VILLAGE OF OXFORD

CMOM PROGRAM

CAPACITY
MANAGEMENT
OPERATION
MAINTENANCE

JULY 31, 2016

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1.0 INTRODUCTION

Sanitary sewer collection systems have a finite capacity to carry wastewater based on the size of the system components. The size of the components is based upon an analysis of the contributory flows into the system plus a factor for growth. The analysis considers residential, commercial and industrial sources of flow plus a designed leakage rate for the system components. With time, the design basis for the system may change resulting in flows in excess of the designed flow. Changes can include population increases beyond the growth factor used in the design basis, integrity deterioration resulting in a leak rate greater than the design basis, and inappropriate storm water connections. These factors can lead to overflows of the system as the increased flows exceed the ability of the collection system or lift stations to convey the wastewater.

Likewise failing to maintain the collection system can result in overflows irrespective of any flow increases. Materials such as grease, rags, roots and other foreign objects can create blockages within the system. Regular maintenance and cleaning regiments can eliminate these occurrences, particularly grease and root development.

Overflows, regardless of the cause, release untreated sewage to surface waters, at times leading to substantial negative impacts on the receiving body. The majority of impaired waters as recorded by States lists are impaired due to nutrients, sediment, pathogens, metals and organic enrichment. Sewage overflows contribute to these impairments and can have acute impacts such as fish kills and beach closures.

2.0 GOALS

The Village of Oxford has developed this Capacity, Management, Operation and Maintenance Plan to put into place the ideas, concepts and procedures to be used to prevent sewer overflows to the extent possible and practicable. The goals of the plan are:

• Prevent overflows from the sanitary sewer to the extent possible and practicable.
• Manage the assets of the Public Works Dept. inclusive of personnel and equipment to affect a regular maintenance program and to be able to respond to emergency overflows of the system.
• Promote safety by verifying all workers have the required equipment prior to any work performed. Keep the Public Works crew up to date with all safety procedures through continuing education classes.
• Prioritize maintenance, rehabilitation and replacement activities for the portions of the collection system.
• Complete a percentage of preventative maintenance on the collection system including, but not limited to: televising, cleaning, root removal and inspections.
• Enforce appropriate ordinances that will help to better manage the performance of the collection system, including inspections for private sump connections and I/I reduction. Review and update these ordinances as necessary.
• Work together with the Village Board to ensure there is ample funds budgeted for any projected projects on the collection system.
• Educate the public on the importance of an efficient collection system through mailings, radio or newspaper announcements and information on the Village's website.

3.0 COLLECTION SYSTEM MANAGEMENT

Management of the Public Works Dept. will be a proactive endeavor so that we are able to meet the goals of this plan as well as to provide our customers with fiscally, technically and environmentally sound operations of the system. An overview of our system along with our management approach is contained in the following sections.

3.1 Organization and system Parameters

3.1.1 System Profile

The Village of Oxford sanitary sewer system consists of gravity and forced main components. The system is not interconnected with other sanitary collection systems. Maps of the system are maintained by the utility at Village Hall 129 S Franklin Ave. and the Public Works Office 129 S Franklin Ave. The system profile is as follows:

Table 3-1: System Profile System Name & Address	Village of Oxford 129 S Franklin Ave, Oxford, WI 53952
Population of Village of Oxford	599
Annual Precipitation	34.03
Director of Public Works	Steve Mullens Ph: 608-586-4100 Fax: 608-586-5901 Cell: 608-547-6115 Emails: voxwwtf@maqs.net
Number of Public Works Employees	3
Wastewater Treatment Plant	WPDES Permit #WI-0032077-07-0 3 Basin SBR Constructed: 1980
Plant Design Capacity	0.0640 MGD
Average Daily Wastewater Volume	0.0480 MGD
Miles of Gravity Sewers	#(8” pipe / 6.056 miles)
Number of Lift Stations	5
Number of Manholes	115

3.1.2 Critical Components

In general, the collection system meets the needs of the Village of Oxford.

Grease and grease like products can be significant contributors of sewer overflows. Restaurants and industrial facilities can discharge grease as part of their normal sanitary flows that can lead, in time, to blockages, backups and overflows. The discharge of fats, oils and grease (FOG) are regulated by Village Ordinance Chapter # 1 Section 9-1-8

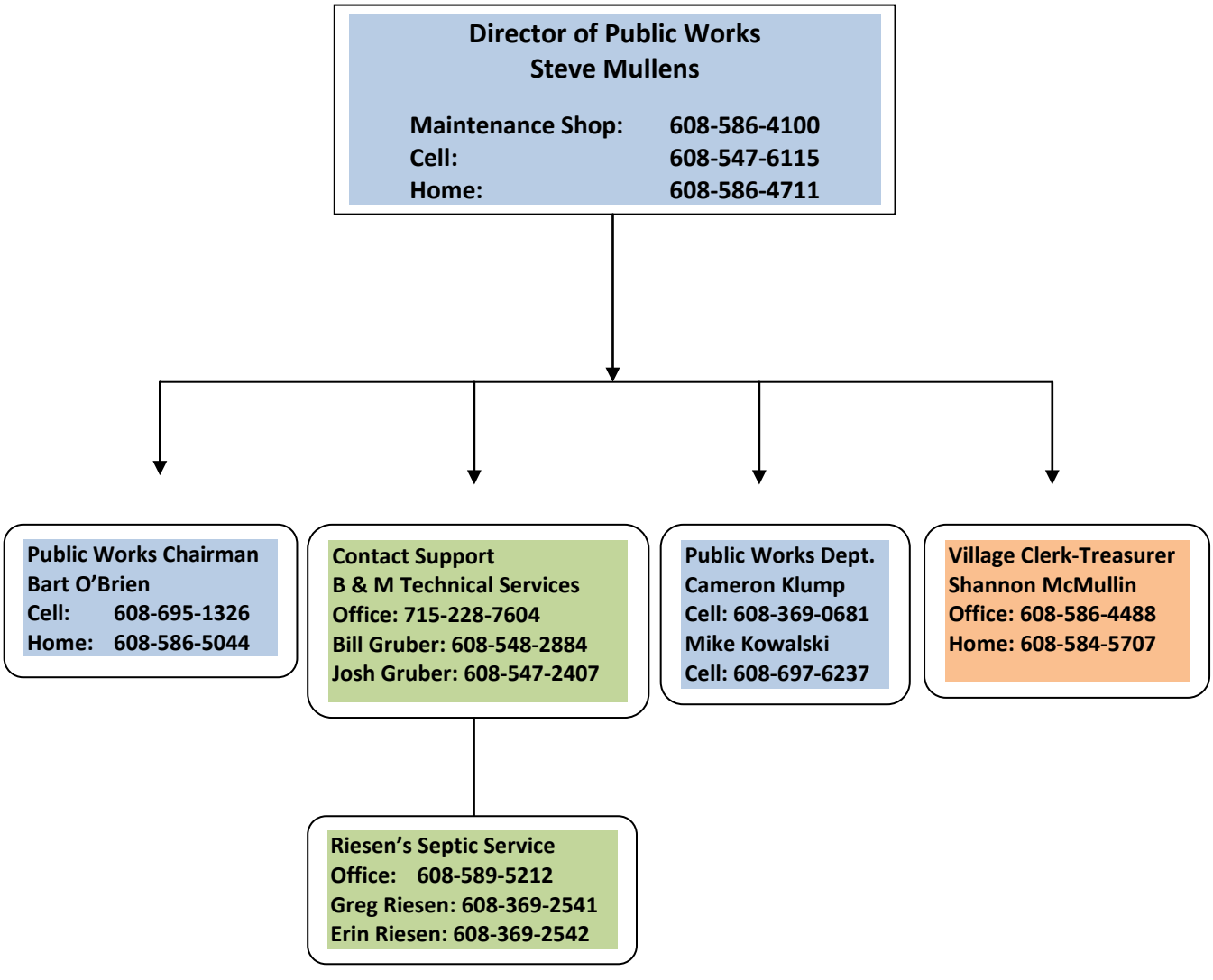
All users are discouraged from discharging fats, oils, greases and all copper based products. Reminders will be sent out in mailings regularly reminding citizens of procedures. Educational material is available at the Village Hall.

The system has five lift stations to move sewage from low elevation areas to higher elevation area. Periodic loss of power may occur due to storms and electrical grid equipment failures. All of the Village's lift stations and the Treatment Plant are monitored with either a SCADA Alarm System or an on-site light and alarm. The Lift Stations all have back up power available. Therefore, none of the lift stations are considered critical components due to a lack of backup power.

The critical components as described above are shown in the Village of Oxford Collection System Routine Maintenance Schedule (Table 4-1).

3.1.3 Organizational Structure

Figure 1: Organizational Structure Director of Public Works



3.2 Job Descriptions

Job descriptions lay out the foundation for the requirements and responsibilities of each person within the organizational structure. Employees are expected to comply with the elements of the job descriptions including any requirements for professional licenses and continuing education. Failure to meet the basic elements of an employee's assigned job description may be reason for termination, demotion or other disciplinary action deemed appropriate. Job descriptions for each position are available at Village Hall in the Public Works Office upon request.

3.3 Training

Each employee is required to periodically attend safety training courses upon approval by an immediate supervisor. 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 venue. The training must be directly relevant to the employee's duties as described in his/her job description. Certified Operators are also required to obtain continuing education units (CEUs) for his/her license.

Required Training

Within the first three months of employment, employees are required to attend a course in lock out/tag out and confined space entry. The Director of Public Works or his/her designee will approve the course prior to attendance.

Other potential course topical areas include:

- Routine line maintenance – jet cleaning
- Traffic control
- Environmental/safety regulations
- Pump theory, operation including speed control, and maintenance
- Laboratory procedures, equipment calibration, sample collection and handling
- Electrical and instrumentation
- Public relations
- Sewer overflow response and reporting
- Collection system evaluation including smoke testing and closed circuit TV
- Pipe repair
- Collection system rehabilitation including pipe bursting, cured in place, slip lining, and trenching/shoring
- Heavy equipment operation
- Wastewater System Operations and Maintenance

The operating budget shall contain a line item sufficient to provide a mix of on and off site training such that each employee can obtain professional/trades development training per year inclusive of continuing education needed for license requirements. The line item funding will be inclusive of course cost, travel, lodging and meals and incidental expenses consistent with typical costs for the location.

3.4 Public Information and Education

The public has a direct impact on the condition and maintenance of the collection system. The Village of Oxford makes every effort to educate the public through postings on the website, radio broadcasts, newspaper articles, public meetings and brochures. In addition, the village will notify affected customers prior to any scheduled maintenance work with the distribution of notices by going door to door. For example, many blockages in the sewer system are caused by grease. The village encourages users to avoid disposing of fats, oil and grease into the sewer system.
The Village also offers information to help residents understand why basement backups happen, how they can be prevented and what steps citizens should take if a sewer backup affects their property.

3.5 Legal Authority

The Village of Oxford has taken steps in order to enforce the legal authority necessary to regulate the flow entering the collection system from residential, commercial and industrial customers by passing Sewer Ordinance Chapter # 1 on 5-4-94. A summary of those elements included are as follows:

1) Inflow/Infiltration – "No person shall discharge or cause to be discharged, any unpolluted waters, such as storm water, ground water, roof runoff, subsurface drainage or cooling water to any sewer."
2) Sewer Design, Installation, Testing & Inspection Standards – "The property owner is responsible for all costs and expenses for the installation and connection of new sewer laterals where available. The size, slope, alignment and materials of construction of any new sewer lateral, along with the methods to be used in excavating, placement of the pipe, jointing, testing and back-filling the trench shall all conform to the requirements of the building and plumbing code, or applicable rules and regulations of the Village of Oxford. New connections to the system shall not be allowed unless all downstream components have a reserve capable of accepting them."
3) Controlling Flow from Satellite Systems – The Village of Oxford does not receive flow from satellite systems.
4) Utility Access – "The Village of Oxford shall be permitted to have an authorized representative inspect any new or old installations for compliance with the regulations of Chapter # 1.
5) Pretreatment Program – "Pretreatment is required to modify or eliminate wastes that are harmful to the structures, processes or operation of the wastewater Treatment facility. This shall be done at his or her expense."
6) Grease Controls – "Grease, oil and sand interceptors shall be provided when, in the opinion of the approving authority, they are necessary. All interceptors shall be of a type and capacity approved by state plumbing code, and shall be located for easy access for cleaning and inspection. The owner is responsible for removal of the captured material and maintaining all cleaning records."
7) Violations & Penalties – Chapter # 1 describes the penalties for any person found to be in violation of any provisions of the ordinance. A copy of the ordinance may be obtained at Village Hall.

3.6 Asset Management

The ability of the Village of Oxford to effectively manage its collection system is directly related to its ability to maintain access to the most current information concerning the facilities. Maintenance of this current information is an effort involving all members of the collection system from the staff answering the telephone to the worker in the street. Operational information informs and clarifies financial information. This will make the financial information more useful for the policy makers, leading to better decisions. The system should be kept current with accurate information. A satisfactory management information system should supply the Village with the following advantages:

- Maintain preventive maintenance and inspection schedules
- Offer budgetary justification
- Track repairs
- Organize capital replacements plans
- Manage tools and equipment inventories
- Record customer service inquiries, complaints or requests
- Provide measurement of effectiveness of program and O&M activities

The assets of the Village of Oxford sanitary sewer system include the collection system, lift stations, Wastewater Treatment Plant, generators, vehicles, office facilities and all related appurtenances. Both paper and computer-based records for these assets are located at Village Hall and the Public Works Office.

3.7 Condition Assessment

The condition of an asset is dependent upon a number of factors including its overall condition, maintenance requirements, whether it is over or under capacity for its intended service and how well the asset is performing the job it was designed to perform. All of these factors are subjective in nature so the condition assessment is meant to be an estimate and not an exact analysis. Following is the assessment criteria that the Village of Oxford will use to assess the condition of the utility’s assets.

Table 3-2: Condition Assessment

Performance Assessment		Score
0 New		
1 Excellent	No failures, no I&I	
1 Good	Rare failure, minor infiltration, no inflow	
3 Average	Failures typical of like equipment, infiltration exceeds design, minor inflow	
4 Poor	Frequent failures, substantial I&I but no overflows	
5 Salvage	Needs substantial maintenance to keep operational, overflows occur	
Capacity Assessment		
0 Oversized +25	Meets current need plus more than 25%	
1 Oversized <25%	Meets current needs plus up to 25% more	
2 Full-sized	Meets current need	
3 Undersized	Current need exceeds capability but able to control through operational means	
4 Undersized <25%	Current need exceeds capability by up to 25%, can't control	
5 Undersized +25%	Current need exceeds capability by more than 25%, can't control	
Non-PM Maintenance Assessment		
0 None	No non-PM maintenance requirements	
1 Normal	Normal requirements	
2 Minor	More than normal but not significant	
3 Significant	Requires frequent maintenance	
4 Renew	Substantial including frequent component	
5 Replace	Nearly unserviceable	
non-PM excludes routine items such as greasing, cleaning, oil changes or Other consumable part replacements at normal intervals		
Total Score		
0	New or like new	
1-3	Excellent	
4-6	Good	
7-9	Average	
10-12	Poor	
any component score of 5	Replace	

4.0 COLLECTION SYSTEM OPERATION AND MAINTENANCE

Collection system operation and maintenance (O&M) consists of inspection, evaluation, preventative maintenance, and cleaning of sewer main and laterals, manholes and lift stations to maintain flow and mitigate inflow and infiltration. O&M varies by the equipment type, condition, age and operating history with equipment identified as critical receiving maintenance at greater frequencies. Section 3.1.2 described the Village of Oxford's critical components. The following is a baseline O&M schedule. Periodic factors may necessitate a more frequent O&M schedule for individual components. Appropriate corrective actions or temporary mitigation measures are initiated based upon the findings of the routine O&M activities.

4.1 Collection System

Table 4.1: Collection System Routine Maintenance Schedule

Description	Known Issues	Weekly	Monthly	SemiAnnually	Annually
Televise					Clean w/Vactor Truck & televise sewer mains at least 10% per year
All Lift Stations	Grease build up and rags	Visual check for general condition, grease buildup, floats, transducers. Test pumps, alarm system, generator		Remove pumps for inspection and clean with vacuum truck	
Remainder of collection system	No known problems	L.S.-visual check for general condition, grease buildup, floats, transducers. Test pumps, alarm system, generator			Visual check for general condition and overflow evidence, clean 25% of the collection system and televise any areas with suspected problems

The Village of Oxford cleans the sanitary sewer per the routine maintenance schedule using the following equipment: Vactor Truck, portable trash pump, portable centrifugal pump, hot water pressure washer and fire hose for flushing. Additional cleaning equipment and manpower are available via contract operations with several area vendors. The Village of Oxford does not anticipate using contract services unless the following conditions exist:

- System equipment inoperable for extended period
- Manpower shortage
- Unusually high cleaning demand due to unforeseen circumstances

All sewer cleaning records are kept on file at the Public Works Office and are also used for updating the Village's mapping system. The records include such information as date, time, crew members, manhole or Lift Station ID#, type of work performed, cause and location of any stoppage, method of cleaning, length of sewer main cleaned, televised or repaired, any further actions necessary.

4.2 Sewer System Inspection

Visual inspection of manholes and pipelines are the first line of defense in the identification of existing or potential problem areas. Visual inspections take place on both a scheduled basis and as part of any preventative or corrective maintenance activity. Visual inspections provide additional information concerning the accuracy of system mapping, the presence and degree of I/I problems and the physical state-of-repair of the system. By observing the manhole directly and the incoming and outgoing lines, it is possible to determine structural condition, the presence of roots, condition of joints, depth of debris in the line and depth of flow. The Public Works Director can examine the records of visual inspections to ensure that the following information is recorded:

- Manhole identification number location
- Cracks or breaks in the manhole or pipe
- Accumulation of grease, debris or grit
- Wastewater flow characteristics
- Inflow or Infiltration
- Condition of manhole cover
- Presence of corrosion
- Offsets of misalignments
- Condition of the frame
- Evidence of surcharge
- Atmospheric hazard measurements (hydrogen sulfide)

Close circuit television analysis of the interior of sewer lines is one of the most comprehensive evaluation methods available as it allows surveying the interior conditions of a pipe. Areas of the sewer system that are experiencing frequent blockages and/or inflow/infiltration should be analyzed by TV analysis to determine the cause of the problems. Tree roots, misaligned joints, saddles, and collapses are common reasons for blockages to occur as grease and other materials begin to accumulate in these areas. Likewise cracks, joint problems and illegal connections can be identified with the aid of television inspection. TV inspection of the sewer system will be utilized in areas with know and repeat problems to diagnose the cause(s) of the problems.

4.3 Mapping

The importance of maintaining accurate, current maps of the collection system cannot be overstated. Efficient collection system maintenance repairs are unlikely if mapping is not adequate. Collection system maps should clearly indicate the information that personnel need to carry out their assignments. The collection system maps contain information on the flowing:

- Sewer Gravity Mains
- Building/house laterals (where available)
- History of Basement backup complaints
- Manholes
- Cleanouts
- Force Mains
- Lift Stations
- Service area boundaries
- Other landmarks (roads, water bodies, etc.)
- Aerial overlay

The collection system maps have a permanently assigned numbering system which uniquely identifies all elements of the collection system. The maps are simple and easy to understand. Easements and property lines are also included on the maps. Other information included on the maps is a scale, north arrow, date the map was drafted and the date of the last revision. Maps may come in different sizes and scales to be used for different purposes.

Village office and field personnel can easily view all attributes of each components of the collection system. These include, but are not limited to:

- Sewer Pipe Material and Diameter
- Sewer Pipe Length, Slope and Direction of Flow
- Sewer Pipe Televising Dates and Information
- Manhole Rim and Invert Elevations
- Construction History of Sewer Pipes, Manholes and Lift Stations
- Maintenance History of Sewer Pipes, Manholes and Lift Stations
- Note of any critical areas pertaining to Basement Backups or Inflow/Infiltration

Specific procedures have been established for correction of errors and updating maps and drawings. Field personnel are trained to recognize discrepancies between field conditions and map data so that office personnel can make the changes necessary to correct the existing mapping system. The maps are available to both office and field personnel.

4.4 Lift Stations

Table 4.2: Lift Station Design Information

Lift Station	Location	Year Constructed	WetWell Size	Pump Size(hp)	Pump year	Capacity (GPM)	Backup power	Alarm system
#1	Miller Street	1980	Lg	10	2013	510	Portable Generator	SCADA, on-site light & alarm
#2	Wood Street	1980	Lg	5	2013	410	Portable Generator	SCADA, on-site light & alarm
#3	Fandrich Street	1980	Med	5	2013	250	Portable Generator	SCADA, on-site light & alarm
#4	Hillyer Street	1980	Sm	3	2014	76	Portable Generator	SCADA, on-site light & alarm
#5	Ormsby Street	1980	Sm	3	2014	76	Portable Generator	SCADA, on-site light & alarm

All of the Lift Stations are equipped with two submersible pumps.

In the case of a complete Village-wide electrical outage, portable pumping by Village personnel and private waste haulers and non-use of the low flow Lift Stations would accommodate the system's needs on a temporary basis.

During an emergency, Lift Station #1 will be pumped first and the Village will contact a local hauler to help keep the remaining Lift Stations pumped. All of the Lift Stations can also be mechanically pumped during an emergency.

4.4.1 Lift Station Maintenance

All Lift Station equipment is to be maintained in accordance with the manufacturer's specifications. A team from B&M Technical Services inspects every Lift Station on an annual basis to insure they are in good working condition. The Village is given a copy of their maintenance reports. In addition, the following maintenance activities are conducted by Public Works personnel on a weekly basis:

• Inspect the Level Sensing Floats
• Inspect Transducer
• Inspect for Grease Buildup
• Test the Pumps
• Test Alarm System
• Hookup and run generator under load (annually)

Specification manuals for each of the Lift Station pumps are located in the respective electrical panels.

4.5 Force Mains

The Village of Oxford personnel run both pumps simultaneously on a weekly basis at all Lift Stations to scour the force main. Procedure such as poly pigging, televising, etc. will be considered as needed.

4.6 Repairs

Routine maintenance will identify repair needs within system components. The appropriate repair for any given problem is dependent upon the nature of the problem and cannot be prescribed in this plan. However, a priority hierarchy has been established to structure what and when repairs are to be accomplished. The hierarchy is based upon identifying and repairing critical components first.

Critical components are parts of the collection system which if failure occurs will result in system failure and sewer overflow. Such items may include failure of a pump, failure of a backup generator to start, or obstruction in the sewer line. Other problems identified by maintenance activities will be less acute and can be repaired on a lower priority basis. This may include loose or missing manhole bricks, broken manhole covers, lift station lighting, etc. When normal maintenance activities identify the need for component repairs or when problems are brought to the attention of the system by customers or others, the problem and corresponding repair will be assigned a priority ranking based on the following hierarchy.
The response time is a requirement for the Village of Oxford to complete. Not meeting the required response time will be considered a failure on the part of the system to meet the requirements of this plan. The repair time goal is a stated goal. Many factors, some out of the control of the system, will impact the ability of the system to make the necessary repairs. Not meeting the repair goals will not be considered a plan failure but will be noted in self-audits from which plan and or operational changes may be fashioned.

Table 4.3: Collection System Response and Repair Hierarchy

Problem	Priority	Response Time	Action	Repair Time Goal
Active Sewer Overflow	1	Within 1 hour of receiving report	Stop overflow, return system to normal operation	Within 4 hours of arriving on site
Failure of Critical Component, Overflow/Bypass Will Occur if Not Repaired	1	Within 1 hour of receiving report or discovering problem	Repair or replace component, return system to normal operation	Within 4 hours of arriving on site
Unsafe Condition Poses Risk to public or Employees	1	Within 1 hour of receiving report or discovering problem	Mitigate and repair to eliminate unsafe condition	Mitigate risk within 2 hours of arriving on site, repair within 8 hours if public risk, 7 days if employee risk
Evidence of System Surcharging and Intermittent Overflow	2	Within 1 day of receiving report of discovering problem	Clean sewer line, check for proper lift station operation. Re-evaluate problem following cleaning/repair. Begin I&I evaluation and corrections if not corrected.	Within 8 hours of arriving on site for cleaning and station repairs. Initiate I&I evaluation and corrective actions with 30 days
Failure of Backup Power System	2	Within 3 days of receiving report or discovering problem	Repair or replace equipment as needed.	Within 10 days of response
Evidence of Surcharging, No Overflow Evidence	3	Within 1 week of receiving report or discovering problem	Clean sewer line, check for proper lift station operation. Re-evaluate problem following cleaning/repair. Begin I&I evaluation and corrections if not corrected.	Within 8 hours of arriving on site for cleaning and station repairs. I&I evaluation and corrective actions within 180 days
Failure of Monitoring or Measuring Equipment	3	Within 3 days of receiving report of discovering problem	Make repairs or replace as needed	Repairs within 7 days of response. Replacement within 30 days.
Evidence of I&I Non-surcharging	4	Complete evaluation of cause within 90 days of problem	Make corrective actions based on I&I evaluation findings	Within 360 days
Component failures non-critical maintenance	5	Evaluate repair need within 180 days of discovering problem	Make repairs	Within 360 days

4.7 Parts and Equipment Inventory

An inventory of spare parts, equipment and supplies is maintained by the Village of Oxford. The inventory is based on equipment manufacturer's recommendations, supplemented by historical experience with maintenance and equipment problems.

The Public Works Director is responsible for assuring that each crew always has adequate tools. He/She should consider the frequency of usage of the part, how critical the part is, and finally how difficult the part is to obtain when determining how many of the part to keep in stock.

Spare parts are kept in a clean, organized and well protected stock room.

Files for the Village's inventory of parts are maintained at the Public Works Office. Below is a current list of equipment located at the Village Garage:

(1) Portable Trash Pump
(1) Portable Centrifugal Pump

Various sizes and lengths of Hoses for Pumps
Various Fire Hoses with fittings and adapters
(1) Gas Ventilation Blower
(1) Portable Generators
(1) Loader
(2) Dump Trucks
(1) Flatbed Truck with Boom w/Warning Lights & Hand Tools
(1) Street Sweeper
(1) Snow Blower
(1) Line Locators
(1) Portable Spotlight
(1) Tractor W Bucket & Plow

(4) Extension Cords
(1) First Aid Kits
(2) Fire Extinguishers
Personal Safety Equipment
Barricades & Flashers

Below is a current list of available contract operations with several area vendors if needed:

Septic Haulers: Riesen's Septic Service 608-589-5212
Septic Haulers: Roller's Inc. 608-586-5698
Pipe & Fittings Supplier: B&M Technical Services 715-228-7604
Pump Suppliers: B&M Technical Services 715-228-7604

5.0 SYSTEM EVALUATION AND CAPACITY DETERMINATION

The concept of capacity for a wastewater system has two basic elements; the capacity of the wastewater plant and the capacity of the collection system. Inflow/infiltration and growth can result in wastewater flows exceeding the design capacity of either the plant or collection system or both.

A Sanitary Sewer & Lift Station Evaluation was prepared by R.A. Smith & Associates Inc. in 1980. The evaluation focused on the sanitary sewer along with the lift stations. The ultimate development areas around the Village were also considered for a guide for expansion. Future expansion evaluation is general in nature, and detailed feasibility studies will be needed to confirm sizes and location of future facilities.

Existing flows were determined on a sewer district basis using the number of units within the sewer district and area wastewater flow rates for various types of land use. Land uses, and not population projections were used to determine future flows. Average flows for residential land uses were peaked in accordance with standard peaking factors. Peak flows were used as a basis for evaluating the existing sewer system and lift stations. In developed areas, peak flows were compared with the system capacities to identify those facilities that might be undersized at ultimate development. Each service area was analyzed independently. Of the five existing lift stations, all have adequate capacity today to handle ultimate flows.

5.1 Wastewater Treatment Plant

The Village of Oxford Wastewater Treatment Plant is located on Fandrich Street and we own approximately 21.39 acres. The Treatment Plant was constructed in 1980 with a design flow of 64,000 gpd. It consists of two primary lagoon ponds, one polishing pond, and two sand filter ponds with effluent disposal to Neenah Creek.

5.2 Collection System

Capacities within the collection system vary by the size of the piping that makes up the system. It is important to determine capacities within the collection system to gauge whether portions are subject to surcharging and overflows and to develop a baseline from which planning decisions regarding new connections may be made. Even if the treatment plant flows are within the design capacity, portions of the collection system could be receiving flows in excess of their design capacities. Some items that may affect sewer capacity are: flat sewer pipes, surcharging, bottlenecks or constrictions, chronic basement backups, SSO’s (sanitary sewer overflows), excess debris (solids, grease), root growth, I/I, manhole corrosion, new connections and Lift Station Evaluation, the collection system is in good condition.

5.3 Lift Station Capacity Determination

Table 5.1: Lift Station Capacity

Lift Station	**Est. Ultimate Peak Flow (GPM)**	**Existing Firm Capacity (GPM)***	**Ultimate Firm Capacity (GPM)**	**Improvement**
#1	1020	510	1020	Sufficient
#2	820	410	820	Sufficient
#3	500	250	500	Sufficient
#4	152	76	152	Sufficient
#5	152	76	152	Sufficient

 Firm Capacity assumes one pump running.

All design standards for the Village of Oxford follows State Plumbing Codes, Municipal codes, and DNR codes for sewer design work, municipal sewer inspections or for construction design and inspections.

6.0 OVERFLOW EMERGENCY RESPONSE PLAN

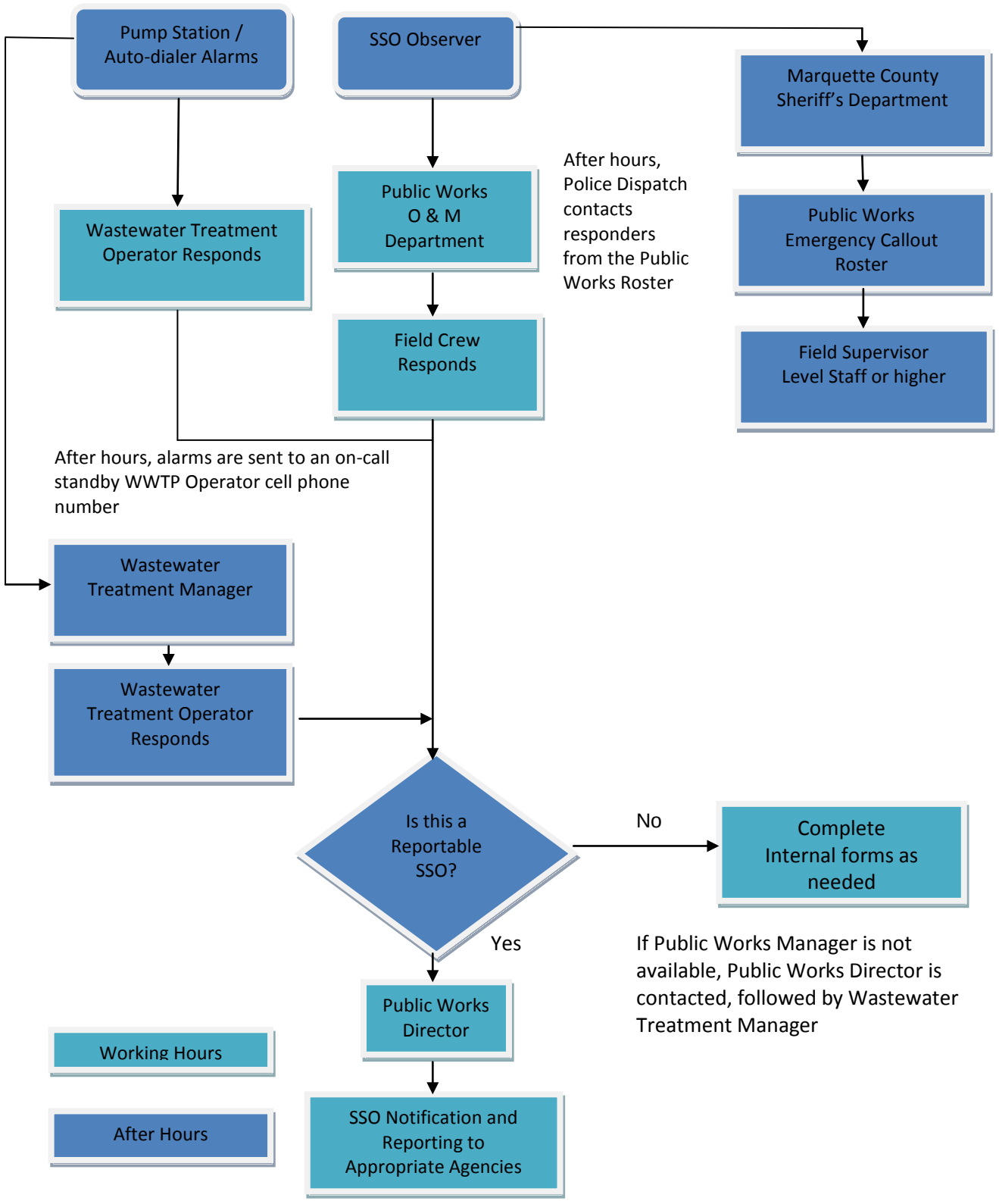
An Overflow Emergency Response Plan is required for dealing with both routine and catastrophic emergencies. Routine emergencies include situations such as overflowing manholes, sewer main breaks, localized electrical failure and power outages at Lift Stations. Catastrophic emergencies include floods, tornadoes, earthquakes, other natural events, serious chemical spills or widespread electrical failure.

Procedures for the Emergency Response Plan should be understood and practiced by all personnel in order to ensure safety of the public and the collection system personnel responding. The Plan is located in the Public Works Office at 129 S Franklin Ave and Village Hall at 129 S Franklin Ave. The Public Works Director shall review and update this document annually. Detailed records of emergencies and responses are documented.

The Village of Oxford has taken steps towards the security of the collection system by installing a SCADA Alarm System.

The following flow chart describes the actions that will be taken in the event of an overflow of the collection system.

Figure 2: Emergency Response Flow Chart



The Village of Oxford shall review this CMOM annually (prior to submittal of the CMAR) to ensure all of the components are being implemented, evaluated and updated as needed. The following Annual Review Checklist shall be used for this process. Revisions will then be listed at the end of this document.

Figure 3: Annual Review Checklist

Date of Review

Check each item after verifying no change or making the necessary updates. Keep copy for each year with CMOM.

◯ System Profile (p. 4)
◯ Critical Components (p. 4)
◯ Legal Authority (p. 8)
◯ Asset Management (p. 9)
◯ Condition Assessment (p. 9)
◯ Collection System (p. 11)
◯ Manhole Inspections (p. 13)
◯ Lift Station Information (p. 15)
◯ Equipment Inventory (p. 18)
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◯ Lift Station Capacity (p. 20)
◯ Emergency Response Flow Chart (p. 22)
◯ Sewer Use

7.0

REVISIONS