Urbana & Champaign Sanitary District
Capacity, Management, Operation, and Maintenance (CMOM) Program
Revised April 2025

Prepared by: **Bradley Miles Bennett, P.E.**
Director of Engineering
Certified Collection System Operator

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I. INTRODUCTION

The Urbana & Champaign Sanitary District (UCSD or District) services the City of Urbana, City of Champaign, University of Illinois, Village of Savoy, Village of Bondville, and surrounding unincorporated areas. UCSD operates two treatment facilities including the Northeast Plant (NEP) designed for an average daily flow of 17.3 MGD and a Southwest Plant (SWP) designed for an average daily flow of 7.98 MGD. Both treatment plants include excess flow facilities.

The NEP plant was constructed in 1924 and provides preliminary, primary, secondary, ammonia, and tertiary wastewater treatment prior to discharge to the Saline Branch Drainage Ditch. The NEP splits wastewater flows between activated sludge and trickling filter processes.

The SWP was constructed in 1968 and provides preliminary, secondary, ammonia, and tertiary wastewater treatment prior to discharge to the Cooper Slough. The SWP utilizes activated sludge for its treatment process.

All sludges are processed at the NEP utilizing anaerobic digestion. Secondary sludge from the SWP is thickened using a gravity belt thickener and trucked to the NEP. Primary sludge for the NEP along with thickened secondary sludge from NEP and SWP are anaerobically digested utilizing four mixed tanks. Biogas generated from the digestion process is burned in co-generators to produce electricity and heat for from the treatment processes. The digested study sludge is dewatered using centrifuges and land applied to agricultural fields as a soil amendment.

UCSD has developed a Capacity, Management, Operation, and Maintenance (CMOM) program designed to help optimize the performance of the sanitary sewer system. In accordance with Environmental Protection Agency (EPA) documents, the major objectives of UCSD's CMOM program include:

1.) Manage, operate and maintain at all times, all parts of the sanitary system so UCSD fully complies with the Clean Water Act.

2.) Provide sufficient capacity to convey base and peak flows without sanitary sewer overflows or basement back-ups for all parts of the sanitary sewer system.

3.) Implement feasible steps to stop and mitigate the impact of sanitary sewer overflows and basement back-ups from any portion of the sanitary sewer system.

4.) Provide timely notification of sanitary sewer overflows from the sanitary sewer system to persons with reasonable potential for exposure to pollutants from such sanitary sewer overflows.

5.) Develop a written summary of the CMOM program and make it, and required program audits, available to the public upon request.

It is important to note that there are no overflow points within the UCSD's sanitary sewer system. Therefore, any system overflows are related to sewer line blockages and/or excessive infiltration and inflow. When sewer line blockages occur, they are corrected and mitigated in accordance with UCSD emergency response procedures. Generally, sewer line blockages are not directly related to wet weather conditions.

UCSD's CMOM plan includes the following elements:

A. Measures and Activities:

1. A complete map of the collection system;
2. Organizational structure, budgeting, training of personnel, legal authorities, schedules for maintenance, sewer system cleaning, and preventative maintenance; checklists, and mechanisms to ensure that preventative maintenance is performed;
3. Documentation of unplanned maintenance;
4. An assessment of the capacity of the collection and treatment system at critical junctions and immediately upstream of locations where overflows and backups occur or are likely to occur; using flow monitoring and/or hydraulic modeling as necessary;
5. Identification and prioritization of structural deficiencies in the sewer system including preventative maintenance programs to prevent and/or eliminate collection system blockages from roots or grease, and prevent corrosion or negative effects of hydrogen sulfide which may be generated within the collection system.
6. Operational control including documented system control procedures, scheduled inspections and testing, list of scheduled cleaning (and televising as necessary) of sewers;
7. Development and implementation of an Asset Management strategy to ensure the long-term sustainability of the collection system. Asset Management shall be used to assist the in making decisions on when its most appropriate to repair, replace, or rehabilitate particular assets and develop long term funding strategies; and
8. Asset Management shall include but is not limited to the following elements:
    a. Asset Inventory and State of the Asset;
    b. Level of Service;
    c. Critical Asset Identification;
    d. Life Cycle Cost; and
    e. Long Term Funding Strategy

B. Design and Performance Provisions:

1. Monitor the effectiveness of CMOM;
2. Upgrade the elements of the CMOM plan as necessary; and
3. Maintain summary of CMOM activities.

C. Overflow Response Plan:

1. Know where overflows and basement back-ups within the facilities occur;
2. Respond to each overflow or basement back-up to determine additional actions such as clean up; and
3. Locations where basement back-ups and/or sanitary sewer overflows occur shall be evaluated as soon as practicable for excessive inflow / infiltration, obstructions or other causes of overflows or back-ups as set forth in the System Evaluation Plan.
4. Identify the root cause of the overflow or basement backup, and document to files;

5. Identify actions or remediation efforts to reduce risk of reoccurrence of these overflows or basement backups in the future, and document to files.

D. System Evaluation Plan.
1. Summary of existing SSO and Excessive I/I areas in the system and sources of contributions;
2. Evaluate plans to reduce I/I and eliminate SSOs;
3. Evaluate the effectiveness and performance in efforts to reduce excessive I/I in the collection system;
4. Special provisions for Pump Stations and force mains and other unique system components; and
5. Construction plans and schedules for correction

E. Reporting and Monitoring Requirements.
1. Program for SSO detection and reporting; and
2. Program for tracking and reporting basement backups, including general public complaints

F. Third Party Notice Plan:

1. Describes how, under various overflow scenarios, the public, as well as other entities, would be notified of overflows within the Permittee's system that may endanger public health, safety or welfare;
2. Identifies overflows within the Permittee's system that would be reported, giving consideration to various types of events including events with potential widespread impacts;
3. Identifies who shall receive the notification;
4. Identifies the specific information that would be reported including actions that will be taken to respond to the overflow;
5. Includes a description of the lines of communication; and
6. Includes the identities and contact information of responsible POTW officials and local, county, and/or state level officials.

Based on current permitting requirements, UCSD has developed a CMOM program designed to optimize the performance of the sanitary sewer system.

II. MEASURES AND ACTIVITIES

A. COLLECTION SYSTEM MAP

1. COLLECTION SYSTEM DESCRIPTION

The Urbana & Champaign Sanitary District's (UCSD) sewer system services approximately 43.9 square miles of land, serving a total population of 147,000 residents of which about 11,100 live in unincorporated subdivisions (based on the 2020 US census). UCSD owns and maintains approximately 10% of the collector sewers in the service area. The other 90% of the collector sewers are owned and maintained by the City of Urbana, City of Champaign, Village of Savoy, the Village of Bondville and the University of Illinois. Other significant statistics of the portion of the collection system that UCSD owns includes:

- 43,300 wastewater billing accounts
- 36 miles of collector gravity sewers ranging in size from 8 to 15 inches in diameter
- 96 miles of interceptor sewers ranging in size from 8 to 54 inches in diameter
- 18 miles of pressurized mains ranging in size from 4 to 24 inches in diameter
- 2,846 manholes
- 28 lift stations

2. COLLECTION SYSTEM MAP

One of the typical problems in collection system management and maintenance is determining the locations of sewer pipes and manholes. Determining such locations is best done by keeping collection system maps up-to-date. Maps and plans should be kept current by updating them when alterations or system additions occur.

Accurate sewer mapping is a fundamental need for any Sewer Utility. This mapping allows staff to do a variety of activities including: 1) answering questions from current and potential customers; 2) visually establishing system performance trends; 3) tracking maintenance and rehabilitation activities; 4) locating to protect against contractor excavation damage; and 5) facilitating the orderly extension of sewer service.

UCSD created a Geographical Information System (GIS) for the sanitary sewer systems in 2005. GIS is a collection of computer hardware, software, and geographic data for capturing, managing, analyzing, and displaying all forms of geographically referenced information. With a 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. Then it is possible to layer that information to provide a better understanding of how it all works together.

The sanitary sewer system GIS mapping is hosted on the Champaign County Geographical Information System Consortium (CCGISC) server. The sanitary sewer collection systems for UCSD, the City of Champaign, the City of Urbana, Village of Savoy, Village of Bondville, and University of Illinois are all mapped on the CCGIS server providing a complete collection system map for all the sewers tributary to UCSD's treatment facilities. The GIS mapping includes collector sewers, interceptor sewers, manholes, force mains, valves, pump stations, wastewater treatment plants, and limited sanitary sewer lateral data.

Each agency is responsible for updating and revising their sewer collection system on the CCGISC server. GIS map revisions are posted at the end of each day to provide for a real-time accurate map of the collection system. Agency staff have access the collection system GIS mapping on the CCGISC server on-line.

The GIS mapping is available in the field to General Maintenance Staff assigned to sewer system maintenance via iPads and smart phones. General Maintenance Staff annotate paper maps with corrections as mapping discrepancies are discovered. Engineering Staff verifies the revision is accurate and updates the GIS mapping on the CCGIS server. Engineering staff is also responsible for adding new sewer construction from District infrastructure or development related activities to the GIS mapping system. GIS mapping revisions are performed on a continuous basis as soon as the data is available for inclusion in the GIS system.

B. ORGANIZATIONAL STRUCTURE

1. STAFFING PLAN

The District is staffed during the hours of 8:00 A.M. to 4:00 P.M. Monday through Friday. After the normal working hours, there is one employee on-call covering any responses for the sanitary sewer system. The public can report problems at any time by either calling during normal business hours to speak directly to District staff, or after hours by contacting an answering service, which will initiate a call out to the On-Call Manager. Employees are required to report to work after hours within 45 minutes of being contacted 24 hours a day, 365 days a year.

2. SPECIFIC STAFFING

The General Maintenance Section is staffed by up to seven (7) full-time employees and one General Maintenance Section Supervisor. This Section reports to the Director of Engineering Services. The Director of Engineering Services, the District's Project Engineer, and an engineering technician also assist in the operation, maintenance, rehabilitation, replacement, and improvement of the sanitary sewer system. Job descriptions for District Staff are available on the District's network server.

3. ORGANIZATIONAL CHART

Please see attachment in Appendix A.

C. SANITARY SEWER SYSTEM FUNDING AND BUDGET

In April 1981 the UCSD Board approved Ordinance No. 398 creating a user charge system. UCSD collects user charges from all properties served by sanitary sewers to fund the operation, maintenance, rehabilitation, and improvement of the treatment facilities, pump stations, interceptor sewers, and force mains. Users of UCSD's system are charged based on the amount of potable water consumed.

A sanitary sewer benefit fee is collected for properties served by sanitary sewers outside of City or Village corporate limits. The sanitary sewer benefit fee is calculated to recover the full cost of operating, maintaining, rehabilitating, and improving the sanitary sewer collection system outside of City or Village corporate limits. The Cities and Village charge a sanitary sewer benefit fee to properties within their corporate limits to pay for the operation, maintenance, and repair/rehabilitation of their collection systems.

Because the user charge and sanitary sewer benefit fee are user fees and not taxes, all properties regardless of ownership are required to pay for the services provided by UCSD. This includes non-profit entities such as churches, schools and institutions, as well as properties owned by Municipalities, the State of Illinois, as well as the federal government.

Ordinance No. 743 adopted on April 1, 2025 establishes the user charge and sewer benefit fees thru April 30, 2026. A copy of Ordinance No. 743 is available online at: https://www.u-

csd.com/DocumentCenter/View/902/Ordinance-743-Establishing-Revised-Rates-for-the-User-Charge-System.

A residential property using 5,600 gallons per month would pay $20.59 in user charges and $7.19 per in sanitary sewer benefit fees for a total cost of $27.78 per month based on fiscal year (FY) 2026 rates. UCSD projects $11,853,000 in user charge fees and $687,000 in sewer benefit fees for revenues in FY 2026.

In May 2015 the UCSD Board approved Ordinance No. 691 creating an Interceptor Cost Recovery Fee (ICRF) and Connection Permit Fee. Interceptor Cost Recovery Fees are used to pay for interceptor, pump station, and force main capacity increases or extensions necessary to accommodate new development. The ICRF is calculated based on the population equivalents (PE) served by the new development multiplied by a fee determined by UCSD. A new single family residential home with 3.5 PE would pay $1,589.00 in ICRF fees for FY 2026.

Connection permit fees are used to pay for additional capacity and expansion at the treatment plants that result from new developments. The connection permit fee is calculated based on the population equivalents served by the new development multiplied by a fee determined by UCSD. A new single family residential home with 3.5 PE would pay $2,030.00 in ICRF fees for FY 2026.

Ordinance No. 744 adopted on April 1, 2025 established the user charge and sewer benefit fees thru April 30, 2026. A copy of Ordinance No. 744 is available online at https://www.u-csd.com/DocumentCenter/View/903/Ordinance-744-Establishing-Revised-Rates-for-Connection-and-ICRF-Fees .

UCSD projects $635,600 in ICRF fees and $928,000.00 in connection fees for revenues in FY 2026.

UCSD's FY 2026 budget includes $11,359,061 in operational and maintenance costs, $1,170,000.00 in collection system capital improvements, and $1,057,455.00 in treatment plant capital improvements.

The FY 2026 budget includes the following expenses related to the collection system:

- $25,000 for collector sewer repairs
- $900,000 for interceptor sewer repairs
- $75,000 for replacement of Staley Pump Station wet well lid
- $170,000 for design of the I-74 Pump Station Replacement
- $580,000 for a new combination sewer cleaning truck

D. TRAINING OF PERSONNEL

1. SAFETY TRAINING

UCSD prioritizes and values the safety of its Staff. All Operations, General Maintenance, and Maintenance Staff receive safety training on:

- Confined Space Entry;

- Excavation and Shoring;
- Lock-out and Tag-Out;
- Fall Protection;
- Blood Borne Pathogens;
- Other required OSHA safety training

2. GENERAL MAINTENANCE STAFF TRAINING

General Maintenance Staff receive training on:

- a multiple day factory training session for the Combination Unit, Vactor, and flusher;
- televising equipment operation;
- certification in pipe assessment televising coding (PACP) by the National Association of Sewer Service Companies (NASSCO);
- Continuing education courses on cleaning and televising sewer systems;

General Maintenance staff are also encouraged to advance in position to a level two staff classification by obtaining their Illinois Environmental Protection Agency Collector System Operator license. Three of the seven General Maintenance Staff have Collector System Operator licenses.

3. MAINTENANCE STAFF TRAINING

Maintenance Staff receive training on:

- routine maintenance of pump station pumps and valves;
- support and maintenance of the SCADA system that operates the pump stations;

E. LEGAL AUTHORITIES

The Urbana & Champaign Sanitary District's collector sewer system is regulated by a Sewer Use Ordinance that includes new construction requirements and industrial pretreatment regulations. This ordinance, number 739, was last updated in 2024. A copy of Ordinance No. 739 is available online at https://www.u-csd.com/DocumentCenter/View/908/Ordinance-739-Sewer-Use-and-Pretreatment-Program.

F. ROUTINE PREVENTATIVE O&M ACTIVITIES

The primary goal of CMOM is to develop a program to help insure optimal operation. UCSD's sanitary sewer preventive maintenance activities and O&M activities include:

1. COLLECTON SYSTEM

Staff has averaged over 40,000 lineal feet of collector sanitary sewer internal pipe television inspections annually from 2010 to 2024. The 40,000 feet of annual televised pipe represents

20% of the sanitary collector sewer system on an annual basis, so the entire system is televised over a five-year period. In this manner the District is constantly monitoring the condition of the sewer lines and targeting appropriate corrective action for problems identified by the televising efforts.

Staff has averaged over 25,000 lineal feet of interceptor sanitary sewer internal pipe television inspections annually from 2010 to 2024. The 25,000 feet of annual televised pipe represents 5% of the sanitary interceptor sewer system on an annual basis, so the entire system is televised over a twenty-year period. In this manner the District is constantly monitoring the condition of the sewer lines and targeting appropriate corrective action for problems identified by the televising efforts.

Other than the annual televising, internal pipe televising efforts are prioritized for sewer lines using the following criteria from highest to lowest:

a.) Lines where a back-up, blockage, complaint, or sanitary sewer overflow has occurred.
b.) Problematic sewer lines identified during systematic sewer cleaning activities.
c.) Sewer lines identified based on their age or material of construction.
d.) Systematic sewer televising efforts.

More frequent maintenance cleaning is routinely performed on reaches of sewer identified to have problems associated with excessive root intrusion or grease buildup. In addition to this routine cleaning and televising, the District also has more frequent schedules for various collector sewers, including as often as annually. The sewer lines are hydro-jetted to remove debris, grease, and roots from the pipes. Debris, roots or grease may be vacuumed from the manhole and disposed of in accordance with state and federal regulations in an approved landfill facility.

Root blockages identified during cleaning or televising activities are mechanically removed using a root cutter attachment to the hydro-jetting equipment.

Grease blockages identified during cleaning or televising activities are removed using the hydro-jetting equipment. More frequent maintenance cleaning is routinely performed on reaches of sewer identified to have problems associated with excessive root intrusion or grease buildup.

The District also performs weekly inspections of several critical manholes towards the end of each week to prevent backups and overflows. This program was initiated in 1999 and became more formal in 2008.

The District also has seven (7) ADS Echo units installed at critical manhole locations on interceptor sewers to monitor sewerage level and alert Staff when sewer cleaning activities are required. These locations include areas upstream of siphons, diameter reductions, sags, and known sanitary sewer surcharging. Staff monitor the sewerage levels and can commence cleaning activities when an increase in flow depth is observed.

General Maintenance Staff annually visually inspect all gravity sewer creek crossings annually to identify potential problems with those locations. General Maintenance Staff also perform

annual inspections of all force main discharge locations to look for blockage and corrosion issues.

Manholes are cleaned and defects identified during the systematic sewer cleaning program.

2. PUMP STATIONS

All of the District's 28 pump stations are monitored and controlled remotely using a SCADA system 24 hours a day and seven days a week. Maintenance Staff inspect pump stations on a monthly basis and perform routine maintenance as needed. A copy of the maintenance activities during the monthly inspections is included in Appendix B.

Fifteen of the pump stations have permanent generators on-site for emergency power. Portable generators are available for the remaining pump stations. The District also owns two 8-inch and one 4-inch portable pumps that can be utilized when pumps are out of service or a power outage occurs.

The District provides for the maintenance of and coordination for replacement of the District's pump station equipment, including the following:

- Perform preventive maintenance and repairs at proper intervals.
- Evaluate, rehabilitate and modify equipment to include minor accidental damage and wear and tear.
- Administer a repair and maintenance record system using the iMaint software.
- Evaluate equipment replacement and administer bidding process for replacing with new equipment.

3. OTHER PREVENTATIVE ACTIVITIES

The District accomplishes the following preventive maintenance activities for the sanitary sewer collection system:

a.) Regular repair of deteriorating sewer pipes and manholes.

The District manages an annual sewer point repair and cured-in-place pipe (CIPP) lining contract to address defects and other issues identified by priority. The District also manages manhole replacement and rehabilitation projects for high priority manhole defects.

b.) New sewer construction standards and inspections.

New sanitary sewer and manholes must be constructed in accordance with the Sanitary Sewer Technical Standards to prevent the District or entities connected to the District's collection system from accepting pipe or manholes in unsatisfactory condition. The District, along with the contributing communities of Savoy, Urbana, Champaign, along with the University of Illinois, provide sanitary sewer standards and inspections District wide to ensure the requirements and standards are maintained. These standards are available on the District's web site. The sewer

construction standards were updated in 2020. They are available on-line at https://www.u-csd.com/DocumentCenter/View/313/Final-2020-Standards

An Illinois Environmental Protection Agency (IEPA) construction permit must be obtained on all new public and private sanitary sewer construction. The District reviews the proposed sanitary sewer plans and specifications to determine compliance with the District's sanitary sewer standards before authorizing its approval on the IEPA permit application.

Additionally, the developer or property owner must retain an engineering consultant to inspect and certify that the new sanitary sewer was built in accordance with the plans and specifications approved by the District. The engineering consultant must provide a certification statement, as-built drawings, and testing data (pipe pressure test, manhole vacuum test, and Mandrel test if flexible pipe is used) to the District before it will accept ownership of the new sanitary sewer. The developer also must provide internal televised pipe inspection of all new sanitary sewer installations. Any pipe or manhole defects identified must be corrected by the developer or property owner before the District will assume ownership of the sewer.

c.) Private sanitary sewer lateral construction standards and inspections.

The District and satellite collection communities operate a program to oversee lateral and private collection system installations or repairs that tie in to public wastewater collection systems.

The maintenance of the sanitary sewer service lateral up to the connection to the District's sewer main is the responsibility of the property owner. Costs and expenses incident to the installation, connection, repair, and maintenance of the building sewer are borne by the property owner. The connection to the main is typically a wye which is considered part of the service lateral and thus the property owner's responsibility to maintain.

The District issues permits for connection of new service lines to public sewer and repairs to existing service lines that require excavation and replacement of a portion of the line. The appropriate municipality inspects the service line work and copies the District on the required inspection report. Through this program the District ensures that all new service line installations and repairs are executed in compliance with District standards.

d.) Illegal connection and inflow program.

The District operates a program to eliminate existing illegal connection and inflow sources. Non-wastewater discharges to the sanitary sewer system are prohibited by District Ordinance. City and Village plumbing inspectors inspect sump pump installations and all sanitary plumbing on new construction to ensure that there are no illegal connections made to the sanitary sewer system.

The District presently identifies illegal inflow sources through its internal pipe televising program. Sump pump inspections, dye water testing, and smoke testing are

periodically performed for areas where the internal televising has identified potential illegal connection and inflow sources.

4. EQUIPMENT

The District currently has the following equipment assigned for the operation and maintenance of the sanitary sewer systems:

- One Combination Truck
- One Vacuum Truck
- One Jet Flusher Truck
- One Aries Sewer Televising Truck with two Self Propelled Wheeled Mainline Cameras with a 512 Hz Locator
- One Back Lot Easement Machine
- One Tractor - Kubota L6060HSTC
- One Tandem Dump Truck
- Two Pick-Up Trucks
- Pick-Up Truck with Wench to lift Pumps
- Two 8-inch Portable Pumps
- One 4-inch Portable Pump
- Seven ADS Echo Level Measurement Units
- One drone – DJI mini 3 pro
- One Trimble TSC5 GPS Survey Receiver Unit

The District replaced the seven ADS Echo units in 2022 with new units.

G. RECORD KEEPING AND DOCUMENTATION

There are a myriad of record keeping activities associated with the operation and maintenance of a sanitary sewer system. Therefore, accurate and complete record keeping is crucial. Equally important are the mechanisms for archiving and retrieving the data.

Timely and relevant information plays a critical role in an effective CMOM program. A dynamic CMOM program focuses on planning, implementing, reviewing, evaluating and taking appropriate actions in response to available information. The key to these approaches is the ability to get information from staff in the field to supervisors and engineering staff.

The District has several systems in place to ensure the use of timely, relevant information. These include:

1. iMaint CMSS Database

A computerized maintenance management system (CMMS) is a software package that maintains a computer database of information about an organization's maintenance operations. This information is intended to help maintenance workers do their jobs more effectively (for example, determining which pumps or pipes require maintenance and which storerooms contain

the spare parts they need) and to help management make informed decisions (for example, calculating the cost of pump breakdown repair versus preventive maintenance for each pump, possibly leading to better allocation of resources).

The District uses the iMaint CMMS software to track operation and maintenance activities of its sewer collection system and pump station infrastructure. Sewer cleaning and repair activities are tracked in iMaint and work orders for sewer system maintenance are generated from iMaint. Pump Station operation and maintenance activities are also tracked using the iMaint software.

The District tracks all back-ups, overflows, and other complaints related to the sanitary sewer system utilizing the iMaint software. District staff can utilize the iMaint software to evaluate the effectiveness of the CMOM program and identify problematic areas for future sewer repair and rehabilitation projects. SSO locations are also part of the GIS dataset.

The District has also developed a complaint logging procedure using iMaint and a Microsoft Access database to ensure all complaints received regarding the sanitary sewer system are logged, receive an appropriate and timely response from staff.

2. Computerized Sewer Televising Data Management System

The District uses the Pipe Tech software to manage all sewer televising data collected. This software is a comprehensive data collection and management software offering flexibility, customization, and ease-of-use.

3. Sewer Lining and Repair Databases

The District maintains a GIS database of all sanitary sewer pipes, manholes, pump stations, and force mains. The District developed and maintains a GIS database of all sanitary sewer pipes that have been repaired or replaced. The sewer repair database is available on GIS to all Staff. Staff utilizes the database to identify sewer pipes that have had pipe repairs and adjust their maintenance activities accordingly. Sanitary sewer pipes with multiple repairs can be identified and prioritized for future sewer lining and replacement projects. The sewer repair database can also be compared to the iMaint database to identify problematic lines.

H. SYSTEM CAPACITY EVAULATION

The District completed a Long Range Facility Plan in December 2011 that included the District's sanitary sewer system. The objectives of UCSD's Long Range Facility Plan included:

1.) Identify growth areas and develop population projections that will be used to size the capacity of treatment facilities required to serve the needs of the planning area for the next 20 years.

2.) Determine the sewer routing and sizing of interceptor sewer extensions which will best serve the growth areas identified.

The District has updated its Long Range Facility Plan as development has occurred including:

- 2024 – Apollo Drive Sewer Study for Northeast Champaign and Northwest Urbana
- 2022 – East Urbana Sewer Study

- 2018 Staley Road Sewer Study for Southwest Champaign and Savoy
- 2018 Atkins 40 Sewer Study for Southwest Champaign

Projected wastewater flows and proposed sewer infrastructure for UCSD's undeveloped areas are presented in chapter three of UCSD's Long Range Facility Plan. Proposed future sewer infrastructure is available as a layer on the web based sanitary sewer GIS map.

1. Assessment of the capacity of Treatment System:

   Northeast Plant: A major plant upgrade and renovation project was completed in early 2012 at the Northeast Wastewater Treatment Plant. The District maintains a file containing all of the pertinent project information including design calculations, record drawings, and specifications.

   The peak instantaneous and peak hourly flows that the plant was designed to process were determined as part of the Facility Plan. The flows are listed below:

   - Peak instantaneous flow: 63.75 MGD
     The Northeast Treatment Plant is designed to treat 63.75 MGD with 41 MGD receiving full treatment and 22.75 MGD treated in the excess flow facilities. Excess flow treatment includes sedimentation and disinfection before discharging to the receiving stream.

   - Peak hourly flow: 59.05 MGD
     A detailed description of the derivation of these flows is included in the Facility Plan. The capacity analysis of all individual treatment plant components is documented in the Preliminary Design Report of the 2010 Project.

   Southwest Plant: A major plant upgrade and renovation project was completed in 2005 at the Southwest Wastewater Treatment Plant. The District maintains a file containing all of the pertinent project information including design calculations, record drawings, specifications, loan documentations, and project financials.

   The peak instantaneous and peak hourly flows that the plant was designed to process were determined as part of the Facility Plan. The flows are listed below:

   - Peak flow: 44.13 MGD
     The Southwest Treatment Plant is designed to treat 44.13 MGD with 17.25 MGD receiving full treatment and 26.88 MGD treated in the excess flow facilities. Excess flow treatment includes sedimentation and disinfection before discharging to the receiving stream.

2. Assessment of the Capacity of the Collector Sewer System:

   Description of the Collection System:

The collection system tributary to the Northeast Treatment Plant is comprised of a combination of collector sewers and interceptor sewers. The tributary collector sewers, which are the subject of this section, are owned and operated by the City of Urbana, the City of Champaign, the University of Illinois, and the District. The District owns and operates approximately one-eighth of the collector sewers tributary to the Northeast Plant.

The collection system tributary to the Southwest Treatment Plant is also comprised of a combination of collector sewers and interceptor sewers. The Southwest Plant tributary collector sewer owners are the City of Champaign, the Village of Savoy, the Village of Bondville, the University of Illinois, and the District. The District owns and operates approximately one-eighth of the collector sewers tributary to the Southwest Plant.

The District owns and operates all the interceptor sewers. Generally, the collector sewers are 8-inch to 12-inch in diameter while the interceptors are in the 15-inch to 54-inch diameter range.

3. District Collector Sewer Capacity Assessment:

   As mentioned above, the District owns, maintains, and operates a small portion of the collector sewers. The collector sewers that the District owns and operates are in a number of unincorporated subdivisions. All of these subdivisions' collector systems are well designed and have an interceptor fairly close by. Nowhere in the District owned collector sewer neighborhoods is there currently any known need for system capacity capital upgrades such as replacement of existing 8-inch sewers with larger sewers or the installation of relief sewers. The CMOM Program will monitor the need for needed major collector system projects to increase capacity.

   The District works to maintain the capacity of the existing collector sewers at nearly the same level that they were when the sewers were new. This capacity assurance goal is achieved by execution of an extensive sewer maintenance program including sewer cleaning, televising, point repairs, and lining. These maintenance activities are discussed in detail elsewhere in the CMOM.

   The District has no direct responsibility for the collector sewers owned by others. There is an ongoing shared inflow and infiltration program which is championed by the Joint Sanitary Sewer Technical Committee (SSTC). The Committee was formed in 1991 as part of an Intergovernmental Agreement Concerning Sanitary Sewers and has met quarterly since that time to discuss common subjects including technical standards, sewer system operation and maintenance, community growth, current and pending regulations, loaning each other equipment, and reporting requirements. Each member submits an annual report to the Regional Illinois Environmental Protection Agency office which covers collection system activities during that calendar year. The District's 2023 Annual Sewer Report is attached in Appendix C. A new Sewer IGA was adopted in 2022 to replace the 1992 IGA.

4. Assessment of the Capacity of Collector Sewers at Critical Junctions and Locations Where Backups Occur or are likely to Occur:

   The District has experienced SSO's from District owned collectors. These SSO's are reported to IEPA. The reports are kept on file and reviewed.

5. Interceptor Sewer Capacity Assessment:

   All of Urbana and part of Champaign, including the downtown areas, and almost all of the University of Illinois is tributary to the Northeast Plant (NEP). Savoy, most of Champaign west of Prospect Ave., some of the southern most University facilities, and the Village of Bondville, are tributary to the Southwest Treatment Plant (SWP).

   Northeast Plant Interceptors

   There are five interceptors that converge at the Northeast Plant. All five discharge into the common headworks influent channel. Area velocity flowmeters are installed on each of the five major interceptors' tributary to the Northeast Plant. The flow values are indicated, recorded, and totalized by the plant's SCADA system.

   The interceptors tributary to the NEP, especially those that run through the University campus, are close to each other and interconnected.

   Three of the major interceptors tributary to the Northeast Plant run essentially through the middle of Champaign, the University of Illinois, and Urbana. Each of these interceptors has three different satellite communities connected to it at a number of various locations.

   The comingled configuration of the system and the large number of connections to the interceptors makes system wide flow metering and/or computer modeling difficult. As discussed below, the on-going District interceptor capacity assessment program is primarily empirical, relying on data gathered on the system's performance during storms and desktop analyses.

   Southwest Plant Interceptors

   There are three interceptors coming into the Southwest treatment plant.

   Interceptor Capacity Assessment Program

   The capacity assessment program includes four main components, each discussed in greater detail below:

   a. Construction of New Interceptors:

   The District periodically meets with the satellite communities' planning departments and local developers to stay informed about community growth. New interceptor

construction is governed under the District's Sewer Use Ordinance, which requires developers to construct the interceptor and the District participates in the cost.

Interceptors are sized to handle the peak anticipated flow from their service area. The District uses a value to 4,700 gallons/acre/day for interceptor sizing. This number was proposed in a 1960 Greeley and Hansen report and has proven successful to present times. The number allows for 3.5 dwellings per acre, 3.5 population equivalents per dwelling, 100 gallons/day/population equivalent, and a 3.83 peaking factor. The interceptors are then sized and sloped to carry the flows from the service areas without surcharging. The District maintains files on the interceptors that show their respective service area.

b. Permitting of public sewer extensions:

Whenever a public sewer is extended, an IEPA permit is required. Before IEPA will issue a permit, the District must certify on the IEPA permit application forms that "the sewers to which this project will be tributary have adequate reserve capacity to transport the wastewater that will be added by this project without causing a violation of the Subtitle C. Chapter I of the Environmental Protection Act." Generally the District will make the certifications if the area to be served falls within the service area of the interceptor to which the proposed collector sewer would be tributary. If the area falls within the interceptor service area, and if all technical and administrative requirements are met, the District will approve the installation of the new sewer. If the area to be served by the proposed sewer extension does not fall within the interceptor service area, or there are other pertinent site specific concerns, the District will require additional analysis prior to certification.

c. Connection Permits:

A District connection permit must be issued prior to any facility connecting to a public sewer. A requisite for a connection permit is that the public sewer to which it connects must be approved by the project's professional engineer. The approval includes certification that the sewer was installed correctly and has passed all required testing.

d. Evaluation of Existing Interceptors:

The interceptor sewer critical junctions and locations where backups have occurred are predominantly in the low lying areas close to the NEP Plant. There have been numerous heavy storms since the completion of new headworks and excess flow facilities at the Northeast Plant in 2011 that have not resulted in sanitary sewer overflows. District staff continues to evaluate these critical junctions and locations near the Northeast Plant, but it appears the issues near the intersection of Broadway Avenue and Crystal Lake Drive have been resolved.

Interceptor overflows are reported to IEPA and an electronic copy of the reports are maintained on District computer servers and hard copies of the reports are on file in the District offices.

The District is planning to dedicate much of the CMOM Program to investigating what needs to be done to eliminate all overflows in the low lying areas. Bolt down manhole lids have been used successfully at some places on the low lying pipe. The District also added a pump station that can divert Northeast Plant flow to the Southwest Plant via the 2nd Street Pump Station.

e. Sewer Modeling

Sewer modeling is a component of the District's Capacity, Management, Operational, and Maintenance (CMOM) plan, as it can allow for accurate calculations of the existing capacity of the sanitary sewer system. Sewer modeling can also help to measure the impact of inflow and infiltration on the sewer system due to rainfall events and determine where improvements can be made to reduce this excess flow. Finally, a sewer model can be used to determine the impact of future development on the sanitary sewer system and identify areas where additional capacity may be needed prior to the construction of such developments.

The District and the cities of Urbana and Champaign executed an Intergovernmental Agreement (IGA) in 2017 to work collaboratively in the development of a sanitary sewer collection system model. Per the agreement, Innovyze was hired to assist in the building of collection system model using the InfoSWWM® software. The sewer model and final training on the software was completed by December 2021.

The sewer modeling IGA was completed in December 2021. Each participating agency is now responsible for updating and utilizing the model on their own. The CCGISC is hosting the sanitary sewer model dataset for the participatory agencies to access and utilize. Due to the cost calibrating and validating the sewer model the District has not utilized the model.

f. Flow Monitoring

The District has permanent flow meter installations to measure influent and effluent flows at both treatment plants. Area velocity flowmeters are installed on each of the five major interceptors' tributary to the NEP. The flow values are indicated, recorded, and totalized by the plant's SCADA system.

The District has contracted with consultants for monitoring flow rates on District interceptor and collector sewers. The District performed flow monitoring upstream of the Myra, Race, and Amvet Pump Stations in East Urbana in 2023. That flow monitoring data will be utilized to assess the dry and wet weather capacities of the pump stations and quantify infiltration and inflow. The District plans to monitor flows upstream of the I-74 and WDWS pump station in calendar year 2025.

I. IDENTIFICATION AND PRIORTIZATION OF MAINTENANCE AND REPAIRS

The District's sanitary sewer system is a critical asset. The District has a history of managing, maintaining and funding it for several decades. This includes regular maintenance, cleaning, televising, and lining to extend the lives of the sewers. The financial model for UCSD includes an asset management component for the sewers that evaluates the dollars spent regarding maintenance based upon the age and the material of the sewers. This helps to ensure adequate funding for the maintenance of the sewers, force mains and pump stations of the District.

The purpose of the CMOM Program is to maintain the capacity of the interceptors and collector sewers at the same level that the interceptors had when they were new. This maintenance of capacity is pursued, as needed, by cleaning, televising, CIPP lining interceptors, point repairs, and in some rare cases, replacing existing portions of the interceptors with new.

Please see Section II-F for information on the District's systematic sewer cleaning and televising efforts.

More frequent maintenance cleaning is routinely performed on reaches of sewer identified to have problems associated with excessive root intrusion. grease buildup, or debris accumulation. The iMaint software is utilized to schedule preventative maintenance work order for sewers with an observed history of grease, roots, or debris accumulation.

The District also performs weekly inspections of several critical manholes towards the end of each week to prevent backups and overflows. This program was initiated in 1999 and became more formal in 2008.

1. Manhole Inspections and Rating System

District manholes are inspected to assess their physical condition using the inspection form contained in Appendix D. After the physical condition of each manhole is assessed a manhole priority score is assigned to each manhole. The manhole priority score ranges from 0 to 5 with a descriptions of the ratings provided below:

0 Rating - Manhole has collapsed or is in immediate danger of collapse or failure.

1 Rating - Manhole in danger of failure in 1 to 3-year time frame. Manhole in terrible condition

2 Rating - Manhole has significant structural defects or significant corrosion present. Broken or deteriorated adjusting rings or frame/cover. MH in Poor condition

3 Rating - Minor defects including minor cracks, missing mortar in brick joints, cracked adjusting rings, minor corrosion, root penetration or unsealed cover. MH in fair condition.

4 Rating - No defects observed. MH is in good condition.

Level 0 manholes are immediately scheduled for repair or replacement. Level 1 and 2 manholes are added to the next available Manhole Rehabilitation Project as funding is available for repair or replacement.

The manhole inspection form also requires an estimation of the rate of infiltration and inflow (I&I) observed during the inspection. Manholes with significant I&I are added to the next available Manhole Rehabilitation Project as funding is available for repair or replacement.

2. Pipe Inspections and Rating System

Please see Section II-F for information on the District's systematic sewer televising efforts. District staff are certified in NASSCO Pipeline Assessment and Certification Program (PACP) sewer coding and utilize the PipeTech software to document the pipe inspection results. PACP is the North American Standard for pipeline defect identification and assessment, providing standardization and consistency to the methods in which pipeline conditions are identified, evaluated and managed. The goal of PACP is to have pipeline system owners create a comprehensive database to properly identify, plan, prioritize, manage and renovate their pipelines based on condition evaluation.

Each NASSCO inspection condition record is assigned a numeric grade from 1-5, where 5 is the most significant defect. Defect grades are separated into Structural and Operations and Maintenance (O&M) categories.

Grades are used to determine:

PACP Inspection Rating—A weighted score of the number of defects for the pipe. A high score indicates many defects. Calculated for Structural, O&M, and Overall Pipe.

PACP Quick Rating—A code showing the number of defects for the pipe's two highest grades. Calculated for Structural, O&M, and Overall Pipe.

Pipe Ratings Index—The pipe's inspection ratings divided by the number of defects. Calculated for Structural, O&M, and Overall Pipe.

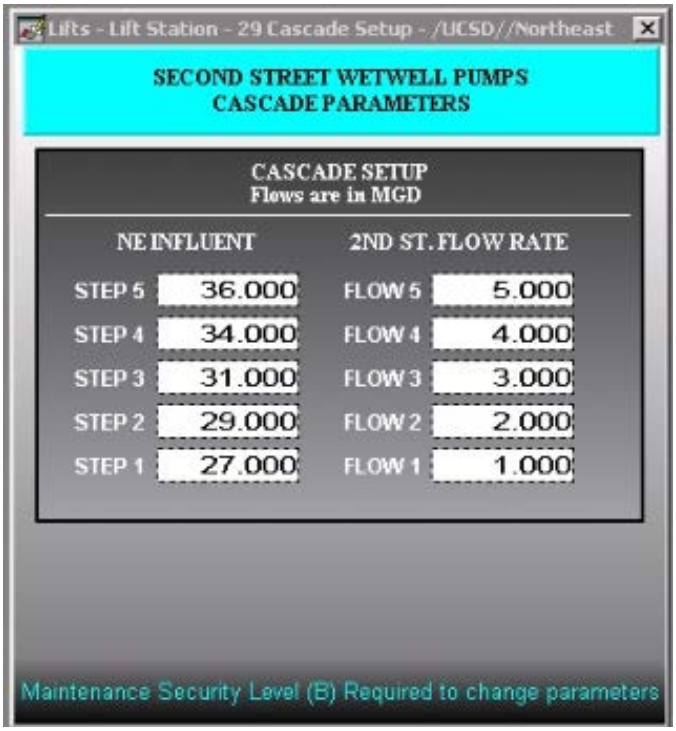
NASSCO Ratings and Indexes are stored in the PipeTech software. District Staff use the PACP rating scores along with a visual assessment of the pipe televising data to determine the severity of defects and the priority of pipe repair or replacement. High priority sewer lines are added to the next available Sewer Rehabilitation Project as funding is available for repair or replacement

J. OPERATIONAL CONTROL

2nd Street Pump Station

With the completion of the 2nd Street Pump Station 2017, the District has the ability to transfer flows from surcharged interceptors that are tributary to the Northeast Plant (NEP) to the 1st Street Pump Station witch is tributary to the Southwest Plant (SWP) during wet weather events. The 2nd Street Pump Station has two operating modes which are either Cascade or Constant. Typically, the 2nd Street Pump Station is operated in Cascade mode, which is an automatic program based on the

flow at the NEP. Operating in the Cascade mode allows the pump station to come on at a predetermined rate based the NEP influent flow rate. The NEP flow rates and corresponding 2nd Street Pump Station pumping rates are shown below.



The 2nd Street operation is interlocked with the 1st Street First Street Pump Station so that flow is reduced or shut off from 2nd Street if 1st Street does not have sufficient capacity to accept additional flows based on its wet well levels and pumping rates.

The constant mode allows the operators will make an active decision on the volume of flow to send to the 1st Street Pump Station by setting a defined rate of flow between the two stations.

The 2nd Street Pump Station also has an automated flushing operation where the pumps are set on a timer to come on periodically to remove scum and grease from the wet well during dry weather. The flushing operation is enabled or disable by District Staff.

Southwest Plant (SWP)

The raw wastewater pumps at the SWP are controlled during wet weather events to store flow in the interceptor sewers upstream of the plant. The pumps have variable frequency drives allowing the pump speeds to be reduced to throttle influent flows to the plant during wet weather events. Flow can be backed up to 16.5-feet above the bottom of the wet well to control flows into the plant during wet weather events.

Excess Flows

Flows between 41 and 63.75 MGD at the NEP and 17.25 to 44.13 MGD at the SWP are treated as excess flows receiving screening, sedimentation, and disinfection before being blended with the regular plant effluent.

K. ASSET MANAGEMENT

The ten steps included in the EPA's Fundamentals of Asset Management are:

- Develop asset registry
- Assess condition, failure modes
- Determine residual life
- Determine life cycle & replacement costs
- Set target levels of service (LOS)
- Determine business risk ("criticality")
- Optimize O&M investment
- Optimize capital investment
- Determine funding strategy
- Build asset management plan

The District is in the process of developing and implementing an Asset Management Plan. Some of the steps are addressed by the District's CMMS (computerized maintenance management system). Without addressing all of the details of the District's approach, the following includes brief summaries of what progress the District has made and what is remaining on the District's efforts to adopt Asset Management for its sanitary sewer system.

Step 1 – Asset Registry

UCSD created a Geographical Information System (GIS) for the sanitary sewer systems in 2005.The sanitary sewer system GIS mapping is hosted on the Champaign County Geographical Information System Consortium (CCGISC) server. The sanitary sewer collection systems for UCSD, the City of Champaign, the City of Urbana, Village of Savoy, Village of Bondville, and University of Illinois are all mapped on the CCGIS server providing a complete collection system map for all the sewers tributary to UCSD's treatment facilities. The GIS mapping includes collector sewers, interceptor sewers, manholes, force mains, valves, pump stations, wastewater treatment plants, and limited sanitary sewer lateral data.

Information including material type, installation date, diameter, depth, length, slope, and other physical attribute information are stored in the GIS for the District's sewers, manholes, and force mains.

The District maintains and preserves as-built drawings and easements of the sewers, pump stations, manholes, and force main that comprise the sanitary sewer system. Operation and Maintenance

manuals are also maintained and preserved for the pump stations. The easement documents and pump station as-built drawings have been cross linked to GIS assets.

The District uses the iMaint CMMS software to track operation and maintenance activities of its sewer collection system and pump station infrastructure. Sewer cleaning and repair activities are tracked in iMaint and work orders for sewer system maintenance are generated from iMaint. Pump Station operation and maintenance activities are also tracked using the iMaint software. All the pump station physical attribute information is stored in the iMaint software.

Step 2 – Assessing Condition and Failure Modes

Please refer to Section II-I on the Identification and Prioritization of Maintenance and Repairs for information on the District's sewer televising and manhole inspection condition assessment. Please also see Section II-F on Routine Preventative O&M activities for additional information on the District's sewer televising and pump station inspection efforts. Section II-F contains information on how failure modes for the District's pump stations are identified. Section II-I covers how the failure modes of the sanitary sewer pipes and manholes are addressed.

The District has developed a conditional assessment scoring system for its assets that assess the material, age (residual life), and physical inspection results (television or manhole inspection score) for an asset. The conditional scoring criteria are presented below.

I. Age

Level	Description
5	pre-1920
4	1921-1950
3	1951-1970
2	1971-1990
1	1991-present

II. Material

Level	Description
0	CIPP/PVC
3	Clay, Concrete, DIP

III. Pipe Inspection and Assessment – Weighting Factor of 2

Level	Description
5	PACP Structural Rating Score of 200 or more
4	PACP Structural Rating Score of 100 or more
3	PACP Structural Rating Score of 50 or more
2	PACP Structural Rating Score of 25 or more
1	PACP Structural Rating Score of less than 10

The conditional asset score is computed by adding the age, material, and 2 times the pipe inspection and assessment scores together to obtain the total conditional score for an asset. Maximum conditional score of 20 points. Pipes with no PACP Structural Rating Score would receive a level 0 score and be prioritized for cleaning and televising.

Step 3 – Determine Residual Life

The District recently completed entering installation date information into GIS for all of its collector sewers, interceptor sewers, manholes, force mains, and pump stations. Typically, the life of a sewer or force main pipe is estimated to range from 50 to 100-years before replacement is required. The residual life of pipe and manholes are determined by the asset's actual condition and anticipated remaining life. The District has developed a criticality scoring that accounts for the residual life of its interceptor and collector sewers.

The pump station mechanical equipment would be anticipated to have a life of 10 to 15 years while the structure along with the piping and valves would have a 50 to 100-year residual life. Pump station equipment and appurtenances installation date information is tracked using the iMaint software. The pump stations residual life based upon its age and type with maintenance and replacement activities scheduled managed utilizing the iMaint software.

Determining residual life and the use of decay curves does not presently receive much time or attention. In general, the condition of critical equipment is known and repair, rehab, or replacement of equipment and/or systems is anticipated and taken into account using the District's budget and planning processes. Repairs are generally treated as O&M expenses and addressed as maintenance while major rehab or replacement projects are treated as capital expenses.

Asset residual life is one of the three factors utilized in conditional scoring. Please see Step 2 for information on how residual life if factored into the conditional scoring of an asset.

Step 4 – Determine Life Cycle and Replacement Costs

Depreciated value says little about the actual value of a piece of equipment, pipe, pipe, or manhole. In fact, even when depreciated using decay curve methods or by depreciating based upon the

remaining life, the number tells little about the asset's actual value. Depreciating based upon condition (the modified approach) may, however, help tell outside organizations more information than straight-line depreciation. If an organization is keeping its equipment well maintained and/or renewed, the modified approach will reflect some of the organization's good practices in its financial numbers. The District is developing a conditional assessment score for its assets to help prioritize rehabilitation, replacement, and repair efforts. Please see Step 2 for information on the District's conditional assessment scoring of assets.

Step 5 – Set Target Levels of Service (LOS)

Regardless of whether or not an organization uses advanced asset management concepts or not, organizations have to determine appropriate levels of service. Knowing the appropriate level of service for each service provided is fundamental to any business. It provides the business with knowledge of the proper balance between service cost and the service performance.

The District has operated with, for the most part, an informal set of rules regarding how its collection system is operated and maintained. A stable, well-trained and well managed workforce, known regulations from governing bodies, reasonable reserve capacity, certain guiding principles, and proper levels of automation have all contributed to a collection system that has worked well and provided good quality service to its customers.

Key performance indicators for the District's sewer system include the following:

- Annual number of dry weather sanitary sewer overflows
- Annual number of wet weather sanitary sewer overflows
- Annual number of back-ups reported in District owned sewers

There key performance indicators are reported in the Annual Sewer Maintenance Report prepared by the District. The Level of Service (LOS) scoring of the key performance indicators are as follows for the sewer system including pipes, manholes, force mains, and lift stations.

KPI Annual Dry Weather Sanitary Sewer Overflows (SSO's)	
Level of Service (LOS)	Description
A	No SSO's
B	1 SSO's
C	2 SSO's
D	3 SSO's
E	4 or more SSO's

KPI Annual Wet Weather Sanitary Sewer Overflows (SSO's)	
Level of Service (LOS)	Description
A	No SSO's
B	1 SSO Event
C	2 SSO Events
D	3 SSO Events
E	4 or more SSO Events

KPI Annual District Sanitary Sewer Back-Ups	
Level of Service (LOS)	Description
A	0 backups
B	1 to 5 back-ups
C	5 to 10 back-ups
D	10 to 15 back-ups
E	More than 15 back-ups

The District had three sanitary sewer overflows in 2024 so LOS Rating of D was achieved.

The District had four (4) reported sewer back-ups caused by District owned sanitary sewers in 2024. For the period from 2020 to 2024 the District averaged four (4) reported sewer back-ups a year which is an exceptionally low number for the 36 miles of collector sewers and 96 miles of interceptor sewers that the District operates and maintains. Previously, the District averaged 13.5 back-ups for the years between 2010 to 2019. The low number of sewer back-ups is a result of the cleaning and inspection efforts of the General Maintenance Staff and the targeted cured-in-place pipe (CIPP) lining work completed by the District.

Step 6 – Determine Business Risk ("Criticality")

Risk and criticality are concepts that are used within asset management to help prioritize repair, renewal, or replacement of existing assets and/or installation of new assets. Not all projects can be constructed at the same time; there are financial, physical, and other resource constraints that hinder this. The level of risk or the critical nature of a specific asset can help determine how long the organization can wait to repair, renew, or replace it versus doing something with another asset in the same condition.

Although all of the District's collection system assets were built to serve the fundamental purpose of conveying wastewater to the District's Northeast and Southwest Treatment Plants, and all are therefore fundamentally important, some assets are more important than others and some involve higher levels of risk. A method to factor in criticality and risk for the pumping stations was developed for the District's After Hours Response Program.

Risk is defined as probability of failure times consequences of failure. Including risk level in decision-making has always been part of the District's approach and a general inclusion and understanding of risk while prioritizing maintenance and projects may provide the appropriate level of emphasis.

UCSD completed a criticality rating of its collector and interceptor sewers in 2021 as part of the asset management component of the CMOM plan. The criticality rating assessed quantity of flow, transportation system impact, environmental impact, and public health impact utilizing a rating system of 1 to 5 which are shown on the preceding pages. A total score is calculated using the summation of the quantity of flow, transportation system impact, environmental impact, and public health impact scores. The higher the total critically score the more critical the asset is.

Gravity Main Criticality Factor Notes

I. Quantity of Flow

Level	Description – Pipe Diameter
1	Less than or equal to 8 inch
2	10 to 15 inch
3	18 to 27 inch
4	30 to 42 inch
5	Greater than or equal to 48 inch

II. Transportation Impact

Level	Description – Distance from Transportation Infrastructure
1	More than 25 feet from road
2	Within 25 feet of local/collector road
3	Within 25 feet of arterial road
4	Within 25 feet of state highway
5	Within 25 feet of interstate highway or railroad

III. Environmental Impact

Level	Description – Distance from waterbody

1	More than 1,500 feet from body of water
2	701-1500 feet
3	401-700 feet
4	151-400 feet
5	150 feet or less

IV. Public Health Impact

Level	**Description – Location population density**
1	0-5 persons per acre
2	5.01-10
3	10.01-20
4	20.01-40
5	40+

The criticality score of an asset is computed by adding the quantity of flow, transportation, environmental impact, and public health impact scores together to obtain the total critically score for an asset. Maximum criticality score of 20 points.

Step 7 – Optimize O&M Investment

Most collection system assets are long-lived assets. Therefore, most of them will need some form of maintenance, repair, and/or renewal, and ultimately, they will need replacement. How much maintenance and repair are required and when to renew or replace are not simple questions to answer. Neither is optimizing investments in maintenance, repair, and renewal to provide the lowest life cycle costs while meeting appropriate levels of service. However, that is one of the goals of a good asset management program.

The District's approach to maintenance has changed over the years especially when the computer-based maintenance system was adopted. The District continually modifies its approaches to maintenance based upon industry trends and specific pieces of equipment. Further analysis and improvements of the District's maintenance practices will and should continue to optimize the investment in its assets and in its maintenance resources and practices.

Step 8 – Optimize Capital Investment

All utilities should optimize their capital investments. To optimize its capital investments, a utility must make sure that its capital investment decisions include the right solutions at just the right time. Capital investments in the wastewater industry are generally significant long-term infrastructure investments with significant long-term consequences. Therefore, the decisions cannot be approached lightly. Much thought and evaluation need to go into the decision-making process to make wise and cost-effective decisions.

The District, like other utilities, must use all of its assets wisely and optimize its capital investments. Projects are prioritized based upon need and follow-up planning and pre-design further investigate the need and best approach to meeting the intended purpose.

The District's planning process begins the process of building the strategic plan and initial justification for the project. The pre-design and design phases further analyze alternatives and evaluate whether or not the project is the right project at the right time. The bidding process sets the initial costs and provides a last go or no go decision. During the construction process, proper project management helps keep the project on time and on budget helping determine the final construction cost. Lastly, the turnover to the District's Maintenance and General Maintenance Divisions integrates the new assets into the District's group of existing assets. Proper O&M throughout the life of the asset ensures that assets operate effectively to control life-cycle costs appropriately.

Step 9 – Determine Funding Strategy

In general, the District derives funds from three areas to help pay for capital improvements including borrowing, user charges, and connection charges (ICRF and connection fees). The District takes advantage of State Revolving Fund loans to the extent possible to help fund rehabilitation projects. In the past, connection charges have helped fund interceptor system expansion as well as fund a certain level of the renewal projects.

The District has a five-year forward looking capital improvements plan (CIP) to fund collection system and treatment plant improvements. The CIP is developed by Staff, approved by the Board, and incorporated into the annual budget. Staff annually update the CIP each February in advance of the annual budget process. The District's five-year CIP is presented in Appendix I.

Step 10 - Build Asset Management Plan

As stated previously, the District does not have a formal advanced asset management plan presently; however, the District does use many of the concepts contained in the ten-step process to achieve an asset management plan and utilizes some steps more than others. The intended purpose of the

District's present operations is the same as an asset management plan: to meet expected levels of service within the District's collection system by managing those assets properly and/or by constructing new assets where necessary. The District's project planning process, like any process, is subject to analysis and improvement. The components, and even the framework of this process, should be reviewed and improved periodically.

Conclusions and Recommendations

The following are recommendations based upon a cursory review of asset management concepts and the District's present practices. Further investigation and analysis is required in most instances.

- In general, become more knowledgeable in advanced asset management concepts and determine which, if any, to integrate into the District's present system of managing its assets.

- Review written levels of service based upon stakeholder (customers, regulators, and other stakeholders) expectations. Consider presenting these to the District's Board for review and approval.

- Optimize and continuously improve the District's maintenance program, repair and renewal methods, and capital improvement planning methods. Integrate these programs and methods to optimize overall asset and process costs.

- Continuously monitor funding strategies for the District's asset management program.

- Continue to monitor and improve the District's approach to managing its assets by building upon and improving existing practices and adding advanced asset management concepts as appropriate.

An asset management plan does not need to include all advanced asset management concepts to be a successful asset management approach. Those concepts that add value to the program should be incorporated into the District's asset management approach; those that do not should not be included. As with any change, it will take time to incorporate these practices into the District's present practices and these should occur over a reasonable timeframe. Advanced asset management and District practices are also likely to continue changing over time and therefore, review of both should continue. The ultimate goal is that the District fully optimizes how it uses its assets and continually searches for and incorporates methods to improve its practices.

III. DESIGN AND PERFORMANCE PROVISIONS

Accurate information is an important part of improving collection system performance. The District's CMOM provision requires the District to monitor the implementation and, where appropriate, measure the effectiveness of elements of their CMOM programs. Satisfaction of this

requirement includes identifying performance indicators to describe and track the implementation of various aspects of their CMOM programs. Performance indicators are ways to quantify and document the results and effectiveness of control efforts. Performance indicators also can be used to measure and report progress towards achieving goals and objectives and to guide management activities.

The District completed an EPA Program Self-Assessment Checklist to evaluate the effectiveness of its CMOM program. A copy of the CMOM self-assessment checklist in included in Appendix H. District Staff will also conduct an annual review of its CMOM program each March to adjust and update the program to reflect current practices.

The District prepares an Annual Sewer Activity Report that documents the following activities and items for the sanitary sewer collection system:

1.) Sewer pipe and manhole cleaning efforts.
2.) Internal televising and manhole inspection efforts.
3.) Pump station maintenance.
4.) Dry weather reported blockages and basement back-ups.
5.) Wet-weather sanitary sewer overflows and basement back-ups.
6.) Cured-in-place sewer lining rehabilitation efforts.
7.) Pipe and manhole repair efforts.
8.) Participation in the District's overhead sewer program.

The Annual Sewer Activity report is distributed to the local Illinois Environmental Protection Agency (IEPA) office and other satellite collection system communities. A copy of the District's 2023 Sewer Report is included in Appendix C.

IV. OVERFLOW RESPONSE PLAN

Effective overflow response procedures requires considerable coordination and forethought. There are various types of emergencies and/or disasters that can have a very negative impact on the operation of the sanitary sewer system. The District's on-call program is a crucial part of this program. The District is available to the public any time of day or night, every day of the year. During regular business hours, all GM employees carry a cell phone during normal business hours, so regardless of where they are in the District, they can be dispatched to a problem immediately. After hours, a GM employee is on call and must report to work within 45 minutes to resolve collection system issues.

The District responds to all calls concerning the sanitary sewer system. The District has established the following procedure for documenting and responding to calls from users regarding the sanitary sewer system:

- Calls are received by District Staff during business hours or Answering Service during non-business hours.

- District Staff fill out a complaint form that includes complaint location, contact information, and a brief description of problem. Information is saved electronically on the District's iMaint and Access Database systems.

- District Management dispatches General Maintenance Staff to respond to the complaint by during normal hours of operations. The On-Call Manager dispatches an emergency call-out person for calls received during non-business hours.

- General Maintenance Staff responds to the complaint and completes the complaint form. The General Maintenance Supervisor fills in a description of what was observed and what response was made to the problem. The complaint information is entered into the iMaint and Access Database software.

- District Management Staff accesses the complaint forms electronically and investigates to determine if additional action is required.

A copy of the sewer back-up and overflow complaint form is included in Appendix F.

The General Maintenance & Engineering Division reviews all the complaint data to identify and prioritize sewer lines and manholes for repair, rehabilitation or replacement. The Engineering Staff manages an annual sewer point repair and cured-in-place sewer lining contract to address defects and other issues identified.

When a dry weather sanitary sewer back-up occurs, the sewer cleaning equipment is typically used to clean the blocked sewer. If more aggressive cleaning or root removal won't solve the problem, emergency underground utility locates are requested and the area is excavated to make the necessary repair. Property owners are provided a brochure explaining why the back-up occurred, clean-up procedures, what maintenance or repairs on the service lateral they are responsible for, and advice on how to repair or clean their service lateral if applicable.

When wet weather sanitary sewer overflows or basement back-up occur, General Maintenance Staff checks the downstream collector and interceptor sewers to see if they are surcharged. If the downstream collector and interceptor sewers are surcharged, the line with the sanitary sewer overflow or basement back-up may be flagged for an internal televised pipe inspection to attempt to identify infiltration and inflow sources. The tributary area may also be targeted for smoke, sump pump inspections, and dye water flood testing to determine infiltration and inflow sources. The property may also be contacted about participating in the District's Overhead Sewer Program to prevent future back-ups related to wet weather surcharging. Information on the District's Overhead Sewer Program is provided in Appendix G.

The District also performs weekly inspections of several critical manholes towards the end of each week to prevent backups and overflows. District staff also inspect known sanitary sewer overflow (SSO) locations during significant rainfall events to monitor for SSO's.

UCSD has barricades with appropriate signage notifying and warning the public of SSO's that can be set-up at locations where SSO's have occurred. District staff reviewed and updated its SSO and Sewer-Back-Up Response Standard Operating Procedures in 2023.

V. SYSTEM EVAULATION PLAN

The District does not have a formal system evaluation plan. District Staff inspect known sanitary sewer overflow (SSO) locations during significant rainfall events to monitor for SSO's. Pump

stations and flow meters, and level monitoring devices are monitored to identify areas of excessive infiltration and inflow (I&I) within the District's sewer system.

When areas of excessive I&I are observed additional field investigation is performed to identify the specific source of the I&I. Field investigation can include flow or level monitoring, dye testing, smoke testing, internal pipe televising, and manhole inspections. If a specific source of I&I can be identified than corrective action is taken to reduce or eliminate that I&I source which could include a sewer or manhole repair; sewer lining, disconnection of the source.

Recent examples of excessive I&I sources discovered and corrected by the District include:

- Hartwell Pump Station – University of Illinois Golf Course service lateral with excessive I&I that was causing SSO's at the pump station. The entire lateral was replaced by the University of Illinois to eliminate the I&I source.

- Freshville Pump Station – City manhole cone knocked off by grader that was allowing excessive I&I from adjacent creek causing high water levels and long pump run times a pump station. City repaired the manhole to eliminate I&I source. District Staff smoke tested the sewershed tributary to the pump station in 2022 and discovered several I&I sources. The District is working with the City of Urbana to eliminate all the identified I&I sources.

- Interceptor VII-E-S – Seven District manhole frame and covers knocked off by mower that were allowing excessive I&I from adjacent ditch. District repaired the manholes to eliminate I&I source.

VI. REPORTING AND MONITORING REQUIREMENTS

Please see Section IV (Overflow Response Plan) for the District program for monitoring Sanitary Sewer Overflows (SSO's), basement back-ups, and general public complaints. SSO's are reported via e-mail or phone to the local regional IEPA office within 24 hours of the report of the event. A letter summarizing the incident along with a Sanitary Sewer Overflow Bypass Notification Summary Report are submitted to the IEPA Springfield and Regional Offices within five calendar days of the report of the event. The SSO incident letter and form are sent via certified mail to the IEPA Springfield Office. All SSO, basement back-up, and general public complaint reports are kept on file at the District for perpetuity. SSO location data is also part of the GIS dataset.

VII. THIRD PARTY NOTICE PLAN

The Urbana & Champaign Sanitary District is proactive in working to prevent releases of sanitary sewage into the environment. However, it is not possible to prevent all such events, and therefore, the District has adopted the following public notification protocol:

a) Contact the Regional Illinois Environmental Protection Agency (IEPA) office at (217) 278-5800 within 24-hours of the event with an overflow incident report. A report is sent once all the relevant data is collected and analyzed. If a public health hazard is likely due to the overflow, contact the Champaign County Health Department at (217) 352-7961 and / or the Illinois Department of Public Health at (217) 278-5900.

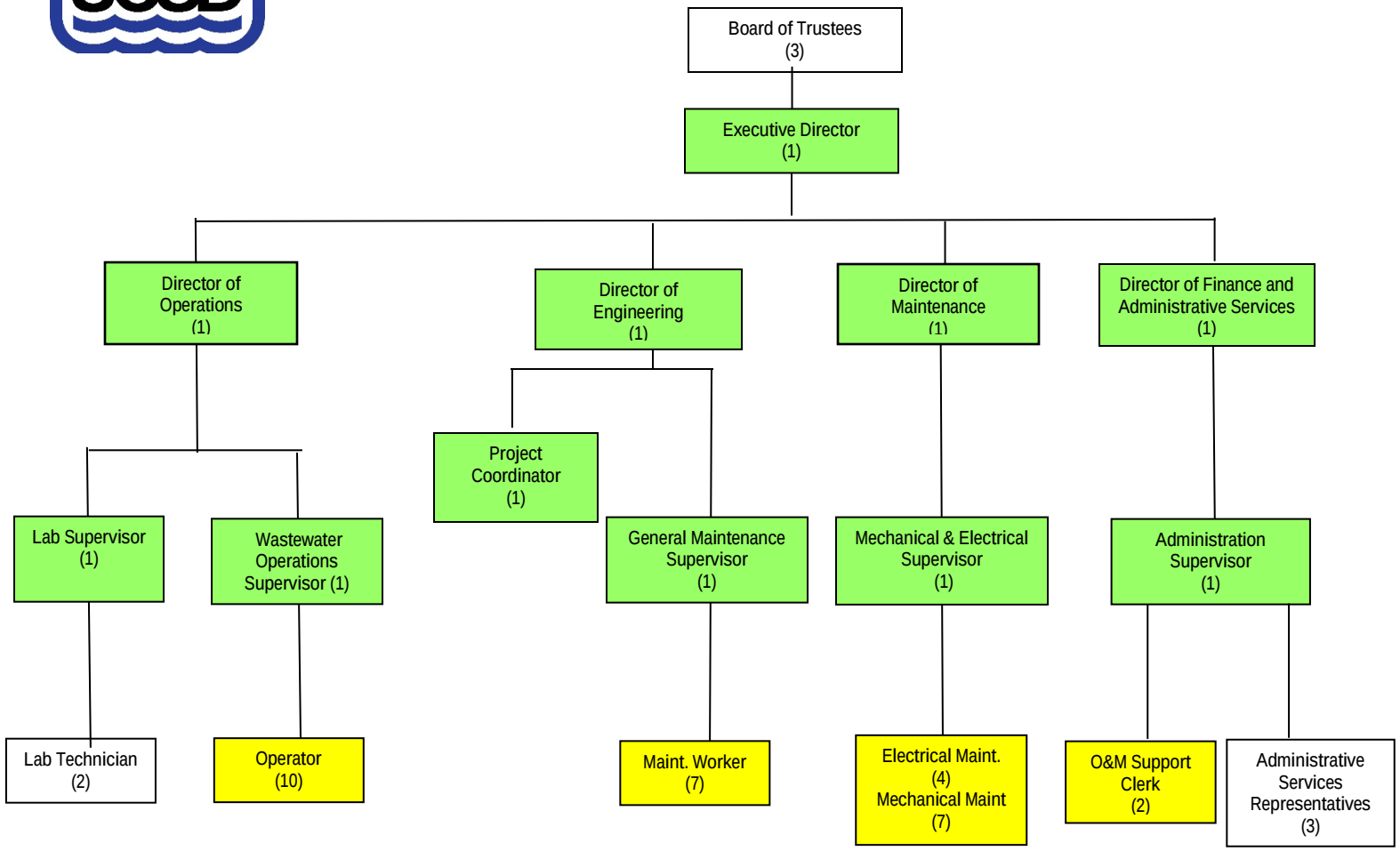
b) Post sign(s) where and when appropriate at the site of a release event immediately upon discovery and confirmation of such an event, and leave them up as needed after the source of the release has been corrected to warn affected parties of the SSO.

Basement back-ups that are caused by the homeowners' blockages are not classified as SSO's by the District and are not subject to the SSO reporting requirements. If reported, they are summarized in the District's annual report provided to the Illinois EPA.

Property owners are provided a brochure explaining why the back-up occurred, clean-up procedures, what maintenance or repairs on the service lateral they are responsible for, and advice on how to repair or clean their service lateral if applicable. A copy of the property owner sewer back-up notification brochure is provided in Appendix E.

APPENDICES

THE URBANA & CHAMPAIGN SANITARY DISTRICT
ORGANIZATIONAL CHART



Appendix B - Lift Station Monthly Inspection Report
Urbana Champaign Sanitary District

PM Work Order

WO# : 220844
Description: PUMP STATION MONTHLIES - MECHANICAL

Status: Completed
Supervisor: JORDAN VENATTA
Skill: M2
Reference:
Project:
Assigned To: tp2
Priority:
Site Comments:

Date Scheduled: 08/11/2020 12:00:01 AM
Requested By: SCHEDULE
Requestor Phone #:
Assigned By:
Building : STALEY
Room: Z01
Floor: TUBE
Date Completed: 08/11/2020 11:08:40 AM

Asset:	LFT00001	STALEY LIFT STATION
Location:	LFT	LIFT STATIONS
Procedure:	M-LFT1	MONTHLY PUMP STATION MAINTENANCE - MECHANICAL

Labor	Craft ID	Resource	Est. Hours	Act. Hours
	M2		1.34	
Total Labor :			**1.34**	**0.00**

Tasks		Est Down Hours	Act. Down Hours	Safety
M0164	MONTHLY PUMP STATION MAINTENANCE - MECHANICAL	0.00		False

Details:

1. Check wet well for grease buildup and coordinate with Task (3) on electrical pm.

2. Check operation of mechanical seals on pumps.

3. Clean or flush seal water lines as needed. If filter is installed clean or replace filter element.

4. Observe check valve for proper operation, check for leakage around stem gland, adjust as needed.

5. Check operation of dehumidifier, empty the drain pan if needed.

6. Add water to sump pump sump; flush sump pump.

7. Check pumps for excess heat or vibration.

8. Before leaving pump station check tube, generator and electrical control panels are closed and locked. Check fence for security.

9. Return all controls to normal operation for the station. Record any exception in station log book and report abnormal conditions to NE Operations and your Supervisor.

10. Clean up in pump station tube and grounds area inside and around fence, pick up trash and bring it in from the pump station.

11. If station is equiped with a Davit Base, inspect base and make certain all bolts are tight and not damaged & base is free of cracks, dents, bends, distortion or any other form of damage.
12. Record generator hour meter reading in log book.
13. Check eng temp and oil pressure after operating condtions have stablized. Record eng temp and oil pressure. _____/_____

Total Downtime:			
	Task	**0.00**	**0.00**
	Other	**0.00**	**0.00**
	Total	**0.00**	**0.00**

Date Completed:	Current Meter:	Supervisor:

Filter:
pkey = 348193

Appendix B - Lift Station Monthly Inspection Report
Urbana Champaign Sanitary District

PM Work Order

WO# : 221128
Description: PUMP STATION MONTHLIES - ELECTRICAL

Status: Completed
Supervisor: JORDAN VENATTA
Skill: E2
Reference:
Project:
Assigned To: jbarker
Priority:
Site Comments:

Date Scheduled: 08/11/2020 12:00:01 AM
Requested By: SCHEDULE
Requestor Phone #:
Assigned By:
Building : STALEY
Room: Z01
Floor: TUBE
Date Completed: 08/11/2020 11:27:00 AM

Asset:	LFT00001	STALEY LIFT STATION
Location:	LFT	LIFT STATIONS
Procedure:	M-LFT	MONTHLY PUMP STATION MAINTENANCE - ELECTRICAL

Labor	Craft ID	Resource	Est. Hours	Act. Hours
	E2		1.28	
	E1	ZA		0.75
Total Labor :			**1.28**	**0.75**

Tasks		Est Down Hours	Act. Down Hours	Safety
LM0005	MONTHLY PUMP STATION MAINTENANCE - ELECTRICAL	0.00		False

Details:

1. Check control system for proper operation, verify PLC operation of Station in auto mode.

2. Check wet well for correct operating levels.

3. Check condition and position of floats, wires, and transducer - clean as needed.

4. Check operation of ventilation system, leave in auto mode of operation.

5. Check for proper lighting. Note any needed repairs.

6. Record #1 pump run time _____.

7. Record #2 pump run time _____.

8. Check alternator and trickle charger output.

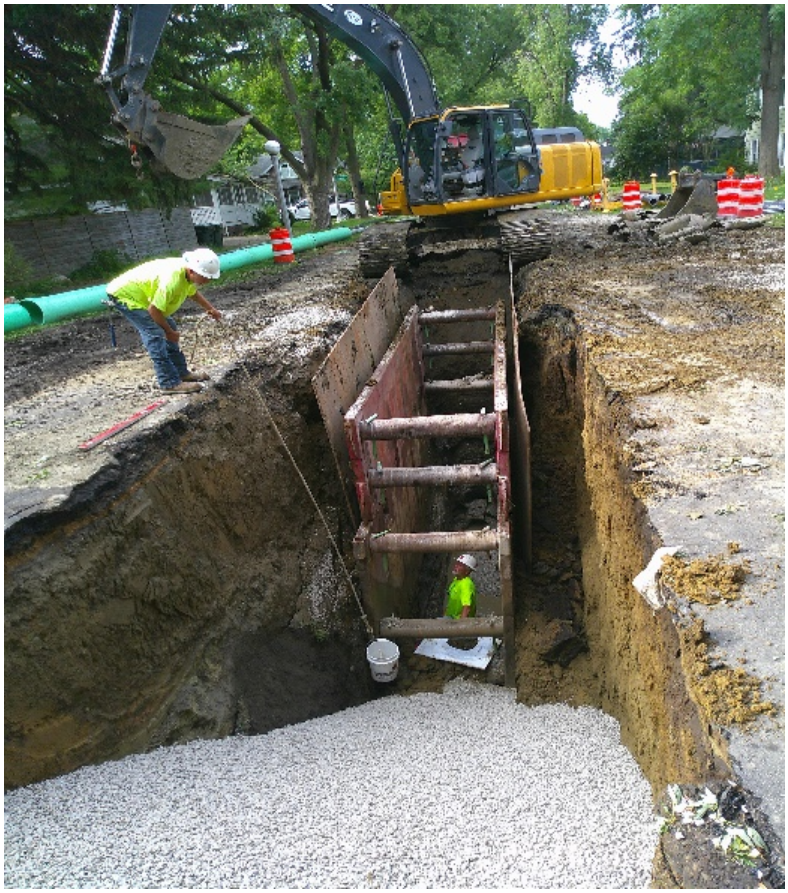
9. While generator is running the station, turn on pumps and observe voltage droop. Report any problems to supervisor.

10. Check operation of Square D surge arrester. It should show 3 green lights.

Total Downtime:			
	Task	**0.00**	**0.00**
	Other	**0.00**	**0.00**
	Total	**0.00**	**0.00**

Date Completed:	Current Meter:	Supervisor:

Filter:
pkey = 348477



1946 South Interceptor Sewer Repair Construction of a gravity sewer in Urbana

2024 Urbana & Champaign Sanitary District Collection Systems Activity Report

Prepared by: **Matthew Graven, Project Coordinator**
Logan Miller, General Maintenance Supervisor

MEMORANDUM

DATE: February 4th, 2025

TO: Sanitary Sewer Technical Committee

FROM: Urbana and Champaign Sanitary District

UCSD Overview

The Urbana and Champaign Sanitary District's (UCSD) sewer system services approximately 43.9 square miles of land, serving a total population of 155,000 residents of which about 11,100 live in unincorporated subdivisions (based on the 2020 US census). UCSD owns and maintains approximately 9% of the 400 miles of collector sewers in the service area. The other 90% of the collector sewers are owned and maintained by the City of Urbana, City of Champaign, Village of Savoy, the Village of Bondville and the University of Illinois. Other significant statistics of the portion of the sewer system that UCSD owns includes:

- 43,300 wastewater billing accounts
- 36 miles of collector gravity sewers ranging in size from 8 to 15 inches in diameter
- 96 miles of interceptor sewers ranging in size from 8 to 54 inches in diameter
- 18 miles of pressurized mains ranging in size from 4 to 24 inches in diameter
- 2,846 manholes
- 28 lift stations

UCSD's collector sewer system budget is funded by a Sewer Benefit Fee (SBF) based on potable water consumption. This fee is only charged to those ratepayers that are not in an incorporated city or village. The fee provides a dedicated source of funds for the operation, maintenance, and rehabilitation of the UCSD's collector sanitary sewer system. Capital improvement of the interceptor sewers, lift stations, and force mains are funded out of the Interceptor Cost Recovery Fee (ICRF) and Connection Permit Fees. Maintenance and rehabilitation of the interceptor sewer system and the treatment plants is paid for by the UCSD-wide user charge fee.

Sanitary Sewer Maintenance Activities

A summary of UCSD sewer maintenance activities in 2024 is presented in Table 1.

Weekly & Monthly Checks - District staff performs weekly manhole checks looking for backups and flow constrictions in areas that have experienced problems in the past due to grease, roots, debris, or other issues. In response to those checks and reported backups, collector sewers and interceptors receive additional cleaning and televising. The weekly checks resulted in an additional 2,309-ft of collector sewer and 1,100-ft of interceptor sewer cleaning in 2024. UCSD staff also does a bi-monthly check of all bolt down manhole lids.

- **Collector Sewer Televising -** The District's goal is to clean and televise all the collector sewers on a five-year cycle (20% annually) which is 38,016 ft per year. In 2024, the Glenshire, Maynard Lake, and Lincolnshire collector sewers were cleaned and televised for a total of 59,519 lineal-feet (31%). The District completed its five-year cycle of collector sewer cleaning and televising in 2024. The history of District's cleaning and televising activities from 2020 through 2024 is presented in Figure 1.

- **2025 Collector Televising Schedule** - In 2025, the District's schedule will include Brookshire, Loral, IL Central RR, Timber Hills and Windsor Park.

- **Interceptor Sewers** – The District's goal is to clean and televise all the interceptor sewers on a twenty-year cycle (5% annually) which is 25,080 ft per year. In 2024, District staff cleaned and televised 16,997 lineal-feet (3.3%) of interceptor sewers. Interceptor sewers cleaned and televised included Ozier, Lake Falls Blvd, VI, VK, and Clearview. District Staff cleaned and televised 31,804 feet of interceptor sewer in 2023 and 48,136 feet in 2022 so they are still on track with the 20-year cleaning cycle. The history of District's cleaning and televising activities from 2020 through 2024 is presented in Figure 1.

- **2025 Interceptor Cleaning Schedule** - In 2025, the District's schedule for interceptors will include I-B, I-D, V-J, V-K, VII-F-N, VII-F-NW, 1956 VI, 1956 VI Staley Line, and Sawgrass.

- **Manhole Maintenance and Repair Performed by UCSD Staff -** As part of the District's cleaning and televising program, manholes were inspected for defects and repaired as needed. Repairs to manholes made by District staff included: raising 2 manholes to grade, 3 frame and lid replacements and installation of 3 pick-less covers. The history of the District's manhole repair activities from 2020 through 2024 is presented in Figure 2.

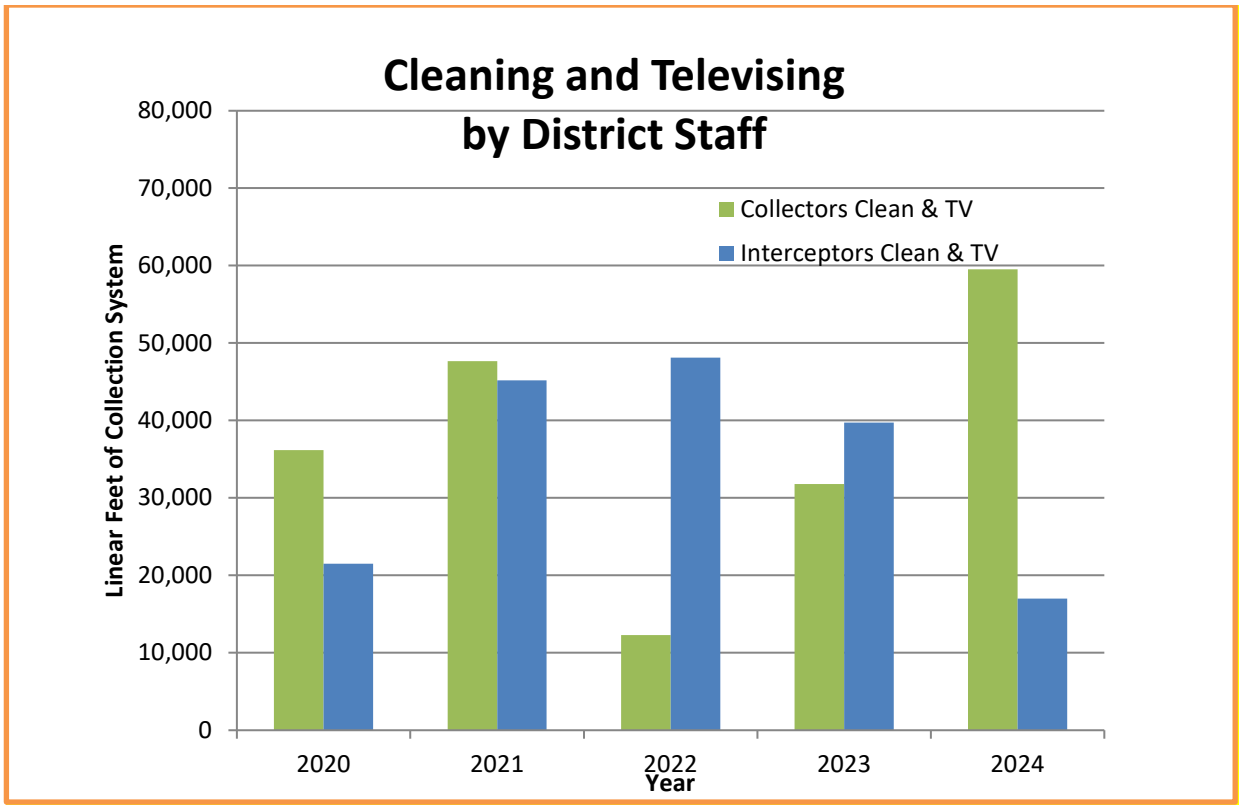


Figure 1: District's Sewer Cleaning and Televising

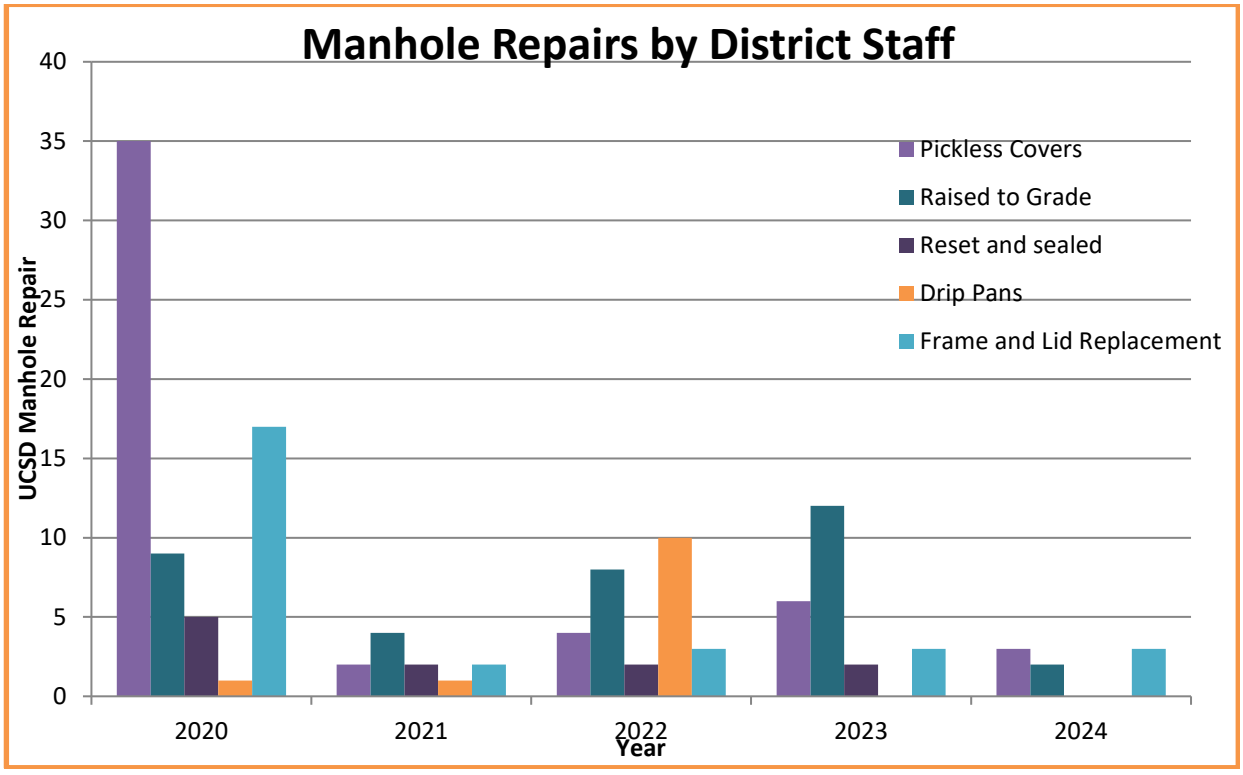


Figure 2: District's Manhole Repairs by Staff

- **Surveying -** In 2018, UCSD began a program to survey all 2,846 UCSD manholes to collect state plane coordinates, rim, and invert data. In 2024, Staff surveyed a total of 47 manholes.

- **Creek Crossing and Force Main Inspections –** In 2024, Staff inspected all of the 96 interceptor sewer creek crossings in the UCSD service area. The inspections were organized and updated within the GIS system. Staff also inspected the force main discharges for all the District Pump Stations. In 2024, no creek crossing or force main issues were observed.

- **Manhole and Sewer Repairs by Contractor –** In 2024, SNC Solutions repaired 7 manhole under the FY 24-26 Miscellaneous Sewer Repair Project. SNC also performed a force main and interceptor sewer repair. A summary of manhole and sewer repairs is presented in Table 2.

Location	**Cost**
Windsor-Curtis Phase II Interceptor Sewer Repair	*
1946 South Interceptor Sewer Repair Project	$115,622.91
East Main Street Pump Station Force Main Repair	*
Water Street and Busey Avenue Casting Replacement (2)	$7,555.74
510 Crestwood Dr. and Modern Interceptor Rim Adjustment (2)	*
Perkins Rd and Carroll Ave Casting Replacement	$2,293.14
2nd Street and Daniel Manhole Lid Replacement	*
East Main Street – 1956 Main and Modern Interceptor MH Repair	*
Totals	**$125,471.79**

Table 2: List of Manhole and Sewer Repairs by Contractor
*-bill not received yet from SNC Construction

Figure 3: 1946 South Interceptor Sewer Repair Failed CIPP Liner

- **Cured-In-Place Pipe (CIPP) Rehabilitation by Contractor** - No interceptor or collector sewers were rehabilitated utilizing CIPP in 2024.

  UCSD's interceptor and collector sewer rehabilitation lengths, and costs of sewer lining projects between 2020-2024 are summarized in Figures 4 and 5 respectively.

  UCSD has lined 102,835 lineal-feet (19.5 miles or 20.5%) of interceptor sewers and 31,587 lineal-feet (6 miles or 17%) of collector sewers to date.

  UCSD has been focusing on NEP and SWP treatment plant improvements in lieu of sewer lining projects. UCSD is bidding $1,000,000 of interceptor and collection sewer lining projects in 2025.

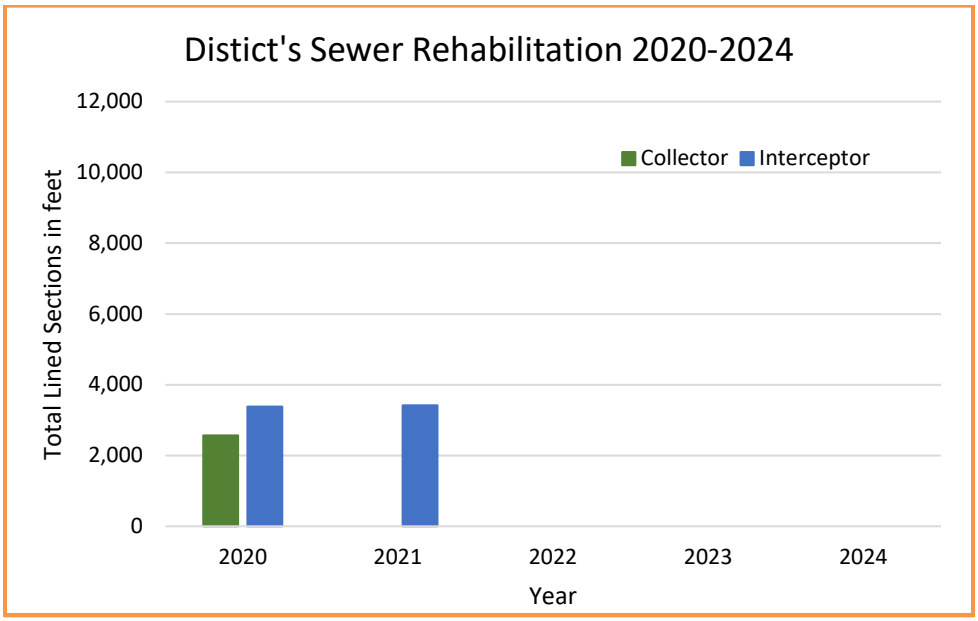


Figure 4: District's CIPP Sewer Lining Lengths between 2020-2024

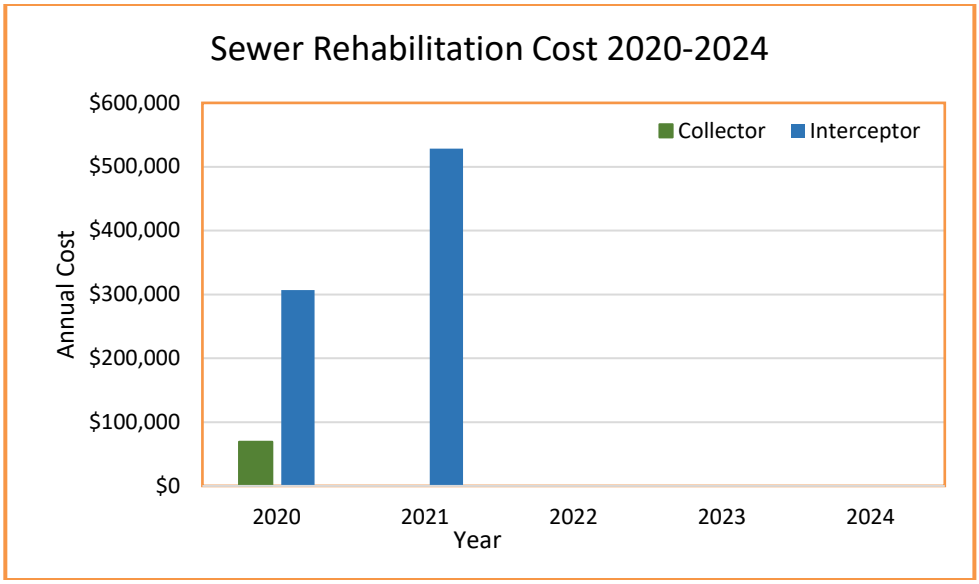


Figure 5: District's CIPP Sewer Lining Costs between 2020-2024

- **Flow and Depth Monitoring –** In 2024, UCSD operated and analyzed ADS Echo depth monitoring units at eight locations through-out the District's service area.

  In 2024, the District operated depth monitoring units at:

  1. Modern Interceptor Sewer – Urbana – MH# UC187735
  2. Interceptor VII-I – Champaign – MH# UC180732
  3. University and Gregory – Urbana – MH# 187800
  4. Amvets Flow Split Manhole – Urbana – MH# UC187678
  5. VII-F Route 10 – Champaign – MH# UC183793
  6. Liberty on the Lake – Savoy – MH# UC189086
  7. 1923 Mathews – Urbana – MH# UC181154
  8. 1923 Gregory – Urbana – MH# UC186264

  These Echo units will be utilized to monitor sewage depths to identify cleaning frequencies for these high sewer maintenance locations.

  The District installed six flowmeters upstream of the Race, Myra, and Amvets Pump Stations. Flow monitoring was completed in March 2024. The cost of the flow monitoring was $54,050. Based on flow monitoring data these pump stations have sufficient capacity available for current and future projected flows.

  The district plans to install six flowmeters upstream of the WDWS and I-74 Pump stations. Flow monitoring is anticipated to start in September 2025 and will continue through March 2026. The estimated cost of the flow monitoring is $75,000.

- **Pump Station Maintenance -** UCSD staff removed debris and grease at all pump stations on a quarterly basis. In 2024, Staff spent 252 hours removing debris and grease at 28 pump station wet wells. Staff also spent 10 hours maintaining 7 air relief valves out

of a total of 33 air reliefs on force mains, this is 21% of the air relief valves receiving maintenance in 2024.

- **Complaint Calls**
  In 2024, UCSD received collection system complaint calls related to (refer Figure 6):
  - 2 blow backs from District cleaning activities
  - 4 back-ups in District owned sewers
  - 10 back-ups in privately-owned sanitary sewers/laterals

The District had four (4) reported sewer back-ups caused by District owned sanitary sewers in 2024. For the period from 2020 to 2024 the District averaged four (4) reported sewer back-ups a year which is an exceptionally low number for the 36 miles of collector sewers and 96 miles of interceptor sewers that the District operates and maintains. Previously, the District averaged 13.5 back-ups for the years between 2010 to 2019. The low number of sewer back-ups is a result of the cleaning and inspection efforts of the General Maintenance Staff and the targeted cured-in-place pipe (CIPP) lining work completed by the District.

The District operates an aggressive sewer cleaning and televising program with five (5) and twenty (20) year completion cycles for the collector and interceptor sewers. General Maintenance Staff also perform weekly checks at critical locations in the sewer collection system to identify and eliminate potential back-ups. The General Maintenance Staff should be commended for their excellent performance on sewer maintenance and low back-up occurrences for the period of 2020 to 2024.

The District received a total 72 sewer complaint calls in 2024. The remaining calls were for City and Village owned collector sewers. Calls for City and Village owned collector sewers were forwarded to the appropriate contact at the agency for response.

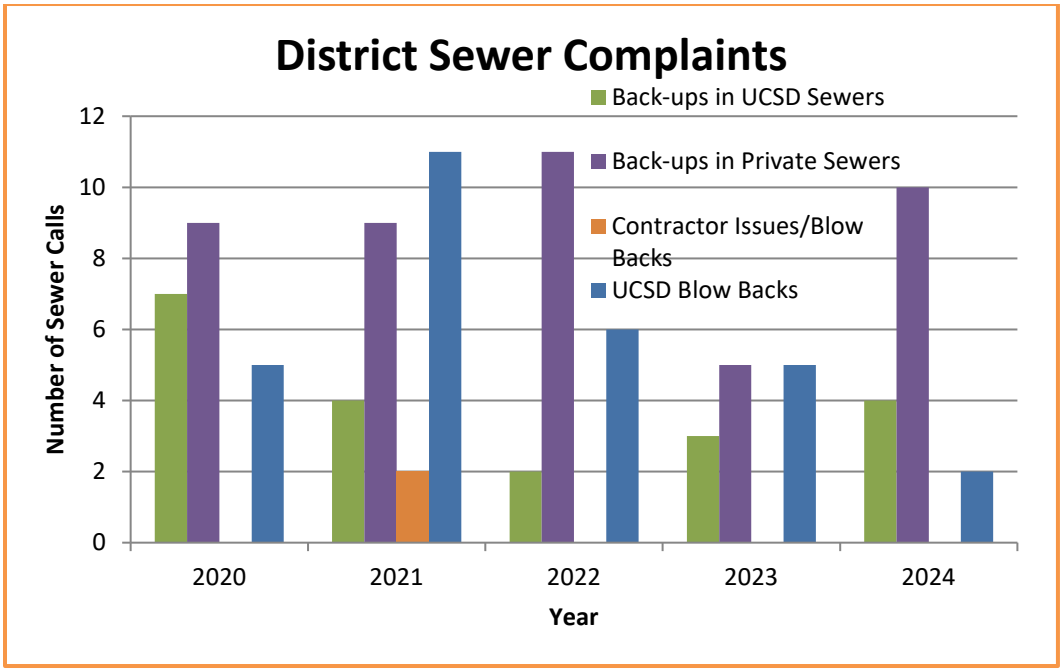


Figure 6: District's Sewer Complaint History

- **Smoke Testing –**No smoke testing was performed.

- **Sump Pump Investigations -** No sump pump investigations were requested to be performed in 2024.

- **Dye Testing –** One sewer connection dye test was performed in 2024.

- **Overhead Sewer Program –** No overhead sewer installations were performed in the UCSD-owned collector area. One was competed in Champaign and one was completed in Urbana in 2024. The District reimbursed Champaign $1,750.00 and Urbana $1,122.00 for the overhead sewer installation.

- **Blowback Sewer Clean-Up Program** - The Blowback Clean-Up Service Program involves UCSD contracting with a professional water damage restoration company to clean-up properties where sewer blowbacks occurred from hydro jetting sewer cleaning operations by the District. The District has 2 reported sewer blowbacks in 2024 with none requiring clean-up services. UCSD did not do any sewer lining in 2024 that would have resulted in blowbacks by contractors.

- **Equipment Purchases and Issues** – The District purchased a new combination sewer cleaning truck for $580,000 in 2024. The new combination truck will replace a 20-year old jetting truck and a 17-year old vacuum truck. The new combination truck is anticipated to be delivered in June or July 2025.

- **Projected FY26 Capital Improvements Budget**
  - $580,000 for Combination Truck Replacement
  - $1,000,000 for CIPP rehabilitation of interceptor and collector sewers
  - $200,000 for repair of interceptor sewers
  - $25,000 for repair of collector sewers
  - $250,000 for the design of the I-74 Pump Station Replacement

- **Sanitary Sewer Overflows (SSO) and Discharges –** UCSD had three SSO's and two discharges that were reported to the Environmental Protection Agency in 2024.
  1. 2nd Street Pump Station Air Relief SSO - January 20, 2024
  2. 2nd Street Pump Station Force Main Air Relief Valve SSO – 2nd and Daniel Streets – March 15, 2024
  3. 2nd Street Pump Station Force Main Air Relief Valve SSO – 4th and Gregory Streets – July 24, 2024
  4. East Main Pump Station Force Main Leak Discharge – University Avenue between Smith and Dodson – October 21, 2024 – Discharge was contained in ditch
  5. Southwest Plant RAS Suction Line Leak Discharge – Adjacent to Station I Control Building – December 19, 2024 – Discharge was contained in ditch

Public Outreach Activities

UCSD staff provided 20 tours to 385 visitors throughout the year. This is a significant increase from 16 tours and 258 visitors in 2023. Four of the tours were associated with the U of I, four with Parkland, one local high school, and eleven professional organizations. The large increase in the number of visitors in 2023 was shared between educational institution and professional organization interests.

Capacity, Management, Operational, and Maintenance (CMOM) Plan

The District reviewed and revised its existing CMOM plan in 2024. The District finalized conditional rating of its collector and interceptor sewers based on the PACP structural score. The criticality and conditional rating scores are being utilized to determine the prioritization of a pipe asset for repair or rehabilitation projects.

TABLE 1: 2024 SEWER ACTIVITY SUMMARY		
	Quantity	**Comments**
Weekly and Monthly Checks:		
Weekly Collector and Interceptor Sewer Checks	52	Staff hours 425
Collector Sewer Maintenance Identified During Weekly Checks	2,309 LF	Staff hours 52
Interceptor Sewer Maintenance Identified During Weekly Checks	1,112 LF	Staff hours 24.75
Bi-Monthly Checks on Bolt Down Manhole Covers	5	Staff hours 3
Manhole Activities:		
Manholes Raised to Grade	2	Staff hours 19
Manhole Reset and Seal	0	Staff hours 0
Manhole Frame and Lid Replacement	3	Staff hours 14
Manhole Drip Pan Installation	0	Staff hours 0
Manhole Pickless Cover Installation	3	Staff hours 2
Pipe Activities:		
Collector Sewer Cleaning & Televising	59,519 LF	Staff hours 1,351
Interceptor Sewer Cleaning & Televising	16,996 LF	Staff hours 586
Air relief valves	7	Staff hours 10
Lift Station Activities:		
Grease Removal at 28 Lift Stations	47	Staff hours 32
Surveying		
Collector Manhole Inspections	291 MHs	Staff hours 338
Interceptor Manhole Inspections		
Complaints		
Back-Ups in Private Sewers/Laterals	10	
District Cleaning Activities – Blowbacks	2	
Backups in UCSD Sewers	4	
Other		
Smoke Testing	0	Staff hours 0
Dye Testing	1	Staff hours 2
Creek Crossing Inspections	96	Staff hours 62
Force Main Discharge Inspections	28	Staff hours 39

APPENDIX D - MANHOLE INSPECTION FORM

MANHOLE INSPECTION WORKSHEET

URBANA & CHAMPAIGN SANITARY DISTRICT

MANHOLE #_____ **Subdivison/Interceptor Name: _____**

Date: ___/___/_____ Inspected By: _____

Street Address: _____ City:_____

Location: _____ Survey Point No:_____ Rim Elev: _____

Bottom of Manhole Elev: _____

COVER AND FRAME

Cover: Dimensions (in.): _____ Bolt Down (Y or N) _____

Buried (Y or N): _____ Depth Buried (inches): _____

Frame: Condition: _____

CHIMNEY AND CONE

Cone: Type (eccentric, concentric, flat top): _____

Material: _____ Cone Condition: _____

Adjusting Rings: Material: _____ Number/Depth (in.): _____

Adjusting Rings Condition: _____

Cast Riser Rings: Number/Depth (in): _____ Condition: _____

WALL AND STEPS

Wall: Diameter (in.): _____ Material: _____ Lined (Y/N) _____

Wall Condition: _____

BENCH AND CHANNEL

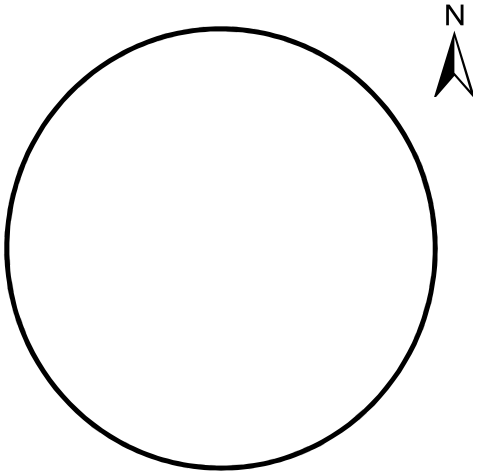
Bench: Condition: _____

Channel: Material: _____ Condition: _____

SEWER LINES AND DIRECTIONS

	Size	Material	Inv. Depth	Drop Inv. Depth
A (out)				
B				
C				
D				
E				
F				

(Complete Table and Diagram)



Drop Manhole Y/N _____ Type (Interior or Exterior) _____

Conflict Manhole Y/N _____ Comment _____

If a flow direction is apparent, show lines with arrows

(Over)

APPENDIX D - MANHOLE INSPECTION FORM

Manhole Priority Rating: _____ **Estimated I&I Rate (gallons per day)**: _____

0 Rating - Manhole has collasped or is in immediate danger of collapse or failure.

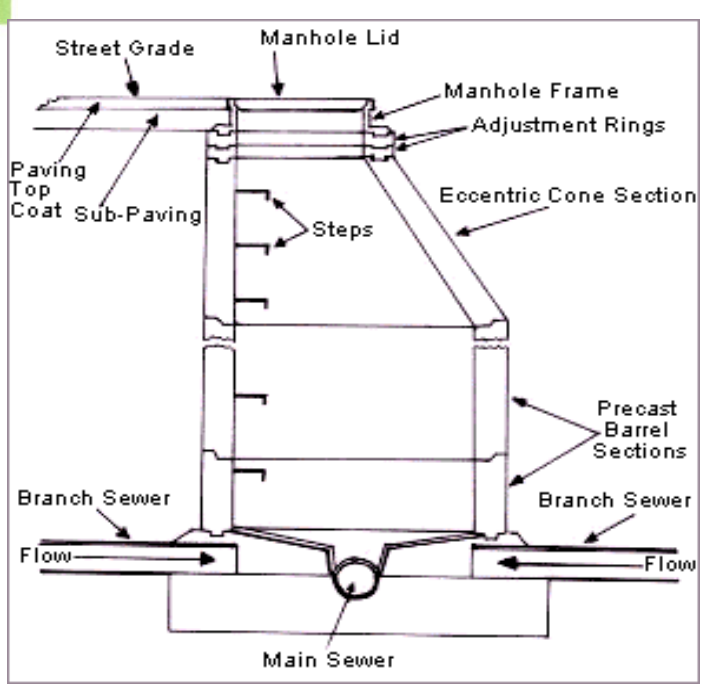
1 Rating - Manhole in danger of failure in 1 to 3 year time frame. Manhole in terrible condition.

2 Rating - Manhole has significant structural defects or significant corrosion present. Broken or deteriorated adjusting rings or frame/cover. MH in Poor condition.

3 Rating - Minor defects including minor cracks, missing mortar in brick joints, cracked adjusting rings, minor corrosion, root penetration or unsealed cover. MH in fair condition.

4 Rating - No defects observed. MH is in good condition.

LEAK SIZE or DRIP	LEAK SIZE or DRIP	Amount Loss Per DAY *(Gallons)*	Amount Loss Per MONTH *(Gallons)*	Amount Loss Per YEAR *(Gallons)*
1 (One) Drop *per second*		4.5	139.5	1,642.5
2 (Two) Drops *per second*		9	279	3,285
3 (Three) Drops *per second*		18	558	6,570
1/16 Inch or 1.6mm		822	25,002.5	300,030
1/8 Inch or 3.2mm		2,850	86,687.5	1,040,250
1/4 Inch or 6.5 mm		11,400	346,750	4,161,000
1/2 Inch or 13mm		45,600	1,387,000	16,644,000



I&I Location

Other Comments: _____

_____

_____

_____

Revised 10/16/2019 BMB

Complaint Log Report

Log # **1196**

Date: Friday, June 12, 2020

Time: 6:24 AM

Name of Person taking call:

Routing 1	***Routing 2***
1) Bruce 2) Wade 3) Kim 4) Rick M. 5) Logan	1) Mark 2) Bruce 3) Jackie 4) Kim. 5) Rick M. 6) Logan

Name: Sharon Sholer

Street Address: 2512 Stanford

Parcel No:

City: Champaign

Home Phone: (217) 898-8604

Work Phone:

Cell Phone:

Dialogue:

Plumber called and said UCSD manhole was holding. Dipatched Tyler and AJ.

Complaint Type 1:	***Complaint Type 2:***	***Admin Comment:***
Filter Flies Other Plant Odor	Manhole Overflow **Other Sewer** Sewer Odor Sludge Odor	
Contact Order 1:	***Contact Order 2:***	
1) Bruce 2) Wade 3) Jackie 4) Rick M 5) Kim	1) Logan 2) Steve 3) Bruce 4) Jackie 5) Rick M	

Response By: Theresa Plotner

Response Date: Friday, June 12, 2020

Response Time: 6:24:00 AM

Comments: Dispatched Tyler and AJ to jet manhole. Manhole was down and flowing after jetting.

All complaints must be discussed with a manager. Failure to follow procedure could result in disciplinary action.

URBANA & CHAMPAIGN SANITARY DISTRICT
1100 E UNIVERSITY AVENUE • URBANA, IL 61803-0669
Telephone (217) 367-3409

Route to:
On-Call Manager_____
or
Admin Staff_____
Logan Miller_____

Today's Date 6/12/20	**Sewer Call Complaint Log**	Time 6:24 am (pm)

Name Sharon Sholer / Brandon (plumber)

Address 2512 Stanford City Champaign

Home Phone 217-898-8604 Cell Phone 217-590-5209 - Brandon-plumber

- ☐ Odors
- ☐ Flies
- ☐ Plant
- ☒ Manhole Overflow
- ☐ Sludge
- ☐ Sewer
- ☐ House Backup
- ☐ Other

Complaint taken by Answering Service / Thresa Plotner Routed to Dispatched Tyler Wright + A.J.

RESPONSE

By:_____ Date ____/____/____ Time _____ am pm

Follow up action required? _____ YES _____ NO

URBANA & CHAMPAIGN SANITARY DISTRICT
1100 E UNIVERSITY AVENUE • PO BOX 669 • URBANA, IL 61803-0669
Telephone # (217) 367-3409

REV. 1/07

Route to:
On Call Manager TP
Receptionist _____

COMPLAINT LOG

DATE 6 / 12 / 2020 TIME 6:45 AM (PM) LOG _____

NAME Sharon Scholen

ADDRESS 2512 Stanford CITY Champaign

HOME PHONE 217-898-8604 WORK PHONE _____

COMPLAINT: ___ ODORS ___ PLANT ___ SLUDGE ___ SEWER

___ FLIES X HOUSE BACKUP ___ MANHOLE OVERFLOW

___ OTHER _____

COMPLAINT TAKEN BY: _____ ROUTED TO: _____

RESPONSE

BY: Tyler Wright TIME 7:45 AM (PM) DATE 6 / 12 / 2020

Manhole in back yard was holding. Jetted line & relieved problem

FOLLOW-UP ACTION REQUIRED? ___ YES X NO _____

COMMENTS

SUBDIVISION Windsor Park PLANT _____

DATE 6 / 12 / 2020 BY: TW

Urbana Champaign Sanitary District

CM Work Order

WO# : 220025

Description: Sewer call @ 2512 Stanford Champaign

Status: Open
Supervisor: LM
Skill:
Reference:
Project:
Assigned To:
Priority:

Site Comments:

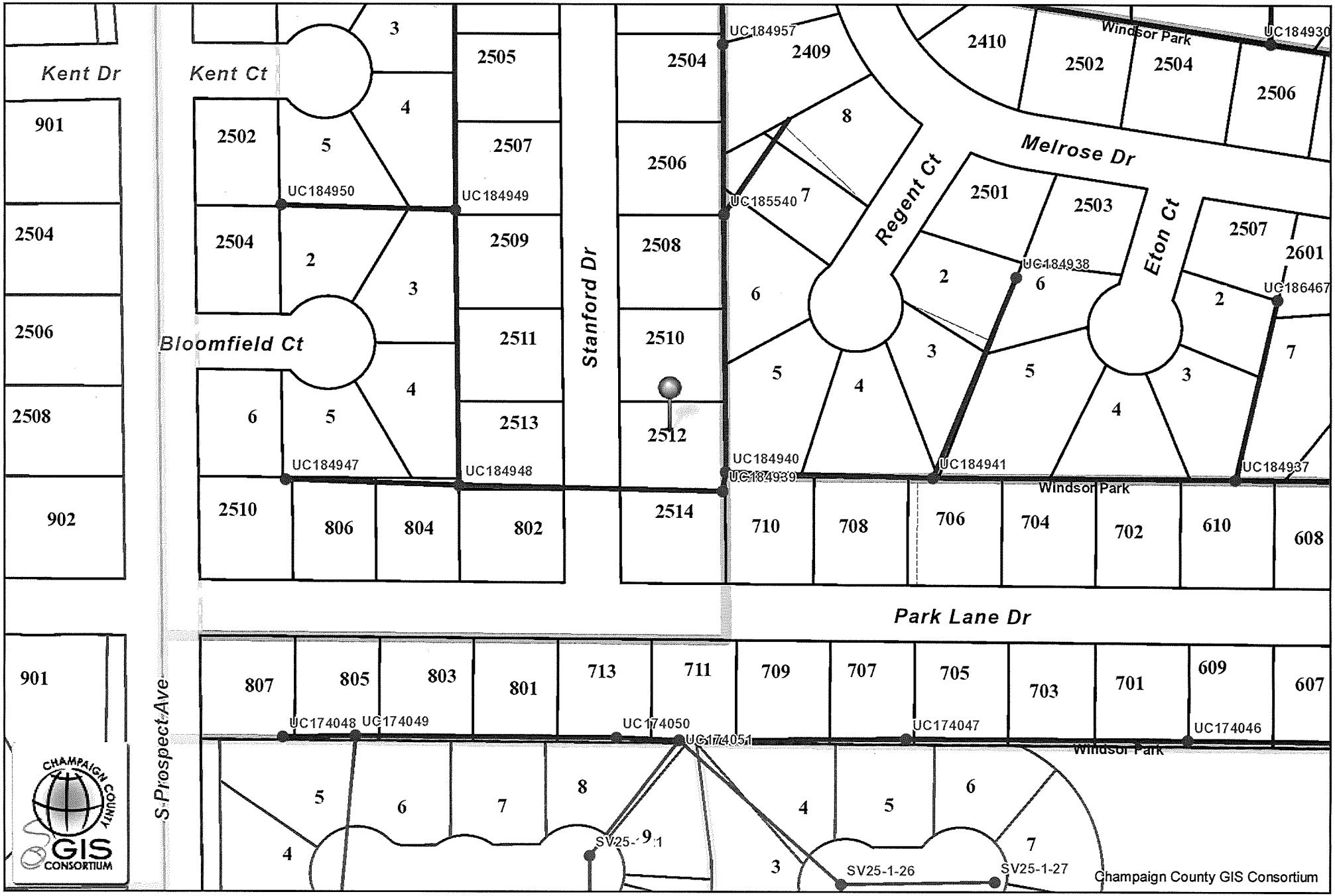
Date Scheduled: 06/15/2020 8:33:16 AM
Requested By: twright
Requestor Phone #:
Assigned By:
Building : OFF PLANT
Room: Z20
Floor: GROUND
Date Completed:

Asset: LFT00020	SEWER CALLS	
Location: OFST	OFF PLANT SITE	
Procedure:		

Date Completed: 6-12-2020 | Current Meter: | Supervisor: L

Filter:
pkey = 347374

2512 Stanford, Champaign



90 Feet

This map was prepared with geographic information system (GIS) data created by the Champaign County GIS Consortium (CCGISC), or other CCGISC member agency. These entities do not warrant or guarantee the accuracy or suitability of GIS data for any purpose. The GIS data within this map is intended to be used as a general index to spatial information and not intended for detailed, site-specific analysis or resolution of legal matters. Users assume all risk arising from the use or misuse of this map and information contained herein. The use of this map constitutes acknowledgement of this disclaimer.

NORTH

APPENDIX F - PUBLIC NOTIFICATION BROCHURE

What to do…

The District will determine whether your slow drainage or back-up is being caused by a condition in the District-owned sewer pipe. If the blockage is located in your lateral sewer line, then you will need to contact a plumber or sewer cleaning contractor to remove the blockage.

- Your plumber or sewer cleaning contractor may need to run a camera through your lateral to identify the location and nature of the blockage.
- Ask for a digital copy of what the camera is recording. If your plumber or contractor cannot provide that, then be present while the camera is run through your sewer.
- District Staff will be happy to review the video recording with you to verify any recommendations made by your plumber or contractor.

Remember…

ALWAYS get two or more estimates of repair or replacement work needed to be done from other plumbers or contractors. You are **NOT** obligated to hire the plumber or sewer cleaning contractor that cleaned or televised your sewer lateral to do any repair or replacement work. The cost of work can vary significantly between contractors.

Ask questions

- Understand what they are doing and why.
- If it's still not clear, call UCSD at 217-367-3409 extension 1226.

Know your options

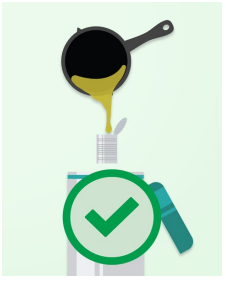
- Consider pipe bursting and cured-in-place pipe lining as possible cost effective alternatives to open trench cutting, depending on your situation.

Be aware of the scope of work needed to be done and make sure that any contract you sign adequately describes all the work to be done.

Grease Clogs

Disposing of Grease at Home

Grease that is poured down your kitchen sink can cling to the inside of your household plumbing and the public sewer system. Over time, the grease can build up so much that it clogs pipes completely. When wastewater can't move freely through the sewer system due to a blockage, it can cause flooding and even a sewer backup into your home! By disposing of household grease properly, you can help avoid expensive repairs and unnecessary disruptions to the sewer system.



The easiest thing you can do is keep grease out of the sewer system in the first place.

- Never pour grease down the sink or into the toilet
- Be careful about putting food scraps down the garbage disposal. These units only shred solid material into smaller pieces and do not prevent grease from going down the drain.
- Use a strainer in the sink to catch food scraps and other solids.
- Allow your hot oils, sauces, and gravies to cool before scraping into a plastic bag, pouring into a foil lined bag, or emptying into empty metal food can before disposing of it in your trash can.

What To Do If You Have a Sewer Back-up

Urbana & Champaign Sanitary District

Plumbing Fixtures Not Draining?

Is water coming back up through your drains? Contact us!

Monday – Friday
8:00 a.m. – 4:00 p.m. 217-367-3409 option 1

After Regular Work Hours (24-Hour Answering Service) 217-531-3174

You can call us if you have any questions at any point in the process before, during, or even after the sewer lateral repair or clean-up is finished.

Clean Up Safely!

Use gloves and boots when cleaning contaminated surfaces and be wary of porous materials such as dry-wall and carpet. Consider consulting a professional water damage service.

Think Safety First!

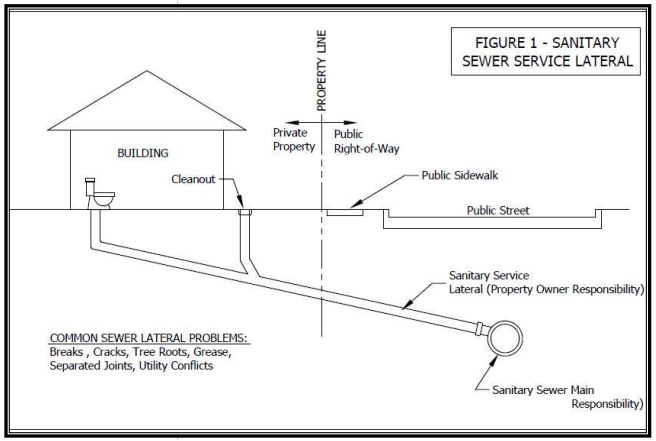
At the first sign of a sewer back-up, **stop using plumbing fixtures** and appliances that drain to the sewer.

If water is collecting in any part of the home, including the basement, **safely turn off electricity** before entering affected areas. However, if turning off the electricity requires you to walk through water-covered areas, do not attempt to turn the electricity off. Contact a plumber.

If you enter flooded areas, do so with **extreme caution.**

Avoid direct contact with sewage and contaminated items.

Be careful not to track contaminants to other areas of your home.



What's The Problem?

Sewer back-ups can be caused by…

- collapsed pipes
- tree roots
- grease
- paper products
- other debris
- stormwater infiltration

Any one of these conditions can result in blocked, slowly-draining pipes. If you have reoccurring problems with tree roots or grease, you may want to consider a long term maintenance plan that utilizes a sewer cleaning contractor.

Basement flooding?
Our overhead sewer program provides funding to reduce some back-ups from the District - owned sewer pipes.

For additional information on the overhead sewer program, please email Engineering@u-csd.com or call 217-367-3409 extension 1226.

APPENDIX G – OVERHEAD SEWER PROGRAM PACKET

APPLICATION PACKET

Overhead Sewer Program

Urbana & Champaign Sanitary District

This packet includes the following items:

1. **PROGRAM DESCRIPTION**
2. **ELIGIBILITY REQUIREMENTS**
3. **INSTALLATION PROCESS**
4. **APPLICATION FOR REIMBURSEMENT**

APPENDIX G – OVERHEAD SEWER PROGRAM PACKET

PROGRAM DESCRIPTION

INTRODUCTION

No one who has experienced a sanitary sewer backup will soon forget it. In addition to the physical damage caused by sanitary sewer backups, there is a constant fear that a backup will happen again. The City of Champaign, the City of Urbana and the Urbana & Champaign Sanitary District want to help property owners of residential property as defined below, who have had chronic sanitary sewer backup occurrences. Assistance is available by participating in cost-sharing programs administered by Champaign, Urbana and the District, and property owners willing to install overhead sewer lines, which would *essentially eliminate* (or substantially reduce) sanitary sewer backups. Property owners of property within the city limits of either Urbana or Champaign should contact their respective Public Works Department for information on that City's program. If you own property outside the city limits, the District's program may be available to help you.

PROGRAM DESCRIPTION

Both Cities and the District have on-going programs to repair and replace aging and deteriorating sanitary sewer lines. Although these three agencies combined spend approximately $3,000,000 each year to perform work on sanitary sewers, some sanitary sewer backups still occur. The Cities and the District have developed a program to help those property owners, who still have regular sewer backups, pay for the installation of a sewage ejector system with overhead plumbing to eliminate backup problems.

To participate in the District's program, the property must be located outside of the city limits of Champaign, Urbana, or Savoy, but within the limits of the District. The property owner must complete an

application and submit plans (usually prepared by the plumbing contractor) for the installation of the system to the District for review. After the installation has been approved by the District, the property owners may either install the system themselves or pay a licensed plumber and electrical contractor to install the system. District approval of the application does not create a binding obligation on the district to reimburse the property owner. Reimbursement, if any, shall be made upon final approval of the installation.

After the installation is complete, the District will arrange for a final inspection of the plumbing and sewer work. Once the installation has been approved by the District, the property owner may submit a copy of the paid receipt to the District for consideration of partial reimbursement (up to 75% of the cost of the project, not to exceed $5,250). Approval of the installation is in the sole discretion of the District and the District shall not be required to make any reimbursement unless such approval is obtained. Under no circumstance shall the approval of the installation by the District be considered as any form or representation or warranty by the District regarding the installation.

DISCLAIMER

The purpose of this program is to reduce substantially the occurrence of sanitary sewer backups. An unexpected sewer collapse or obstruction, power failure, extreme weather conditions or other factors could still cause a backup even with an overhead sewer. Therefore, the Urbana & Champaign Sanitary District does not guarantee or represent in any manner that a sanitary sewer backup will never occur.

LIABILITY

The Urbana & Champaign Sanitary District assumes no responsibility for any defective work or other damage, injury or loss resulting from any act of by the Contractor, subcontractors, property owner, or their agents while installing the sewage ejector system with overhead plumbing.

APPENDIX G – OVERHEAD SEWER PROGRAM PACKET

ELIGIBILITY REQUIREMENTS

To participate in the Overhead Sewer Program, the applicant must:

1. Own the property for which the application is completed.
2. The building must be residential building containing fewer than 5 residential units per single owner
3. Submit proof that a sanitary sewer backup is a viable concern. The District will, in the District's sole discretion, determine your eligibility based upon the elevation of the building sewers, the elevation of the District's collector sewer, and other factors. Submit bids from three plumbing contractors (licensed in the State of Illinois).
4. Return the application form to the Urbana & Champaign Sanitary District, attention: Director of Engineering Services.

If you have any questions about overhead sewers or about obtaining quotes from licensed contractors and analyzing their proposals, please contact the Director of Engineering Services at 217-367-3409. We would be happy to try to answer any questions you may have.

APPENDIX G – OVERHEAD SEWER PROGRAM PACKET

INSTALLATION PROCESS

Before authorizing the installation of the overhead sewer, the applicant should:

1. Obtain a copy of the Overhead Sewer Program Application Packet from the Urbana & Champaign Sanitary District, P.O. Box 669, Urbana, Illinois 61803-0669. Our telephone number is 217-367-3409.
2. Review the information to make sure the applicant meets the requirements of the program.
3. Complete the application form and submit it to the Director of Engineering Services at the Urbana & Champaign Sanitary District.
4. If the Director of Engineering Services approves the application, secure three bids from plumbing contractors. (This step is not necessary if the applicant is performing the work.)
5. Meet with the Director of Engineering Services to review the bids and determine the amount of reimbursement an applicant may seek regarding the project. (The applicant may choose any qualified contractors, but the District will reimburse the applicant based upon the District's review of the bids).

After selecting the contractor, the applicant may:

1. Install the overhead sewer device.
2. Contact the Director of Engineering Services to schedule an inspection of the installation.
3. Pay the contractor for the work completed and obtain lien waivers. Keep all receipts!

Once the installation has been completed, inspected and if approved by the District, reimbursement for the overhead sewer will occur when the applicant:

1. Submits a copy of the bills, lien waivers and paid receipts to the Director of Engineering Services.

The applicant will receive reimbursement for 75% of the cost of the project, up to a maximum of $5,250.

APPENDIX G – OVERHEAD SEWER PROGRAM PACKET

OVERHEAD SEWER PROGRAM

APPLICATION FOR REIMBURSEMENT

Please print or type the following information:

Date: _____

I/We, _____, am/are the property
(Name of property owner)

ownerof the building located at _____
(Address of property)

_____, Illinois_____.
(City) (Zip Code)

Please check all of the following that apply:

☐ I/We have received written approval from the District's Director of Engineering Services that our project would be eligible for cost reimbursement

☐ I/We submitted bids from three plumbing contractors, which were approved by the Director of Engineering Services.

☐ I/We completed $_____ of the work by myself/ourselves and understand I/we will be reimbursed on the basis of the cost of materials and equipment rental for this portion of the project. The Director of Engineering Services approved an itemized estimate of the cost before beginning the project. Receipts are attached.

I/We understand that as part of this program, the Urbana & Champaign Sanitary District assumes no liability for any defective work or other damage, injury, or loss resulting from any act or omission of the Contractor in the performance of this work.

I/We also understand that the installation of an overhead sewer is not a guarantee against future sanitary sewer backups.

_____ _____
Signature of Property Owner Signature of Property Owner

APPENDIX G – OVERHEAD SEWER PROGRAM PACKET

Please mail the application and documentation to:

Urbana & Champaign Sanitary District
P.O. Box 669
Urbana, Illinois 61803-0669
Attn: Mark Radi, Director of Engineering Services

For Office Use Only

☐ Owner discussed plans with the Director of Engineering Services before work began.

☐ The completed work was inspected and approved. By _____

☐ The completed work was approved by the Director of Engineering Services.

☐ Payment for the completed project has been made. (Receipts and lien waivers are included.)

About the CMOM Program Self Assessment Checklist

Introduction

A sanitary sewer collection system is a vital element of any community's infrastructure and a critical component of the wastewater treatment process. The nation's sanitary sewer infrastructure has been built over the last 100 years or more using a variety of materials, design standards, installation techniques, and maintenance practices. As this valuable infrastructure ages, the importance of preventive and predictive maintenance increases.

What is CMOM?

CMOM stands for "capacity, management, operations, and maintenance." It is a flexible, dynamic framework for municipalities to identify and incorporate widely-accepted wastewater industry practices to:

- Better manage, operate, and maintain collection systems
- Investigate capacity constrained areas of the collection system
- Respond to sanitary sewer overflow (SSO) events

The CMOM approach helps municipal wastewater utility operators provide a high level of service to customers and reduce regulatory noncompliance. CMOM can help utilities optimize use of human and material resources by shifting maintenance activities from "reactive" to "predictive"–often leading to cost savings through avoided overtime, emergency construction costs, increased insurance premiums, and the possibility of lawsuits. CMOM information and documentation can also help improve communications with the public, other municipal works and regional planning organizations, and regulators.

In CMOM planning, the utility selects performance goal targets, and designs CMOM activities to meet the goals. The CMOM planning framework covers operation and maintenance (O&M) planning, capacity assessment and assurance, capital improvement planning, and financial management planning. Information collection and management practices are used to track how well each CMOM activity is meeting the performance goals, and whether overall system efficiency is improving. On an ongoing basis, activities are reviewed and adjusted to better meet the performance goals. As the CMOM program progresses, performance goals can change. For instance, an initial goal may be to develop a geographic information system (GIS) of the system. Once the GIS is complete, a new goal might be to use the GIS to track emergency calls and use the information to improve maintenance planning.

An important component of a successful CMOM program is to periodically collect information on current systems and activities and develop a "snapshot-in-time" analysis. From this analysis, the utility establishes its performance goals and plans its CMOM program activities.

Additional information describing CMOM can be found at: www.epa.gov/npdes/sso or www.epa.gov/region4/water/wpeb/pdfs/self-audit_review2-3.pdf.

About this Checklist (Continued)

What is the purpose of the CMOM program checklist?

This document is a screening-level tool that can help utilities evaluate CMOM programs and identify general areas of strength and weakness. Completing this CMOM assessment will allow the utility to flag CMOM program areas that need improvement and establish priorities for additional, more detailed assessments. In addition, the checklist will allow the utility to compare annual performance (e.g., percent of employees meeting training standards).

This document is not intended to be all-inclusive. It addresses the types of practices EPA believes should be considered by most utilities when implementing a CMOM program. However, the ways in which utilities use the information gathered through the checklist will depend on the complexity and site-specific issues facing individual collection systems. When reviewing the questions, utilities should use their judgment to determine if the question is reasonable for their collection system size and design.

How do I use this checklist?

The questions on the checklist will request answers in three different formats:

- Check yes, no, or not applicable (NA),
- Fill in the blank, and
- Check all that apply.

At the end of each section, additional space is provided to allow for comments on or explanations of the answers recorded (information that will be useful to the utility in follow-on planning). Each utility should make an effort to answer all the questions that are applicable to its system. If a particular question takes a significant amount of time to answer, this could be an indication of an area of weakness. Utilities should plan to invest approximately one day to complete the checklist.

This document is designed to help utilities perform an initial evaluation of CMOM activities. **It is not intended to serve as an absolute indicator of a successful CMOM program, nor will all of the questions apply to every utility.** By working through these questions, utilities will be able to identify strengths and areas for improvements in their CMOM programs. If a utility has a significant number of “no” answers or very few items selected in the checklist, this could indicate an area of weakness. The utility manager then can make a more detailed evaluation, including identifying specific actions needed to address areas for improvement.

General Information

CHECKLIST COMPLETED BY:

Bradley Bennett, P.E. — Name

Date 3-25-2022

217-367-3409 ext 1226 — Daytime Telephone Number

UTILITY CONTACT INFORMATION

Utility Name Urbana and Champaign Sanitary District

LOCATION

1100 East University Avenue — Street Address

Street Address (continued)

Urbana IL 61802 — City State Zip

STAFF Bradley Bennett, P.E. — Name

Director of Engineering Services — Title

bbennett@u-csd.com — Email

Phone (217) 367 -3409 Fax (217) 367 -2117

PERMITTED TREATMENT & COLLECTION FACILIITES

NPDES or STATE PERMIT #	PERMITTEE/CO-PERMITTEE/JURISDICTIONS	PERMIT COVERAGE: WWTP Effluent	Collection System	Wet-Weather Facility
IL0031500	Northeast Treatment Plant	■	■	■
IL0031526	Southwest Treatment Plant	■	■	■
		☐	☐	☐
		☐	☐	☐
		☐	☐	☐

Collection System Description

SYSTEM INVENTORY

2 NUMBER # of Treatment facilities

Treatment Facilities

WWTP design capacity	25.3 MGD
Average daily flow	18.4 MGD
Average dry weather fow	15.2 MGD

Access & Maintenance

Manholes	2,779 NUMBER
Number of air vacuum relief valves	23 NUMBER

Conveyance & Pumping

	Gravity Sewers	Force Mains	Pump Stations
Pipes and pumps Length/quantity	131 MILES	18 MILES	28 NUMBER
Age of system 0 - 25 years old	15% PERCENT	32 % PERCENT	32 % NUMBER
26 - 50 years old	30 % PERCENT	21 % PERCENT	21 % NUMBER
51 - 75 years old	49 % PERCENT	46 % PERCENT	46 % NUMBER
>76 years old	4 % PERCENT	0 % PERCENT	0 % NUMBER

Number of inverted siphons 3

SERVICE AREA CHARACTERISTICS

Service area	28,096 ACRES
Service population	147,000 PEOPLE
Annual precipitation	42.7 INCHES

Number of Service Connections

Residential		Commercial		Industrial		TOTAL
NUMBER	+	NUMBER	+	NUMBER	=	NUMBER

Collection system service lateral responsibility *(check one)*

- ■ At main line connection only
- ☐ From main line to property line or easement/cleanout
- ☐ Beyond property line/clean out
- ☐ Other: _____

Combined Sewer Systems

What percent of sewer system is served by combined sewers (i.e., sanitary sewage and storm water in the same pipe)? 0 % PERCENT

Collection System Description

	Gravity Sewers	Force Mains
PIPE DIAMETER		
8 inches or less	29 % PERCENT	21 % PERCENT
9 - 18 inches	38 % PERCENT	62 % PERCENT
19 - 36 inches	29 % PERCENT	18 % PERCENT
>36 inches	4 % PERCENT	0 % PERCENT
PIPE MATERIALS		
Prestressed concrete cylinder pipe (PCCP)	% PERCENT	% PERCENT
High density polyethylene (HDPE)	% PERCENT	% PERCENT
Reinforced concrete pipe (RCP)	38 % PERCENT	% PERCENT
Polyvinyl chloride (PVC)	11 % PERCENT	N/A PERCENT
Vitrified clay pipe (VCP)	50 % PERCENT	N/A PERCENT
Ductile iron	1 % PERCENT	% PERCENT
Non-reinforced concrete pipe	% PERCENT	% PERCENT
Asbestos cement pipe	% PERCENT	% PERCENT
Cast iron	% PERCENT	% PERCENT
Brick	% PERCENT	% PERCENT
Fiberglass	% PERCENT	% PERCENT
Other (*Explain*) Cured in Place Lined	19.4 % PERCENT	0 % PERCENT

Engineering Design (ED)

ED-01	Is there a document which includes design criteria and standard construction details?	■	NO
ED-02	Is there a document that describes the procedures that the utility follows in construction design review?	■	NO
ED-03	Are WWTP and O&M staff involved in the design review process?	■	NO
ED-04	Is there a procedure for testing and inspecting new or rehabilitated system elements both during and after the construction is completed?	■	NO
ED-05	Are construction sites supervised by qualified personnel (such as professional engineers or certified engineering technicians) to ascertain that the construction is taking place in accordance with the agreed upon plans and specifications?	■	NO
ED-06	Are new manholes tested for inflow and infiltration?	■	NO
ED-07	Are new gravity sewers checked using closed circuit TV inspection?	■	NO
ED-08	Does the utility have documentation on private service lateral design and inspection standards?	■	NO
ED-09	Does the utility attempt to standardize equipment and sewer system components?	■	NO

Satellite Communities and Sewer Use Ordinance (SUO)

SUO-01	Does the utility receive flow from satellite communities? IF NO, GO TO PAGE 6	■	NO
SUO-02	What is the total area from satellite communities that contribute flow to the collection system? *(Acres or square miles)*	28,096 Acres	
SUO-03	Does the utility require satellite communities to enter into an agreement? IF NO, GO TO QUESTION SUO-06.	■	NO
SUO-04	Does the agreement include the requirements listed in the sewer use ordinance (SUO)?	■	NO
SUO-05	Do the agreements have a date of termination and allow for renewal under different terms?	■	NO
SUO-06	Does the utility maintain the legal authority to control the maximum flow introduced into the collection system from satellite communities?	YES	■
SUO-07	Are standards, inspections, and approval for new connections clearly documented in a SUO?	■	NO
SUO-08	Does the SUO require satellite communities to adopt the same industrial and commercial regulator discharge limits as the utility?	■	NO
SUO-09	Does the SUO require satellite communities to adopt the same inspection and sampling schedules as required by the pretreatment ordinance?	■	NO
SUO-10	Does the SUO require that satellite communities or the utility to issue control permits for significant industrial users?	■	NO
SUO-11	Does the SUO contain provisions for addressing overstrength wastewater from satellite communities?	■	NO

SUO-12 Does the SUO contain procedures for the following? *(Check all that apply)*

■ Inspection standards ■ Pretreatment requirements ■ Building/sewer permit issues

SUO-13 Does the SUO contain general prohibitions of the following materials? *(Check all that apply)*

■ Fire and explosions hazards ■ Corrosive materials ■ Obstructive materials

■ Oils or petroleum ■ Material which may cause interference at the wastewater treatment plant

SUO-14 Does the SUO contain procedures and enforcement actions for the following? *(Check all that apply)*

■ Fats, oils, and grease (FOG)

☐ Infiltration and inflow

☐ Building structures over the sewer lines

■ Storm water connections to sanitary lines (downspouts)

■ Defects in service laterals located on private property

■ Sump pumps, air conditioner connections

Organizational Structure (OC)

OC-01	Is an organizational chart available that shows the overall personnel structure for the utility, including operation and maintenance staff?	■	NO
OC- 02	Are up-to-date job descriptions available that delineate responsibilities and authority for each position?	■	NO

OC-03 Are the following items discussed in the job descriptions? *(Check all that apply)*

- ■ Nature of work to be performed
- ■ Examples of the types of work
- ■ Minimum requirements for the position
- ■ List of licenses required for the position
- ■ Necessary special qualifications or certifications
- ■ Performance measures or promotion potential

OC-04	What percent of staff positions are currently vacant?	0 %
OC-05	On average how long do positions remain vacant? *(months)*	1-3 months
OC-06	What percent of utility work is contracted out?	25 %

Internal Communications (IC)

IC-01 Which of the following methods are used to communicate with utility staff? *(Check all that apply)*

■ Regular meetings ■ Bulletin boards ■ E-mail ■ Other (walkie talkie/pager)

IC-02 How often are staff meetings held? *(e.g., Daily, Weekly, Monthly, etc.)* Weekly

IC-03 Are incentives offered to employees for performance improvements? YES ■

IC-04 Does the utility have an "Employee of the Month/Quarter/Year" program? YES ■

IC-05 How often are performance reviews conducted? *(e.g. Semi-annually, Annually, etc.)* Annually

IC-06 Does the utility regularly communicate/coordinate with other municipal departments? ■ NO

Budgeting (BUD)

BUD-01	What is the average annual fee for residential users?	$ 275.52
BUD-02	How often are user charges evaluated and adjusted? *(e.g. annually, biannually, etc.)*	Annually
BUD-03	Are utility-generated funds used for non-utility programs?	YES ■
BUD-04	Are costs for collection system operation and maintenance (O&M) separated from other utility services such as water, storm water, and treatment plants? IF NO, GO TO QUESTION BUD-07.	■ NO
BUD-05	What is your average annual (O&M) budget?	$ $7,370,487.50
BUD-06	What percentage of the utility's overall budget is allocated to maintenance of the collection system?	33 %
BUD-07	Does the utility have a Capital Improvement Plan (CIP) that provides for system repairs/replacements on a prioritized basis?	■ NO
BUD-08	What is your average annual CIP budget?	$ 1,000,000 to $2,000,000

BUD-09 What percentage of the maintenance budget is allotted to the following maintenance?

Predictive maintenance (tracking design, life span, and scheduled parts replacements)	NA %
Preventive maintenance (identifying and fixing system weaknesses which, if left unaddressed, could lead to overflows)	NA %
Corrective maintenance (fixing system components that are functioning but not at 100% capacity/efficiency; for example partially blocked lines)	NA %
Emergency maintenance (reactive maintenance, overflows, equipment breakdowns)	NA %

NA = Data Not Available

BUD-10	Does the utility have a budgeted program for the replacement of under-capacity pipes?	YES ■
BUD-11	Does the utility have a budgeted program for the replacement of over-capacity pipes?	YES ■

Training (TR)

TR-01 Does the utility have a formal job knowledge, skills, and abilities (KSA) training program? ■ NO

TR-02 Does the training program address the fundamental mission, goals, and policies of the utility? ■ NO

TR-03 Does the utility have mandatory training requirements identified for key employees? ■ NO

TR-04 What percentage of employees met or exceeded their annual training goals during the past year? 100 %

TR-05 Does the utility provide training in the following areas? *(Check all that apply)*

- ■ Safety
- ■ Traffic control
- ■ Public relations
- ■ Routine line maintenance
- ■ Record keeping
- ■ SSO/Emergency response
- ■ Confined space entry
- ■ Electrical and instrumentation
- ■ Pump station operations and maintenance
- ☐ Other
- ☐ Pipe repair
- ■ CCTV and trench/shoring
- ☐ Bursting CIPP

TR-06 Are operator and maintenance certification programs used? IF NO, GO TO QUESTION TR-08 ■ NO

TR-07 Are operator and maintenance certification programs required? ■ NO

TR-08 Is on-the-job training progress and performance measured? ■ NO

TR-09 Which of the following methods are used to assess the effectiveness of the training? *(Check all that apply)*

☐ None ■ Periodic testing ☐ Drills ☐ Demonstrations

TR-10 What percentage of the training offered by the utility is in the form of the following?

Manufacturer training	10 %	In-house classroom training	60 %
On-the-job training	20 %	Industry-wide training	10 %

Safety (SAF)

SAF-01 Does the utility have a written safety policy? ■ NO

SAF-02 How often are safety procedures reviewed and revised? *(e.g. Semiannually, Annually, etc.)* ■ NO

SAF-03 Does the utility have a safety committee? ■ NO

SAF-04 Are regular safety meetings held with the utility employees? ■ NO

SAF-05 Does the utility have a safety training program? ■ NO

SAF-06 Are records of employee safety training kept up to date? ■ NO

SAF-07 Does the utility have written procedures for the following? *(Check all that apply)*

- ■ Lockout/tagout
- ■ Material safety date sheets (MSDS)
- ■ Chemical handling
- ■ Confined spaces permit program
- ■ Trenching and excavations safety
- ■ Biological hazards in wastewater
- ■ Traffic control and work site safety
- ■ Electrical and mechanical systems
- ■ Pneumatic and hydraulic systems safety

SAF-08 What is your agency's lost-time injury rate? 0 % or _____ hours

SAF-09 Are the following equipment items available and in adequate supply? *(Check all that apply)*

- ■ Rubber/disposable gloves
- ■ Confined space ventilation equipment
- ■ Hard hats, safety glasses, rubber boots
- ■ Antibacterial soap and first aid kit
- ■ Tripods or non-entry rescue equipment
- ■ Fire extinguishers
- ■ Equipment to enter manholes
- ■ Portable crane/hoist
- ■ Atmospheric testing equipment and gas detectors
- ■ Oxygen sensors
- ■ H_2S Monitors
- ■ Full body harness
- ■ Protective clothing
- ■ Traffic/public access control equipment
- □ 5-minute escape breathing devices
- □ Life preservers for lagoons
- ■ Safety buoy at activated sludge plants
- ■ Fiberglass or wooden ladders for electrical work
- ■ Respirators and/or self contained breathing apparatus
- ■ Methane gas or optical vector (OVA) analyzer
- ■ Lower explosion limit (LEL) metering

SAF-10 Are safety monitors clearly identified? ■ NO

Customer Service (CS)

CS-01 Does the utility have a customer service and public relations program? IF NO GO TO QUESTION CS-03 ■ NO

CS-02 Does the customer service program include giving formal presentations on the wastewater field to the following? *(Check all that apply)*

- ☐ Schools and universities
- ☐ Local officials
- ☐ Media
- ☐ Building Inspector(s)
- ☐ Community gatherings
- ☐ Businesses
- ☐ Citizens
- ☐ Public utility officials

CS-03 Are employees of the utility specifically trained in customer service? ■ NO

CS-04 Are there sample correspondence, Q/A's, or "scripts" to help guide staff through written or oral responses to customers? YES ■

CS-05 What methods are used to notify the public of major construction or maintenance work? *(Check all that apply)*

- ■ Door hangers
- ■ Newspaper
- ☐ Fliers
- ☐ Signs
- ■ Other
- ☐ None
- ■ Public radio or T.V. announcements

CS-06 Is a homeowner notified prior to construction that his/her property may be affected? ■ NO

CS-07 Do you provide information to residents on cleanup and safety procedures following basement backups and overflows from manholes when they occur? ■ NO

CS-08 Does the utility have a customer service evaluation program to obtain feedback from the community? YES ■

CS-09 Do customer service records include the following information? *(Check all that apply)*

- ■ Personnel who received the complaint or request
- ■ Name, address, and telephone number of 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
- ■ Feedback to customer
- ☐ Total days to end the problem

CS-10 Does the utility have a goal for how quickly customer complaints (or ermergency calls) are resolved? IF NO, GO TO THE NEXT PAGE. YES ■

CS-11 What percentage of customer complaints (or emergency calls) are resolved within the timeline goals? _____ %

Equipment and Collection System Maintenance (ESM)

ESM-01 Is a maintenance card or record kept for each piece of mechanical equipment within the collection system? IF NO, GO TO QUESTION ESM-03. ■ NO

ESM-02 Do equipment maintenance records include the following information? *(Check all that apply)*

- ■ Maintenance recommendations
- ■ Maintenance schedule
- ■ Instructions on conducting the specific maintenance activity
- ■ A record of maintenance on the equipment to date
- ■ Other observations on the equipment

ESM-03 Are dated tags used to show out-of-service equipment? ■ NO

ESM-04 Is there an established system for prioritizing equipment maintenance needs? ■ NO

ESM-05 What percent of repair funds are spent on emergency repairs? 15 %

ESM-06 Are corrective repair work orders backlogged more than six months? YES ■

ESM-07 Do collection system personnel coordinate with state, county, and local personnel on repairs, before the street is paved? ■ NO

Equipment Parts Inventory (EPI)

EPI-01	Have critical spare parts been identified?	■	NO
EPI-02	Are adequate supplies on hand to allow for two point repairs in any part of the system?	■	NO
EPI-03	Is there a parts standardization policy in place?	■	NO
EPI-04	Does the utility have a central location for storing spare parts?	■	NO
EPI-05	Does the utility maintain a stock of spare parts on its maintenance vehicles?	YES	■
EPI-06	Does the utility have a system in place to track and maintain an accurate inventory of spare parts?	■	NO
EPI-07	For those parts which are not kept in inventory, does the utility have a readily available source or supplier?	■	NO

Management Information System (MIS)

MIS-01 Does the utility have a management information system (MIS) in place for tracking maintenance activities? *(Either electronic or good paper files)* IF NO, GO TO PAGE 15. ■ YES ☐ NO

MIS-02 Are the MIS records maintained for a period of at least three years? ■ YES ☐ NO

MIS-03 Is the MIS able to distinguish activities taken in response to an overflow event? ☐ YES ■ NO

MIS-04 Are there written instructions for managing and tracking the following information? *(Check all that apply)*

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

MIS-05 Do the written instructions for tracking procedures include the following information? *(Check all that apply)*

- ■ Accessing data and information
- ■ Instructions for using the tracking system
- ■ Updating the MIS
- ■ Developing and printing reports

MIS-06 How often is the management information system updated? *(Check one)*

- ■ Immediately
- ☐ Monthly
- ☐ Within one week of the "incident"
- ☐ As time permits

System Mapping (MAP)

MAP-01 Are "as built" plans (record drawings) or maps available for use by field crews in the office and in the field? ■ NO

MAP-02 Is there a procedure for field crews to record changes or inaccuracies in the maps and update the mapping system? ■ NO

MAP-03 Do the maps show the date the map was drafted and the date of the last revision? ■ NO

MAP-04 Do the sewer line maps include the following? *(Check all that apply)*

- ■ Scale
- ■ North arrow
- ■ Date the map was drafted
- ■ Date of last revision
- ■ Service area boundaries
- ■ Property lines
- ■ Other landmarks (Roads, water bodies, etc.)
- ■ Manhole and other access points
- ☐ Location of building laterals
- ■ Street names
- ☐ SSOs occurrences/CSOs outfalls
- ☐ 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 coordinates
- ■ Manhole invert elevation
- ■ Distance between manholes

MAP-05 Are the following sewer attributes recorded? *(Check all that apply)*

- ■ Size
- ■ Shape
- ■ Invert elevation
- ■ Material
- ☐ Separate/combined sewer
- ■ Installation Date

MAP-06 Are the following manhole attributes recorded? *(Check all that apply)*

- ■ Shape
- ■ Type (e.g., precast, cast in place, etc.)
- ■ Depth
- ■ Age
- ■ Material

MAP-07 Is there a systematic numbering and identification method/system established to identify sewer system manhole, sewer lines, and other items (pump stations, etc.)? ■ NO

Internal TV Inspection (TVI)

TVI-01 Does the utility have a standardized pipeline condition assessment program? ■ NO

TVI-02 Is internal TV inspection used to perform condition assessment? IF NO, GO TO PAGE 17. ■ NO

TVI-03 Are there written operation procedures and guidelines for the internal TV inspection program? ■ NO

TVI-04 Do the internal TV record logs include the following? *(Check all that apply)*

- ■ Pipe size, type, length, and joint spacing
- ■ Distance recorded by internal TV
- ■ Results of the internal TV inspection (including a structural rating)
- ■ Internal TV operator name
- ■ Cleanliness of the line
- ■ Location and identification of line being televised by manholes

TVI-05 Is a rating system used to determine the severity of the defects found during the inspection process? ■ NO

TVI-06 Is there documentation explaining the codes used for internal TV results reporting? ■ NO

TVI-07 Approximately what percent of the total defects determined by TV inspection during the past 5 years were the following? No data available

Failed coatings or linings	%	Line deflection	%
House connection leaks	%	Joint separation	%
Illegal connections	%	Crushed pipes	%
Pipe corrosion (H_2S)	%	Collapsed pipes	%
Fats, oil, and grease	%	Offset joints	%
Broken pipes	%	Root intrusions	%
Debris	%	Minor cracks	%
Other	%		

TVI-08 Are main line and lateral repairs checked by internal TV inspection after the repair(s) have been made? ■ NO

Sewer Cleaning (CLN)

CLN-01 What is the system cleaning frequency? (the entire system is cleaned every "X" years)

5 years for collectors
10 years for interceptors

CLN-02 What is the utility's plan for system cleaning (% or frequency in years)?

20% for collectors
10% for interceptors

CLN-03 What percent of the sewer lines are cleaned, even high/repeat cleaning trouble spots, during the past year?

25 for collectors
9 for interceptors %

CLN-04 Is there a program to identify sewer line segments, with chronic problems, that should be cleaned on a more frequent schedule? ■ NO

CLN-05 Does the utility have a root control program? YES ■

CLN-06 Does the utility have a fats, oils, and grease (FOG) program? YES ■

CLN-07 What is the average number of stoppages experienced per mile of sewer pipe per year?

Less than 1%

CLN-08 Has the number of stoppages increased, decreased, or stayed the same over the past 5 years?

☐ Increased ■ Decreased ☐ Stayed the same

CLN-09 Are stoppages plotted on maps and correlated with other data such as pipe size and material or location? YES ■

CLN-10 Do the sewer cleaning records include the following information? *(Check all that apply)*

- ■ Date and time
- ■ Method of cleaning
- ■ Identity of cleaning crew
- ■ Cause of stoppage
- ■ Location of stoppage or routine cleaning activity
- ■ Further actions necessary/initiated

CLN-11 If sewer cleaning is done by a contractor are videos taken of before and after cleaning? YES NO

Manhole Inspection and Assessment (MAN)

MAN-01 Does the utility have a routine manhole inspection and assessment program? IF NO, GO TO QUESTION MAN-06. ■ NO

MAN-02 Are the results and observations from the routine manhole inspections recorded? ■ NO

MAN-03 Does the utility have a goal for the number of manholes inspected annually? YES ■

MAN-04 How many manholes were inspected during the past year? _____

MAN-05 Do the records for manhole/pipe inspection include the following? *(Check all that apply)*

- ■ Conditions of the frame and cover
- ■ Evidence of surcharge
- ■ Offsets or misalignments
- ☐ Atmospheric hazards measurements (especially hydrogen sulfide)
- ■ Details on the root cause of cracks or breaks in the manhole or pipe including blockages
- ■ Recording conditions of (corbel, walls, bench, trough, and pipe seals)
- ■ Presence of corrosion
- ■ If repair is necessary
- ■ Manhole identifying number/location
- ■ Wastewater flow characteristics (flowing freely or backed up)
- ■ Accumulations of grease, debris, or grit
- ■ Presence of infiltration, location, and estimated quantity
- ■ Inflow from manhole covers

MAN-06 Does the utility have a grouting program? YES ■

Pump Stations (PS)

PS-01	Are Standard Operation Procedures (SOPs) and Standard Maintenance Procedures (SMPs) used for each pump station?	■	NO
PS-02	Are there enough trained personnel to properly maintain all pump stations?	■	NO
PS-03	Is there an emergency operating procedure for each pump station?	■	NO
PS-04	Is there an alarm system to notify personnel of pump station failures and overflow?	■	NO
PS-05	Percent of pump stations with back up power sources	100 %	
PS-06	Does the utility use the following methods when loss of power ocurs? *(Check all that apply)* ■ On-site electrical generators ■ Portable electric generators ■ Alternate power source ☐ Other ■ Vacuum trucks to bypass pump station		
PS-07	Is there a procedure for manipulating pump operations (manually or automatically) during wet weather to increase in-line storage of wet weather flows?	■	NO
PS-08	Are wet well operating levels set to limit pump start/stops?	■	NO
PS-09	Are the lead, lag, and backup pumps rotated regularly?	■	NO
PS-10	Are operation logs maintained for all pump stations?	■	NO
PS-11	Are the original manuals that contain the manufacturers recommended maintenance schedules for all pump station equipment easily available?	■	NO
PS-12	On average, how often were pump stations inspected during the past year? **Monthly**	■	NO
PS-13	Are records maintained for each inspection?	■	NO
PS-14	Average annual labor hours spent on pump station inspection	200	
PS-15	Percent of pump stations with pump capacity redundancy	100 %	
PS-16	Percent of pump stations with dry weather capacity limitations	0 %	
PS-17	Percent of pump stations with wet weather capacity limitations	0 %	
PS-18	Percent of pump stations calibrated annually	100 %	
PS-19	Percent of pump stations with permanent flow meters	6 %	

Capacity Assessment (CA)

CA-01	Does the utility have a flow monitoring program?	■	NO
CA-02	Does the utility have a comprenhensive capacity assessment and planning program?	■	NO
CA-03	Are flows measured prior to allowing new connections?	YES	■
CA-04	Do you have a tool (hydraulic model, spreadsheet, etc.) for assessing whether adequate capacity exists in the sewer system? IF NO, GO TO QUESTION CA-06.	■	NO
CA-05	Does your capacity assessment tool produce results consistent with conditions observed in the system?	YES	■

CA-06 What is the ratio of peak wet weather flow to average dry weather flow at the wastewater treatment plant? 3.42

CA-07 How many permanent flow meters are currently in the system? *(Include meters at pump stations and wastewater treatment plants)* 14

CA-08 How frequently are the flow meters checked? *(e.g. Daily, Weekly, Monthly, etc.)* Semi-Annually

CA-09 Do the flow meter checks include the following? *(Check all that apply)*

- ☐ Independent water level
- ☐ Velocity reading
- ☐ Downloading data
- ☐ Checking the desiccant
- ☐ Cleaning away debris
- ☐ Battery condition

CA-10	Are records maintained for each inspection? IF NO, GO TO QUESTION CA-12.	■	NO

CA-11 Do the flow monitoring records include the following? *(Check all that apply)*

- ☐ Descriptive location of flow meter
- ☐ Frequency of flow meter inspection
- ☐ Type of flow meter
- ☐ Frequency of flow meter calibration

CA-12	Does the utility maintain any rain gauges or have access to local rainfall data?	■	NO
CA-13	Does the utility have any wet weather capacity problems?	■	NO
CA-14	Are low points or flood-plain areas monitored during rain events?	■	NO
CA-15	Does the utility have any dry weather capacity problems?	YES	■
CA-16	Is flow monitoring used for billing purposes, capacity analysis, and/or inflow and infiltration investigations?	■	NO

Tracking SSOs (TRK)

TRK-01	How many SSO events have been reported in the past 5 years?	16

TRK-02	What percent of the SSOs were less than 1,000 gallons in the past 5 years ?	37.5 %

TRK-03 Does the utility document and report all SSOs regardless of size? ■ NO

TRK-04 Does the utility document basement backups? ■ NO

TRK-05 Are there areas that experience frequent basement or street flooding? YES ■

TRK-06 Approximately what percent of SSOs discharges were from each of the following in the last 5 years?

Manholes	44 %	Main and trunk sewers	11 %	Structural bypasses	0 %
Pump stations	44 %	Lateral and branch sewers	11 %		

TRK-07 Approximately what percent of SSOs discharges were caused by the following in the last 5 years?

Debris buildup	19 %	Root intrusion	9 %	Excessive infiltration and inflow	44 %
Collapsed pipe	19 %	Capacity limitations	%	Fats, oil, and grease	9 %
Vandalism	0 %				

TRK-07A What percentage of SSOs were released to:

Soil	19 %	Basements	%	Paved area	%
Surface water (rivers/lakes/streams)	81 %	Coastal, ocean, beaches	%		

TRK-07B For surface water releases, what percent are to areas that could affect:

Contact recreation (beaches, swimming, areas)	0 %	Drinking water sources	0 %
Shellfish growing areas	0 %		

TRK-08	How many chronic SSO locations are in the collection system?	12

TRK-09 Are pipes with chronic SSOs being monitored for sufficient capacity and/or structural condition? ■ NO

TRK-10 Prior to collapse, are structurally deteriorating pipelines being monitored for renewal or replacement? ■ NO

Overflow Emergency Response Plan (OERP)

OERP-01	Does the utility have a documented OERP available for utility staff to use? IF NO, GO TO QUESTION OERP-04.	YES	NO
OERP-02	How often is the OERP reviewed and updated? *(Annually, Biannually, etc.)*	Annually	
OERP-03	Are specific responsibilities detailed in the OERP for personnel who respond to emergencies?	■	NO
OERP-04	Are staff continuously trained and drilled to respond to emergency situations?	■	NO
OERP-05	Do work crews have immediate access to tools and equipment during emergencies?	■	NO
OERP-06	Does the utility have standard procedures for notifying state agencies, local health departments, the NPDES authority, the public, and drinking water authorities of significant overflow events?	■	NO
OERP-07	Does the procedure include a current list of the names, titles, phone numbers, and responsibilities of all personnel involved?	■	NO
OERP-08	Does the utility have a public notification plan?	■	NO
OERP-09	Does the utility have procedures to limit public access to and contact with areas affected with SSOs? *(Procedure can be delegated to another authority)*	■	NO
OERP-10	Does the utility use containment techniques to protect the storm drainage systems?	■	NO

OERP-11 Do the overflow records include the following information? *(Check all that apply)*

- ■ Date and time
- ■ Location
- ■ Any remediation efforts
- ■ Cause s)
- ■ How it was stopped
- ■ Estimated flow/volume discharged
- ■ Names of affected receiving water(s)
- ■ Duration of overflow

OERP-12	Does the utility have signage to keep public from effected area?	■	NO

Smoke and Dye Testing (SDT)

SDT-01	Does the utility have a smoke testing program to identify sources of inflow and infiltration?	YES	■
SDT-01A	Does the utility have a smoke testing program to identify sources of inflow and infiltration in illegal connectors?	YES	■
SDT-01B	Does the utility have a smoke testing program to identify sources of inflow and infiltration in house laterals (private service laterals)?	YES	■
SDT-02	Are there written procedures for the frequency and schedule of smoke testing?	YES	■
SDT-03	Is there a documented procedure for isolating line segments?	YES	■
SDT-04	Is there a documented procedure for notifying local residents that smoke testing will be conducted in their area?	■	NO
SDT-05	What is the guideline for the maximum amount of the line to be tested at one time? *(Feet or Miles)*	1,200-1,600 ft	
SDT-06	Are there guidelines for the weather conditions under which smoke testing should be conducted?	YES	■
SDT-07	Does the utility have a goal for the percent of the system smoke tested each year?	YES	■
SDT-08	What percent of the system has been smoke tested over the past year?	0 %	
SDT-09	Do the written records contain location, address, and description of the smoking element that produced a positive result?	YES	■
SDT-10	Does the utility have a dye testing program?	YES	■
SDT-11	Are there written procedures for dye testing?	YES	■
SDT-12	Does the utility have a goal for the percent of the system dye tested each year?	YES	■
SDT-13	What percent of the main collection system has been dye tested over the past year?	0 %	
SDT-14	Does the utility share smoke and dye testing equipment with another utility?	YES	■

Hydrogen Sulfide Monitoring and Control (HSMC)

HSMC-01 How would you rate the systems vulnerability for hydrogen sulfide corrosion? *(Check only one)*

☐ Not a problem ■ Only in a few isolated areas ☐ A major problem

HSCM-02 Does the utility have a corrosion control program? YES ■

HSCM-03 Does the utility take hydrogen sulfide corrosion into consideration when designing new or replacement sewers? ■ NO

HSCM-04 Does the utility have written procedures for the application of chemical dosages? YES ■

HSCM-05 Are the chemical dosages, dates, and locations documented? YES ■

HSCM-06 Does the utility document where odor is a continual problem in the system? ■ NO

HSCM-07 Does the utility have a program in place for renewing or replacing severely corroded sewer lines to prevent collapse? ■ NO

HSCM-08 Are the following methods used for hydrogen sulfide control? *(Check all that apply)*

☐ Aeration	☐ Chlorine	☐ Potassium permanganate
☐ Iron salts	☐ Sodium hydroxide	☐ Biofiltration
☐ Enzymes	☐ Hydrogen peroxide	☐ Other
☐ Activated charcoal canisters		

HSCM-09 Does the system contain air relief valves at the high points of the force main system? ■ NO

HSCM-10 How often are the valves maintained and inspected? *(Weekly, Monthly, etc.)* Annually

HSMC-11 Does the utility enforce pretreatment requirements? ■ NO

Infrastructure Security

Although outside the scope of a CMOM program, municipal wastewater utilities should also consider security vulnerabilities. To reduce the threat of both intentional and natural disasters, the utility should take steps to implement appropriate countermeasures and develop or update emergency response plans.

APPENDIX I - 5 YEAR CAPITAL IMPROVEMENT PLAN

Revised 3/31/2025

Project	5/1/2025 FY 26 Budget	5/1/2026 FY 27 Budget	5/1/2027 FY 28 Budget	5/1/2028 FY 29 Budget	5/1/2029 FY 30 Budget	5/1/2030 FY 31 Budget	5/1/2031 FY 32 Budget
CLP Interceptor Crossing							
2023 Improvements Design and Bid Phase Services							
2023 Improvements Project	Construction*	Construction*					
Interceptor Sewer Rehabiltation	$900,000	$200,000	$150,000	$1,200,000	$750,000	$150,000	$1,300,000
Collector Sewer Rehabilitation	$25,000	$1,250,000	$50,000	$50,000	$0	$50,000	$75,000
Rebecca Drive Creek Crossing Protection							
Replacement Vehicles - Trucks or Cars	$120,000	$65,000	$65,000	$65,000	$70,000	$70,000	$75,000
Combination Truck Replacement	$580,000						
2025 Improvements Design and Bid Phase Services	$900,000		Construction**	Construction**	Construction**		
Computer Hardware Replacements	$120,000						
NEP Sample Hut Replacement							
Staley Pump Station Lid Replacement	$75,000						
NEP Cottage Grove Sidewalk							
SWP Grit Tank Liners							
Replacement of Salt Spreader							
Station R Copier/Printer Replacement							
Solon Farm UPD Improvements							
Station R HVAC Replacement	$675,000						
ETU Upgrades	$400,000						
PLC Upgrades	$182,000						
Tractor Attachments - Grader Box and Bush Hog	$11,300						
New snowblower for SWP	$55,000						
NEP Station Q Blower	$16,000						
Ross Pump Station Generator	$40,000						
Station E Air Conditioner	$16,000						
Sewer Televising Truck Replacement		$300,000					
Crystal Lake Drive Relief Sewer		$250,000					
I-74 Pump Station Design	$170,000						
I-74 Pump Station Replacement			$3,000,000				
2030 Improvements Design and Bid Phase Services				$1,000,000	$1,000,000	Construction***	Construction***
Amvets Pump Station Replacement Design					$500,000		
Amvets Pump Station Replacement						$4,000,000	$0
Totals	$4,285,300	$2,065,000	$3,265,000	$2,315,000	$2,320,000	$4,270,000	$1,450,000
Major Maintenance Expenses (Roof, Tank Repairs, and Painting Projects)	$435,000	$250,000	$250,000	$600,000	$500,000	$575,000	$500,000
	$4,720,300	$2,315,000	$3,515,000	$2,915,000	$2,820,000	$4,845,000	$1,950,000

Notes: Construction* refers to $43,900,000 in construction costs associated with the 2023 Phase 1 Improvements Project which would be paid by debt service thru a loan.
Construction** refers to $19,000,000 in construction costs associated with the 2025 Phase 2 Improvements Project which would be paid by debt service thru a loan.
Construction*** refers to $44,000,000 in construction costs associated with the 2030 Phase 3 Improvements Project which would be paid by debt service thru a loan.
1. New televising truck replaces existing purchased in 2012. Does not include trade-in or auction value for existing equipment.