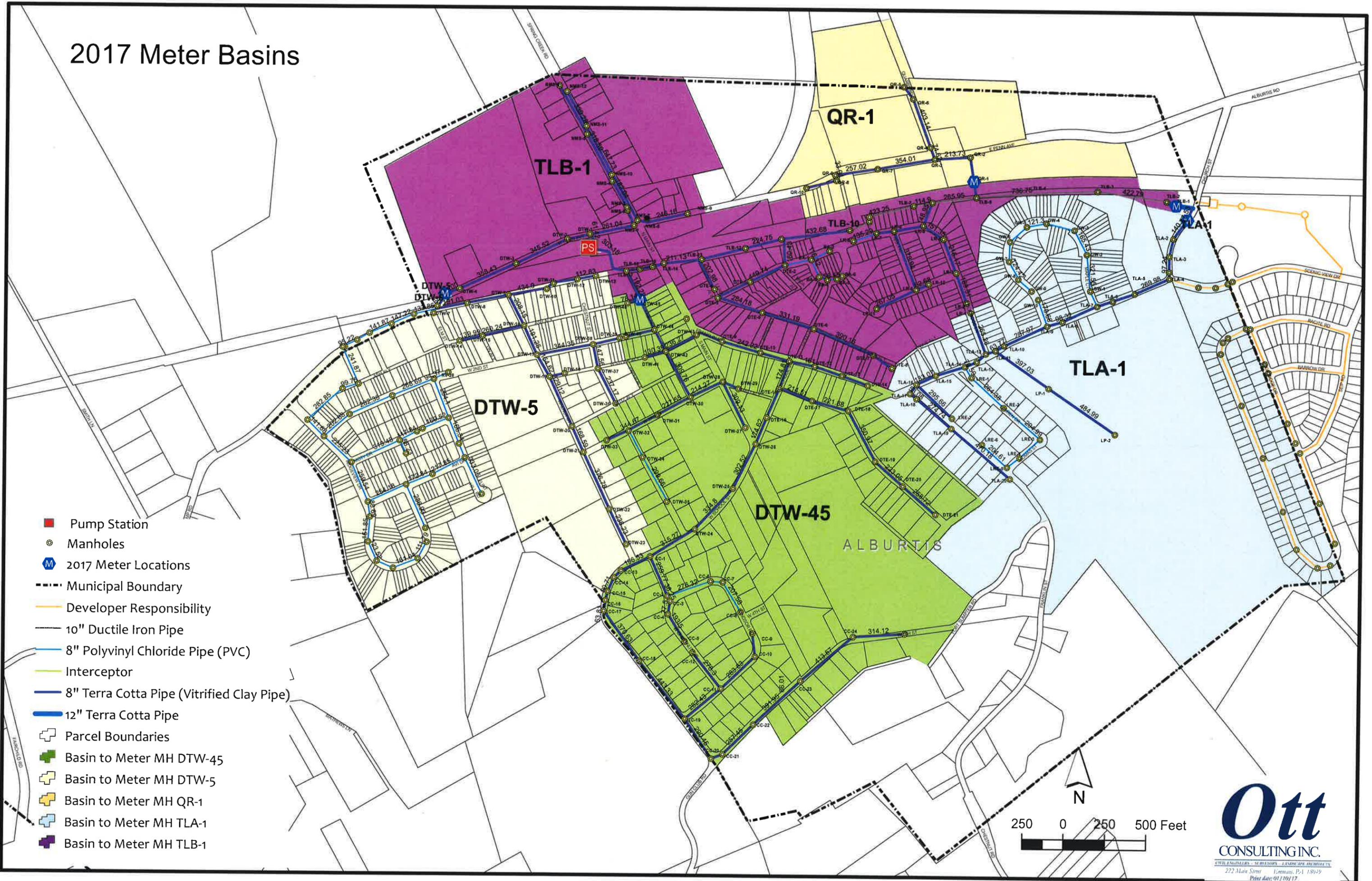
- ◆ Clean-Out Location
- Manholes
- Developer Responsibility
- 10" Ductile Iron Pipe
- 8" Polyvinyl Chloride Pipe (PVC)
- Interceptor
- 8" Terra Cotta Pipe (Vitrified Clay Pipe)
- 12" Terra Cotta Pipe
- ⬭ Detention Basins
- Municipal Boundary
- Parcel Boundaries



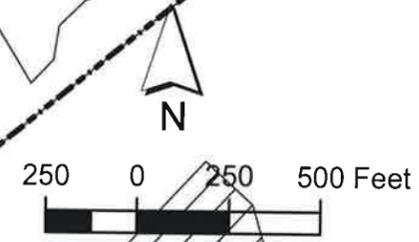
**APPENDIX C**

**Alburtis Meter Basins**

# 2017 Meter Basins



- Pump Station
- ⊗ Manholes
- Ⓜ 2017 Meter Locations
- - - Municipal Boundary
- Developer Responsibility
- 10" Ductile Iron Pipe
- 8" Polyvinyl Chloride Pipe (PVC)
- Interceptor
- 8" Terra Cotta Pipe (Vitrified Clay Pipe)
- 12" Terra Cotta Pipe
- ⊕ Parcel Boundaries
- ⊕ Basin to Meter MH DTW-45
- ⊕ Basin to Meter MH DTW-5
- ⊕ Basin to Meter MH QR-1
- ⊕ Basin to Meter MH TLA-1
- ⊕ Basin to Meter MH TLB-1



**APPENDIX D**  
**Inspection Forms**

BOROUGH OF ALBURTIS  
WORK ORDER

WORK ORDER NO. \_\_\_\_\_ DATE: \_\_\_\_\_

WORK TO BE PERFORMED:

MATERIALS TO BE PURCHASED:

WORK PERFORMED BY:

1. \_\_\_\_\_ HOURS

2. \_\_\_\_\_ HOURS

3. \_\_\_\_\_ HOURS

4. \_\_\_\_\_ HOURS

WORK COMPLETED:

SIGNED: \_\_\_\_\_

DATE: \_\_\_\_\_

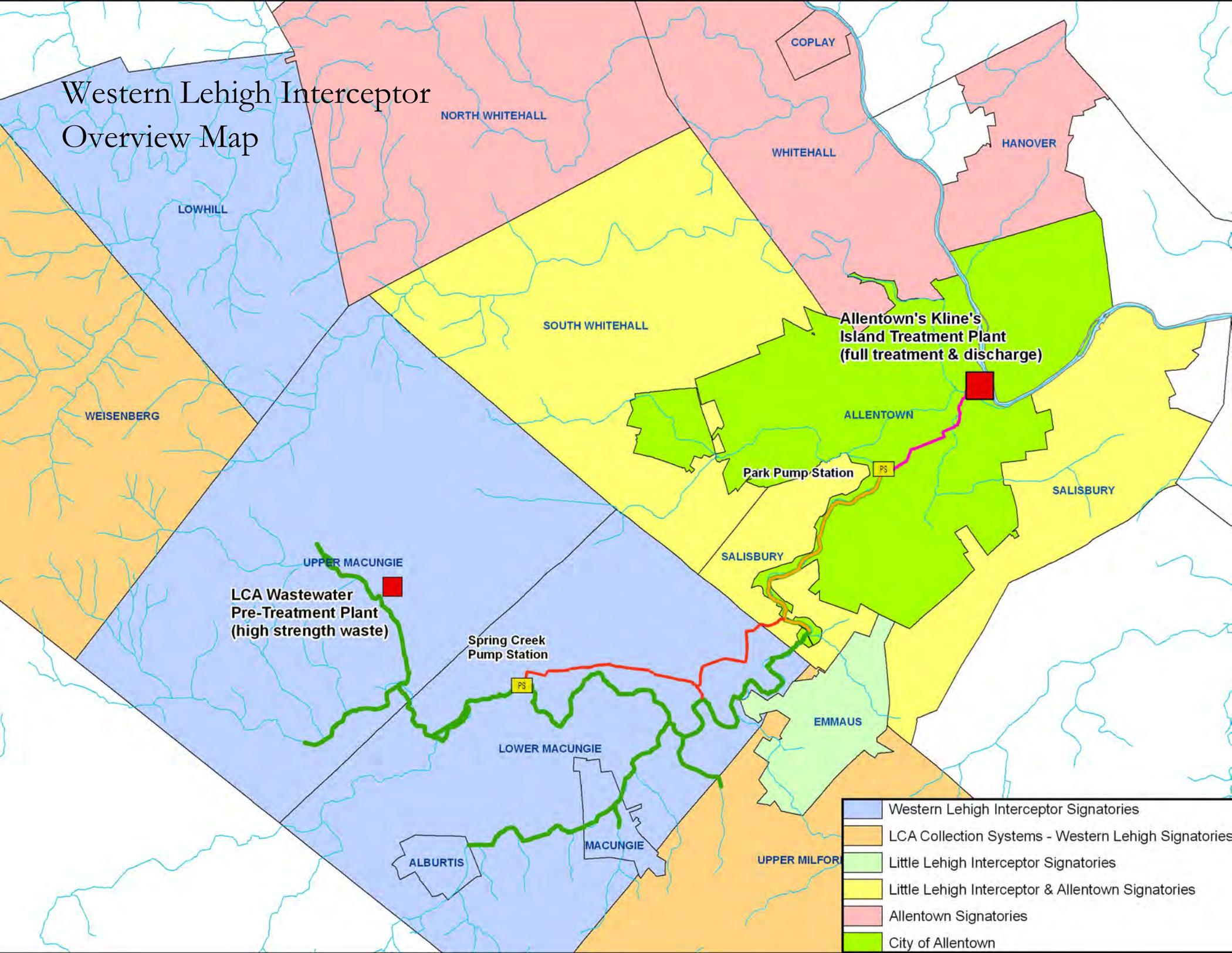
COMMENTS:



**APPENDIX E**

**Western Lehigh Interceptor Overview Sewer Map**

# Western Lehigh Interceptor Overview Map



- Western Lehigh Interceptor Signatories
- LCA Collection Systems - Western Lehigh Signatories
- Little Lehigh Interceptor Signatories
- Little Lehigh Interceptor & Allentown Signatories
- Allentown Signatories
- City of Allentown

**APPENDIX F**

**Borough of Alburis Projected Development Flows**

**Table 4: Projected Development Flows**

<b>Borough of Alburdis Projected Sewer Flows</b>				
<b>2020 Projection</b>				
<b>Population Growth</b>	<b>Industrial Growth (gpd)</b>	<b>Total New Flow (gpd)</b>	<b>Percent Increase over 2009 flows</b>	<b>Total Sanitary Flow (gpd)</b>
<b>14</b>	3,200	4,250	4%	123,560
<b>2030 Projection</b>				
<b>Population Growth</b>	<b>Industrial Growth (gpd)</b>	<b>Total New Flow (gpd)</b>	<b>Percent Increase over 2009 flows</b>	<b>Total Sanitary Flow (gpd)</b>
<b>192</b>	6,100	20,500	21%	144,020
<b>2040 Projection</b>				
<b>Population Growth</b>	<b>Industrial Growth (gpd)</b>	<b>Total New Flow (gpd)</b>	<b>Percent Increase over 2009 flows</b>	<b>Total Sanitary Flow (gpd)</b>
<b>237</b>	9,300	27,075	43%	167,760

Notes: Population and industrial growth estimates taken from development flows provided by Arcadis via e-mail on August 2, 2016.

**APPENDIX G**

**Borough of Alburton CCTV Inspection Photos (LCA)**

**Inspection photos**

City : <b>Alburdis</b>	Street : <b>Front St.</b>	Date :	Pipe Segment Reference :	Section No : <b>37</b>
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Photo: 39\_40\_620\_A.JPG  
 133.6FT, Broken Soil Visible, from 10 to 02 o'clock, within 8 inches of joint: YES

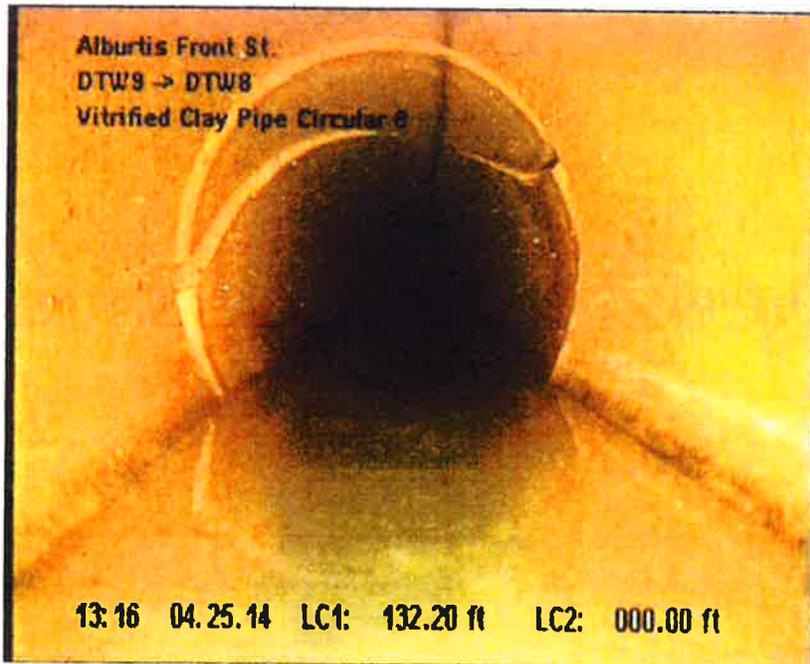


Photo: 39\_40\_620\_B.JPG  
 133.6FT, Broken Soil Visible, from 10 to 02 o'clock, within 8 inches of joint: YES