Control permits will be required for significant industrial users. Provisions will be set forth in agreement for addressing over-strength wastewater discharged to the sanitary sewer system.

The agreement, at a minimum, will contain procedures for inspection standards, pretreatment requirements, and building/sewer permit issues. The agreement, at a minimum, will include the prohibited discharge of fire and explosive hazards, corrosive materials, obstructive materials, oils or petroleum, or any material which may cause interference at the wastewater treatment plant.

3.6 Engineering

3.6.1 System Mapping

Copies of the sanitary sewer system and its critical components should be available for use in the office and by the field crews. A procedure for field crews to record changes or inaccuracies in the maps and mapping system should be provided.

The detailed mapping system for the sanitary sewer system should be continuously updated as repairs, maintenance, or other major projects are completed. Management of this data potentially can be done in conjunction with the Management Information System explained later in this section.

As part of the management of the system mapping, the following data should be available on each map:

- Scale
- North arrow
- Date the map was drafted
- Date of last revision
- Sewershed boundaries
- Property lines
- Other landmarks (roads, water bodies, etc.)
- Manhole and other access points
- Location of building sewers
- Street names
- SSOs occurrences
- Flow monitors
- Force mains
- Pump stations
- Lined sewers
- Main, trunk, and interceptor sewers
- Easement lines and dimensions
- Pipe material
- Pipe diameter
- Installation date
- Slope
- Manhole rim elevation
- Manhole invert elevation
- Distance between manholes

A systematic numbering and identification system has already been established to identify sanitary sewer system manholes, sewer lines and other items.

3.6.2 Design (Standard Details and Construction)

All design and construction should be completed in accordance with the Township's Standard Construction Details. The document containing a copy of the all Standard Construction Details should be prepared. This document should describe the procedures that the utility follows in the construction design review process. The Sewer Department Supervisor and Authority should be involved in the design review process.

This document should also include a procedure for testing and inspecting new or rehabilitated system elements both during and after the construction is complete. All construction sites should be supervised by qualified personnel to ascertain that the construction is taking place in accordance with the agreed upon plans and specifications.

Any rehabilitated manholes and sewers should be inspected upon completion of construction. Manholes should be tested for inflow and infiltration. Sewers should be checked using closed-circuit television.

The document should also include information regarding private service building sewer design and inspection standards. All equipment and system components should be standardized to ensure proper installation.

3.6.3 Permits

When repairs are made to the sanitary sewer system, permits must be obtained for the appropriate work. The following provides a brief summary of the necessary permits required to make repairs to the system.

Building Sewer Permit

In the event that a property owner is required to make repairs to their building sewer, a building sewer permit should be obtained through the Sewer Department. This permit specifies the construction standards for the installation of the building sewer. All repairs should be made in accordance with this permit. Inspections during the installation will be completed by an Inspector of the Sewer Department who is certified to inspect construction. A copy of the building sewer permit is provided in Appendix E.

3.6.4 Construction

Repairs completed to the Township's sanitary sewer system can be completed using a variety of different techniques.

Sanitary sewer lines can typically be rehabilitated using dig and replace methods, mechanical seals, chemical grouting, slip lining, spirally wound pipe and segmental lining, cured-in-place and fold-n-form lining techniques and pipe bursting. The majority of the Township's system can be rehabilitated utilizing dig and replace methods and cured-in-place and fold-n-form lining techniques. The other types of rehabilitation are not technically feasible for the repairs to the Township's system.

Manholes can typically be rehabilitated using dig and replace methods, cementitious lining, chemical grouting, structurally independent inserts, non-structural liner systems, manhole pans and mechanical seals. The majority of the manholes in the Township's system can be rehabilitated utilizing these methods except for structurally independent inserts and mechanical seals.

3.6.5 Sewer Evaluation/Rehabilitation

Upon the completion of the yearly inspections, a review should be conducted by the Sewer Department Supervisor, Authority Board and the Township Board to categorize and prioritize the components which were inspected. Upon review of the lines and manholes, each line and manhole should be prioritized according to severity. A review of previous years' inspections should be considered when prioritizing components to include items which may have not been addressed in previous years' projects. Considerations should also include locations relative to other components which will be addressed the following year as part of the system rehabilitation. Each year, approximately 1,500 linear feet of sewer lines and 8 manholes should be prioritized to be rehabilitated.

The list of components which will be included in the yearly rehabilitation projects should be completed by September of each year. Once the list has been prepared, a preliminary assessment of the costs associated with the project should be completed and presented to the Authority Board/ Township Supervisors Board no later than November at the Annual Budget Meeting. Once the project/budget has been approved by the Authority it should be presented to the township supervisors for approval.

3.6.6 Water Quality Monitoring

The Chapter 94 requires the owners and operators of sewerage facilities to manage waste loads discharged to the sewerage facilities in order to accomplish the objectives:

1. Prevent the occurrence of overloaded sewerage facilities.
2. Limit additional extensions and connections to an overloaded sewer system or a sewer system tributary to an overloaded plant.
3. Prevent the introduction into POTWs of pollutants which will interfere with the operation of the plant or pass through or otherwise be incompatible with the plant.
4. Improve opportunities to recycle and reclaim municipal and industrial wastewaters and sludges.

In order to provide for a review of the load on sewerage facilities and to insure that there is sufficient time to plan and construct needed additions, plant permittees shall submit a complete and accurate annual report, in duplicate, by March 31 of each year to the Regional Office, subject to the review of the Department.

3.7 Records

Keeping accurate records is an important element of the operation and maintenance of the sanitary sewer system. Records provide information for:

1. Determining the sanitary sewer system's operating and maintenance costs.
2. Determining future budgetary requirements.
3. Preparing preventative maintenance schedules.
4. Scheduling repairs.
5. Demonstrating compliance with PADEP and EPA policies.

3.8 Filing System

A filing system for the operation and maintenance records of the sanitary sewer system shall be setup and maintained by the Sewer Department's administrative staff. This filing system shall also include the other documents that have been prepared for the ongoing Township rehabilitation projects.

The standard forms in this document shall be used to ensure consistent, standardized data collection for the operation and maintenance of the sanitary sewer system.

3.9 Management Information Systems

A management information system should be utilized to track maintenance activities associated with the routine operation and maintenance of the sanitary sewer system. These records should be maintained for a period of at least ten years. The management information system should be capable of managing and tracking the following items:

- ❖ Complaint work orders
- ❖ Scheduled work orders
- ❖ Customer service
- ❖ Scheduled preventative maintenance
- ❖ Scheduled inspections
- ❖ Sewer system inventory
- ❖ Safety incidents
- ❖ Scheduled monitoring/sampling
- ❖ Compliance/overflow tracking
- ❖ Equipment/tools tracking
- ❖ Parts inventory

Written procedures should be provided for tracking information regarding accessing data and information, instructions for using the tracking system, updating the management information system, and developing and printing reports. The management information system should be updated on a semi- annual basis.

3.9.1 Geographic Information System

Geographic Information System (GIS) is a technological field that incorporates graphical features with tabular data in order to assess real-world problems. It is a system of computer software, hardware and data, and personnel to help manipulate, analyze and present information that is tied to a spatial location.

- Spatial Location – usually a geographic location
- Information – visualization of analysis of data
- System – linking software, hardware, data
- Personnel – a thinking explorer who is key to the power of GIS

GIS can be utilized as a tool to evaluate and review the assessment of Municipalities' assets and infrastructure, among other things. This section covers the possible uses of GIS as a tool to keep record of the condition of the collection and conveyance system, as well as, the private party portion of the Township's system.

As part of the adoption and implementation of the manual, the ease of use with which personnel can locate, review and make determinations is essential to timely responses or accurate record reviews. Data in this system can be accessed by a simple point and click of a computer mouse and the data for a component of the system can be viewed. This is not limited to just the collection and conveyance system, but rather it can be utilized by the Township for any of its key assets, whether it is traffic control, water system improvements, storm water system repairs, street restorations and paving or simply billing status.

The use of GIS could potentially combine the System Mapping and Management Information Systems in one data management system. In one system, personnel would be able to view all information that is critical to the operation and maintenance of the sanitary sewer system.

3.10 Complaints

All complaints received regarding the sanitary sewer system, which are not emergency situations, must be taken seriously and addressed with prompt action For the Township's sanitary sewer system. The procedure, for non- emergency complaints shall be transferred to the Sewer Department Supervisor and will be handled accordingly.

Complaints of an emergency nature should also be directed to the Sewer Department Supervisor and will be dealt with immediately. In the absence of the supervisor, all complaints or emergencies should go to the appointed crew leader. The Sewer Department will respond by sending a minimum of two employees to the reported location to investigate the complaint or emergency. After the Sewer Department has determined their findings, the crew leader should report directly back to the Sewer Department Supervisor of their findings and remedy.

A complaint response form, located in Appendix F, shall be used to keep a record of all complaint calls and a summary of the actions taken to respond to the complaint call. The Township's administrative staff shall be responsible for maintaining a file of all complaint response forms.

3.11 Emergencies

During daily business hours, the Sewer Department Supervisor or Township Secretary at the Township Office will receive emergency calls concerning the sanitary sewer system and shall immediately rout the call to the Sewer Department Supervisor or in his absence the appointed crew leader. The Sewer Department will immediately respond by sending a two man crew (minimum) to the reported location to investigate the reported emergency situation. If it is determined that the emergency situation is created by the sanitary sewer system, the Sewer Department Supervisor, or in his absence the appointed crew leader, will immediately initiate the activities required to respond to the emergency situation.

If an emergency response is required after daily business hours during the week or on a weekend or holiday, the person lodging the complaint will be routed to the 911 Call Center or the Old Lycoming Township Police Department. The Call Center or PD will then contact the Sewer Department Supervisor, or identified replacement if the Sewer Department Supervisor is not in the area, to the reported location to investigate the reported emergency situation. If it is determined that the emergency situation is created by the sanitary sewer system, the Sewer Department Supervisor will immediately initiate the activities required to respond to the emergency situation.

Included with the first Sanitary Sewer Annual Summary of Proposed Maintenance Activities, which will be prepared in 2012, the Sewer Department will prepare an Emergency Response Manual. The primary objectives for the Emergency Response Manual will be to provide a chain of command, a description of the general procedures to follow in response to the most common emergencies, an inventory of the equipment required to respond to emergencies and recommendations for the purchase of equipment, if necessary.

Situations requiring emergency response include:

1. Wastewater back-ups into homes or businesses.
2. Wastewater surcharges from manholes.
3. Collapsed pipes that create "open holes" in streets or yards.
4. Missing manhole lids.
5. Hazardous gases emanating from the sanitary sewer system.
6. A continuous flow of wastewater from a bypass discharge during dry weather conditions.

An emergency response form, located in Appendix F, shall be used to keep a record of all emergency calls and a summary of the actions taken to respond to the emergency call. The Township's administrative staff shall be responsible for maintaining a file of all emergency response forms.

Although measures will be taken to prevent emergencies, they are inevitable. Emergencies will arise that need to be addressed immediately. Emergencies will be reported to the Township and initial assessment of the situation will be completed by the Sewer Department Supervisor or an acceptable representative. After the emergency has been identified and deemed to be an actual emergency, all other inspections should be suspended until the emergency has been addressed. Once the necessary items have been addressed, a review of the emergency and any additional items that may need to be addressed will be completed. Emergencies should take precedence over any other tasks at the time of the emergency.

Once the emergency and the items involved with the emergency have been completed, a report should be prepared summarizing the work that was completed. A copy of the report should be kept on file for future reference.

3.12 Customer Service

As a utility within the Township, the sanitary sewer system is providing Township customers with a service. This service directly affects the customers if the system is not in proper working order. Formal presentations on the condition of the system and progress of major projects should be held to inform the community. The public should continue to be notified concerning major construction and maintenance work. Door hangers, newspapers, fliers, signs, Township Newsletter/web site, public radio or TV announcements are good avenues of providing information to the general public.

When construction or cleaning activities may affect a homeowner's property, the homeowner should be notified prior to activities. If cleaning is required following basement backups and overflows from manholes, procedures should be provided to the homeowner.

In the event that an issue arises, a customer fills out the Citizen Complaint Form. A blank form is attached in Appendix F. After the complaint form is received, a resolution to the complaint should be completed in a timely fashion. A customer service evaluation should be completed following activities associated with the sanitary sewer system. A blank customer evaluation form is attached in Appendix F. The customer evaluation is a useful tool in recognizing changes to the way activities are conducted and will allow the employees to make the appropriate changes to the way service is provided.

Records of customer service should be kept on file. These records should include the Citizen Complaint Form and Customer Evaluation Form which should include the personnel who received the complaint or request, name address, and telephone number of the customer, nature of the complaint or request, location of the problem to whom the follow-up action was assigned, date the follow-up action was assigned, date of the complaint or request, cause of the problem, date the complaint or request was resolved and feedback to the customer.

3.13 Periodic Review of Operation and Maintenance Manual

A very important factor in the operation and maintenance of the Township's sanitary sewer system is the knowledge and experience gained by the Sewer Department personnel in dealing with local conditions and performing maintenance tasks efficiently. Sometimes procedures other than those outlined in this document or recommended by manufacturers may appear to work better. For this reason, once every three years, a review and update (if necessary) of the Operation and Maintenance Manual is necessary to keep the Sewer Departments personnel informed of the best procedures for the operation and maintenance of the sanitary sewer system. The following steps shall be used to conduct the review.

1. The Sewer Department Supervisor is responsible for the review and updating of the Operation and Maintenance Manual. The Township's elected officials shall review these changes.
2. If it is deemed necessary, the Township's elected officials shall meet with the Sewer Department Supervisor to discuss these comments.
3. If it is determined that the Operation and Maintenance Manual needs to be revised, the elected official's shall be responsible for making the appropriate changes to the Operation and Maintenance Manual within 90 days.

Once the Operation and Maintenance Manual is revised, the revised Manual must them be approved for immediate implementation by the Board of Supervisors. The Sewer Department shall then implement the Manual, as revised.