Sewer System Management Plan

April 2023

Waste Discharge Identification Number: 5SS010931

Prepared for:

City of Dixon
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Acronyms and Abbreviations

CCTV	closed-circuit television
CIP	Capital Improvement Plan
City Standards	City of Dixon Engineering Standards and Specifications
City	City of Dixon
CIWQS	California Integrated Water Quality System
CPR	cardiopulmonary resuscitation
FOG	fats, oils, and grease
FSE	food service establishment
gal/yr	gallons per year
GIS	geographic information system
I/I	infiltration/inflow
mg/L	milligrams per liter
MRP	Monitoring and Reporting Program
NA	not applicable
NASSCO	National Association of Sewer Service Companies
NPDES	National Pollution Discharge Elimination System]
OERP	Overflow Emergency Response Plan
OES	State Office of Emergency Services
PM	preventative maintenance
POTW	publicly owned treatment works
PPE	personal protective equipment
PVC	polyvinyl chloride
SSMP	Sewer System Management Plan
SSO	sanitary sewer overflow
WDRs	Statewide General Waste Discharge Requirements for Sanitary Sewer Systems, State Water Resources Control Board Order No. 2006-0003, as approved on May 2, 2006

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Introduction

The City of Dixon (City) operates the sanitary sewer collection system and wastewater treatment plant, serving approximately 19,000 people and collecting approximately 410 million gallons per year[1] in the service area, as shown in Figure 1 below. The purpose of this Sewer System Management Plan (SSMP) is to provide a system-wide management plan for the operation, maintenance, expansion, repair, and replacement of the City's sanitary sewer collection system. This SSMP has been prepared in compliance with the requirements of the Statewide General Waste Discharge Requirements for Sanitary Sewer Systems, State Water Resources Control Board Order No. 2006-0003, as approved on May 2, 2006 (WDRs). The City's Waste Discharge Identification Number, assigned by the State Water Resources Control Board, is 5SS010931.

Figure 1, City of Dixon Wastewater Collection System, which is Figure 2-1 in the City of Dixon Sewer Collection System Master Plan, shows the City's existing service area and sanitary sewer collection system network, including pump stations and force mains.

[1] City of Dixon. 2022. 2020 Urban Water Management Plan. Draft. Prepared by City of Dixon and West Yost. March. Accessed May 2022. https://www.cityofdixon.us/media/Water/R%20-%20066%20-%20City%20of%20Dixon%20-%202020%20UWMP%20-%20Public%20Review%20Draft%20-%20March%2030,%202022.pdf.

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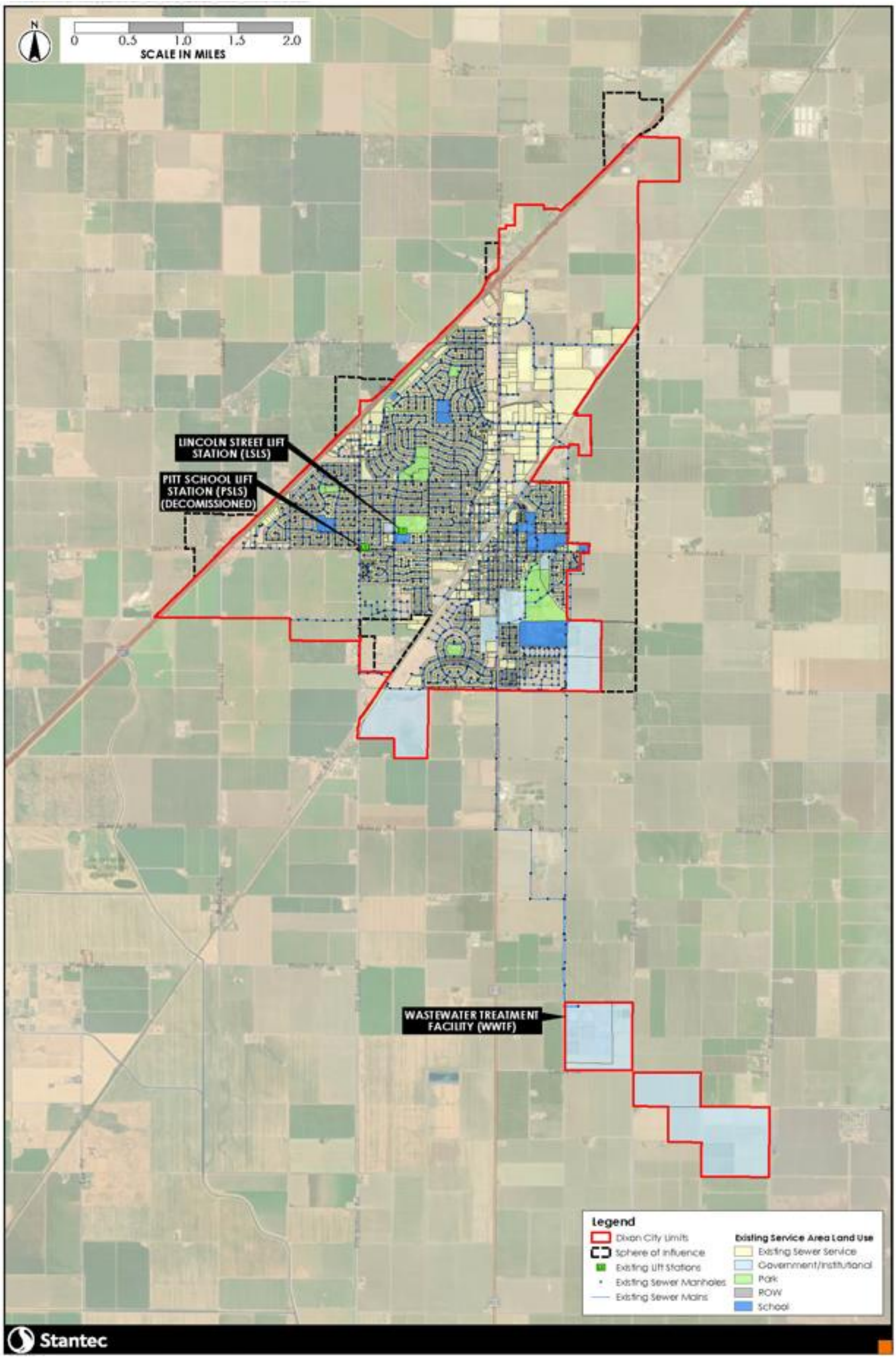
Figure 1. City of Dixon Wastewater Collection System



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Section 1 Element 1 Goals

This SSMP Element identifies goals that the City has set for the management, operation, and maintenance of the sanitary sewer system and discusses the role of the SSMP in supporting these goals. The goals provide focus for the City's Collections System Operations and Maintenance staff to continue high-quality work and implement improvements in the management of the City's sanitary sewer collection system. This section fulfills the goals requirement of the WDRs.

1.1 Regulatory Requirement for the Goals Element

Element 1, Goals, of the WDRs states the following:

> *Section D.13 (i) – Goal: The goal of the SSMP is to provide a plan and schedule to properly manage, operate, and maintain all parts of the sanitary sewer system. This will help reduce and prevent SSOs, as well as mitigate any SSOs that do occur.*

1.2 Sewer System Management Plan Goals

The City Council adopted the primary goals of the City's SSMP on October 23, 2007, by Resolution 07-179, which is included in Appendix A with the corresponding City Council Report. The goals are as follows:

- Maintain or improve the condition of the collection system infrastructure in order to provide reliable service now and into the future
- Cost-effectively minimize infiltration/inflow (I/I) and provide adequate sewer capacity to accommodate design storm flows
- Minimize the number and impact of sanitary sewer overflows (SSOs) that occur

Along with these primary goals, the City identified six key areas of concern that must be addressed on an ongoing basis to achieve and consistently implement the SSMP goals. The City Council adopted these areas of concern, which are listed below, on October 23, 2007, by Resolution 07-179:

- Customer service
- Water quality and environmental protection
- Long-term wastewater collection and treatment service
- Long-term infrastructure investment
- Long-term financial stability
- Workforce planning and development

In November 2016, a 30-day review period allowed the public to provide comments on the goals and areas of concern. The City advertised the review period on its website and Facebook page and did not receive any public comments.

City staff will track these goals and report progress in the annual audit. The City will revise and update the goals as required. Any changes will be included in the required audit.

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Section 2 Element 2 Organization

This Element of the SSMP identifies City staff responsible for implementing this SSMP, responding to SSO events, and meeting the SSO reporting requirements. This section also includes the designation of the authorized representative to meet State Water Resources Control Board requirements for completing and certifying spill reports.

2.1 Regulatory Requirements for the Organizational Element

Element 2, Goals, of the WDRs states the following:

> *Section D.13 (ii) – Organization: The SSMP must identify:*
>
> *(a) The name of the responsible or authorized representative as described in Section J of this Order.*
>
> *(b) The names and telephone numbers for management, administrative, and maintenance positions responsible for implementing specific measures in the SSMP program. The SSMP must identify lines of authority through an organization chart or similar document with a narrative explanation; and*
>
> *(c) The chain of communication for reporting SSOs, from receipt of a complaint or other information, including the person responsible for reporting SSOs to the State and Regional Water Board and other agencies if applicable (such as County Health Officer, County Environmental Health Agency, Regional Water Board, and/or State Office of Emergency Services (OES)).*

2.2 Organization Chart

The portion of the City's organization chart that relates to management, operation, and maintenance of the sanitary sewer collection system is shown on Figure 2, City of Dixon Sewer System Management Plan Organization Chart.

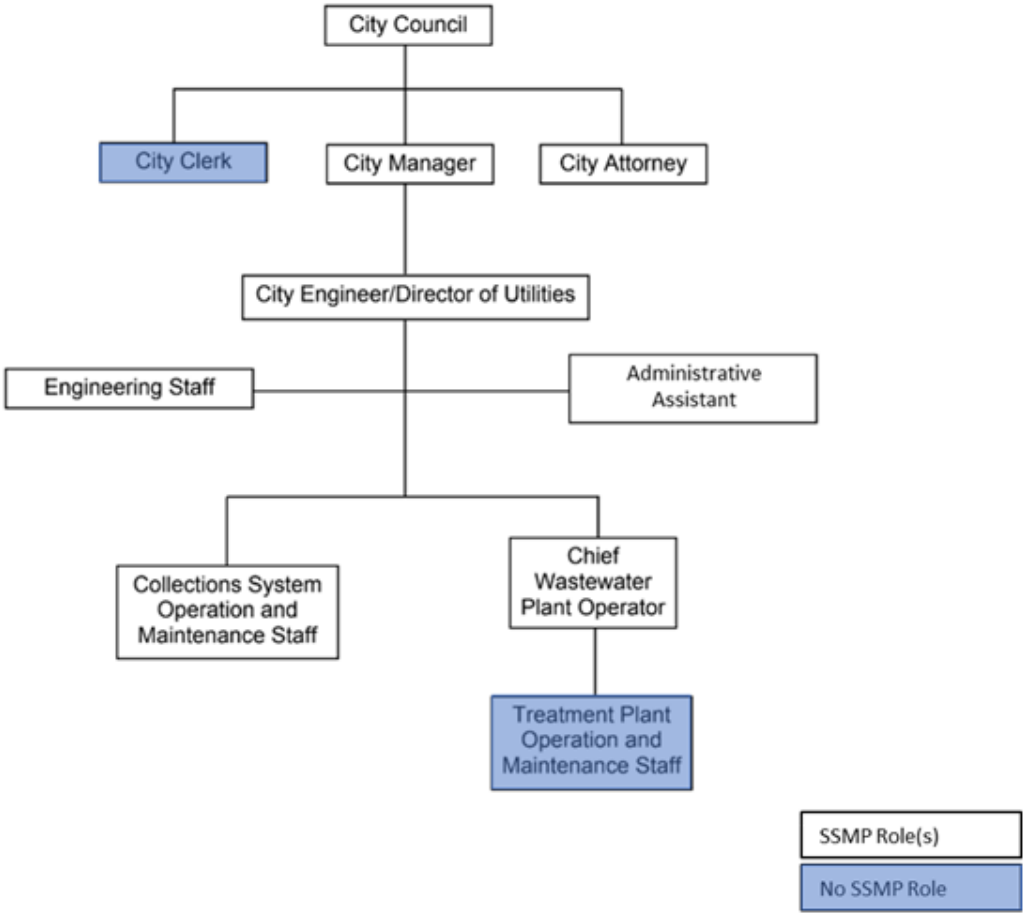
The roles for wastewater collection system participants shown in Figure 2 are as follows:

- **City Council –** Establishes policy; reviews and accepts formal plans; sets overall City direction; authorizes funds for projects, plans, programs, and staff; conducts public meetings and hearings; and approves the SSMP.
- **City Manager –** Responsible for the day-to-day management and operation of the City under the direction of the City Council. Establishes procedures, plans strategy, leads staff, allocates resources defined in the City budget, delegates responsibility, authorizes outside contractors to perform services, and serves as the overall public information officer.
- **City Attorney –** Develops and approves legal documents, provides legal advice, conducts litigation, attends public meetings, and advises the City Council to ensure operations are compliant with state and federal regulations.
- **City Engineer/Director of Utilities –** Acts as the legally responsible official and is responsible for submitting monthly reports to the California Integrated Water Quality

System (CIWQS). Responsible for the development and implementation of City design and construction standards. Develops and oversees engineering studies, such as hydraulic modeling, master planning, and Capital Improvement Plan (CIP) program development; approves development plans; and signs CIPs and specifications.

- **Chief Wastewater Plant Operator –** Responsible for overseeing the operation and maintenance of the wastewater treatment facility, issuing and monitoring non-food service establishment (FSE) Wastewater Discharge Permits, managing capital improvement projects for the design and construction of the City's utility infrastructure, and maintaining the City's geographic information system (GIS) maps and database.
- **Engineering Staff –** Ensures that new and rehabilitated assets meet the City's Engineering Standards and Specifications (City Standards), provides daily reports to the City Engineer during construction projects, and implements enforcement actions. Issues and monitors FSE Wastewater Discharge Permits and develops and coordinates implementation of and upgrades to the SSMP.
- **Administrative Assistant –** Assists with processing reports, public notices, and reports between City Engineering staff and Collections System Operations and Maintenance staff.
- **Collections System Operations and Maintenance Staff –** Conducts preventative and corrective maintenance to the collection system, mobilizes and responds to notifications of stoppages and SSOs, closed-circuit televises (CCTV's) infrastructure, reports condition of City assets, and maintains pump stations. Responsible for maintenance of the sanitary sewer system. Assesses the condition of the collection system using the National Association of Sewer Service Companies (NASSCO) rating system, directly supervises maintenance crews, schedules regular maintenance activities, coordinates field operations, prepares and implements the Overflow Emergency Response Plan (OERP), leads emergency response, investigates and reports SSOs, and mobilizes sewer cleaning equipment and bypass pumping equipment.

Figure 2. City of Dixon Sewer System Management Plan Organization Chart



City of Dixon Contact Information

Position/Role	Name	Phone Number	Extension
Mayor	Steve Bird	707-685-5217	
Vice Mayor	Scott Pederson	916-284-3952	
Councilmember	Don Hendershot	707-333-9781	
Councilmember	Kevin Johnson	707-685-3870	
Councilmember	Jim Ernst	707-999-0294	
City Manager	Jim Lindley	(707) 678-7000	1101
City Attorney	Douglas White (White Brenner LLP)	(916) 468-0950	
City Engineer/Director of Utilities	Deborah Barr	707-678-7030	5306
Chief Wastewater Plant Operator	Sandy Jones	707-678-7059	6101
Engineering Staff	Leland Markusen	707-678-7030	5312
Engineering Staff	Brandon Rodriguez	707-678-7030	5303
Engineering Staff	Jordan Santos	707-678-7030	5311
Collection System Operations and Maintenance Supervisor	Hector Garcia	707-410-7211	
Collection System Operations and Maintenance Staff	Barret Edon	530-760-7703	
Collection System Operations and Maintenance Staff	David McAnelly	530-220-6971	
Collection System Operations and Maintenance Staff	Vacant		
Administrative Assistant	Itzie Serrano	707-678-7030	5304

2.3 Authorized Representative

The City Engineer/Director of Utilities, Deborah Barr, is the legally responsible official or authorized representative to prepare, certify, and submit electronic spill reports to the Regional Water Quality Control Board and State Water Resources Control Board and to notify other government agencies.

2.4 Sanitary Sewer Overflow Reporting Chain of Communication

SSO detection, notification, response, and reporting processes are described in Element 6, Overflow Emergency Response Plan. The process is illustrated in Figure 3, Overflow Emergency Response Plan Process.

The regulatory notification responsibility and requirements are included in the SSOs and Backup Response Plan and include the instructions on Figure 4, Reporting Instructions.

Figure 3. Overflow Emergency Response Plan Process

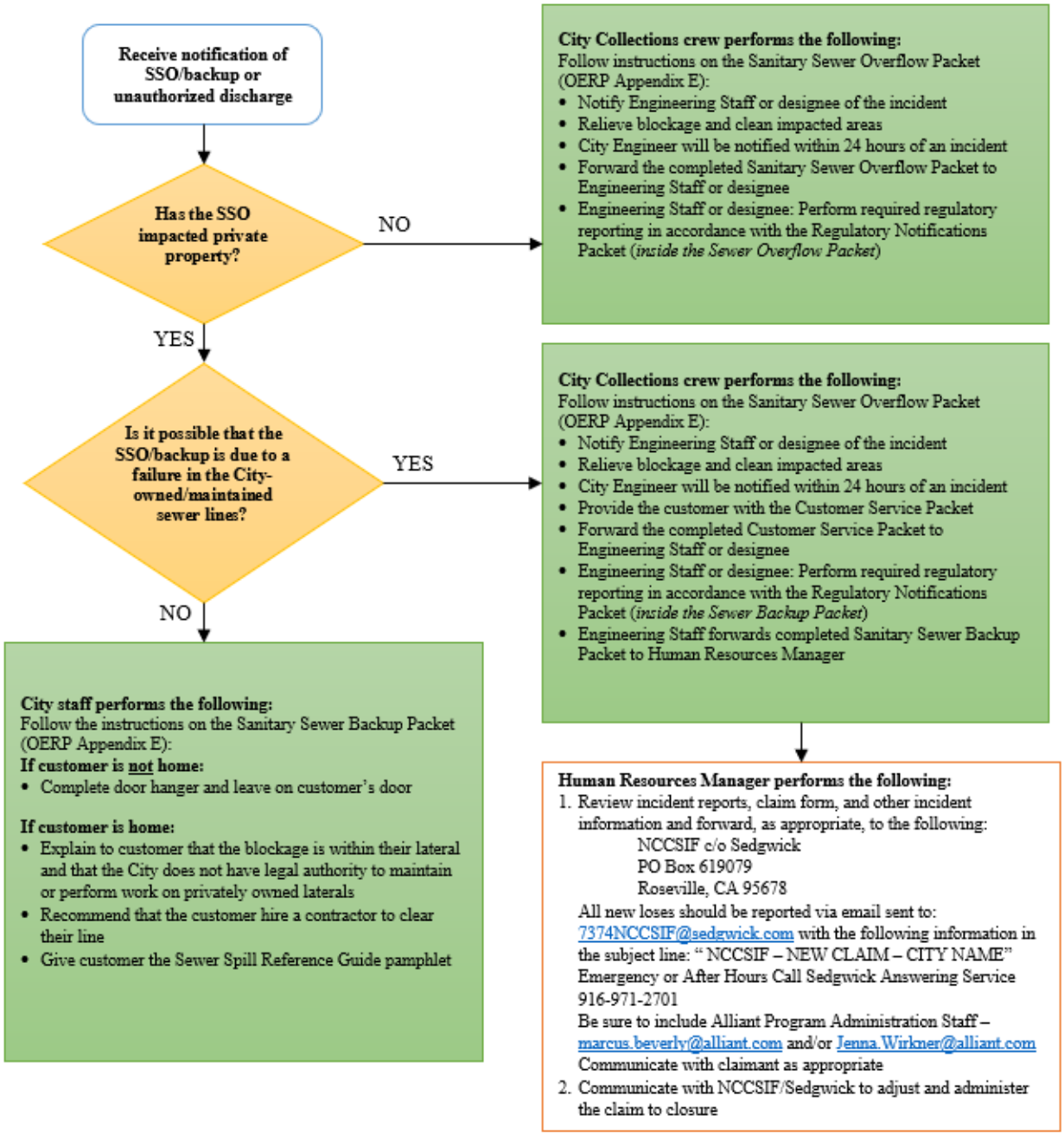


Figure 4. Reporting Instructions

Reporting Instructions			
Deadline	**Category 1 SSO**	**Category 2 SSO**	**Category 3 SSO**
2 hours after becoming aware of the SSO	If the spill is greater than or equal to 1,000 gallons discharged to surface water or spilled in a location where it probably will be discharged to surface water, call CalOES and obtain a notification control number	-	-
48 hours after initial SSO notification	Conduct water quality sampling for SSO in which 50,000 gallons or greater are spilled to surface waters	-	-
3 business days after becoming aware of the SSO	Submit Draft Spill Report into CIWQS database	Submit Draft Spill Report into CIWQS database	-
15 calendar days after response conclusion	Submit Certified Spill Report into CIWQS database	Submit Certified Spill Report into CIWQS database	-
30 calendar days after end of calendar month in which SSO occurred	-	-	Submit Certified Spill Report into CIWQS database
45 calendar days after SSO end date	If 50,000 gallons or greater are spilled to surface waters, submit SSO Technical Report to CIWQS database	-	-

Section 3 Element 3 Legal Authority

This Element of the SSMP discusses the City's legal authority to control discharges into its sanitary sewer system.

3.1 Regulatory Requirements for the Legal Authority Element

Element 3, Goals, Legal Authority, of the WDRs states the following:

> *Section D.13 (iii) – Legal Authority: Each Enrollee must demonstrate, through sanitary sewer system use ordinances, service agreements, or other legally binding procedures, that it possesses the necessary legal authority to:*
>
> *(a) Prevent illicit discharges into its sanitary sewer system (examples may include I/I, storm water, chemical dumping, unauthorized debris and cut roots, etc.);*
>
> *(b) Require that sewers and connections be properly designed and constructed;*
>
> *(c) Ensure access for maintenance, inspection, or repairs for portions of the lateral owned or maintained by the Public Agency;*
>
> *(d) Limit the discharge of fats, oils, and grease and other debris that may cause blockages, and*
>
> *(e) Enforce any violation of its sewer ordinances.*

3.2 Legal Authority

The Dixon Municipal Code was updated on June 24, 2014, through Ordinance No. 14-009 to add Article XII (which prohibits the discharge of fats, oils, and grease [FOG] from FSEs) and through Ordinance No. 14-010 to add Article XIII (which regulates private sewer laterals) to Chapter 14.01, Sewers, to comply with all applicable federal and state laws, including the Clean Water Act and the Porter-Cologne Water Quality Control Act.

3.2.1 Prevention of Illicit Discharges

Measures prohibiting illicit discharges are included in Dixon Municipal Code, Chapter 14.01, Sewers, Article II, General Sewer Use Requirements (Appendix B). The purpose of this section is to prevent the discharge of pollutants into the sewers that would obstruct or damage the collection system, interfere with the treatment process, or threaten harm to human health or the environment. Examples of discharges covered are included below.

Stormwater and Infiltration/Inflow

Section 14.01.230, Prohibited Discharge Standards, Part B, states the following:

> *No user shall introduce or cause to be introduced into the POTW [publicly owned treatment works] the following pollutants, substances, or wastewater . . .*
>
> *12. Storm water, surface water, groundwater, artesian well water, roof runoff, street drainage, yard drainage, subsurface drainage, swimming pool drainage, condensate, deionized water, noncontact cooling water, and unpolluted wastewater, unless specifically authorized by the Director.*

Industrial Waste

Section 14.01.410, Wastewater Discharge Permit Requirement, Part A, states the following:

> *No significant industrial user shall discharge wastewater into the POTW without first obtaining a wastewater discharge permit from the Director.*

Wastewater Discharge Permits include conditions that are deemed reasonably necessary by the Director to prevent pass-through or interference, protect the quality of the water body or disposal fields receiving the wastewater treatment facility's effluent, prevent excessive maintenance and operational costs, protect worker health and safety, facilitate sludge management and disposal, and protect against damage to the POTW. Section 14.01.300, Pretreatment Facilities, requires all non-residential users to provide wastewater treatment as necessary to comply with the Dixon Municipal Code.

Other Discharges

Section 14.01.230, Prohibited Discharge Standards, Part B, lists 18 prohibited discharges into the City's wastewater system.

3.2.2 Proper Design and Construction

Before construction within the City's right-of-way, which includes connecting a sewer lateral to the public sewer system, all applicants are required to obtain an Encroachment Permit per Dixon Municipal Code, Chapter 13.01, Encroachments. City Engineering inspects all encroachment work. Sewers and connections must be designed and constructed to current City Standards.

For new construction, Section DS6-05A of the City Standards requires the installation of new sanitary sewers in the pavement area of the street. Section DS6-05B allows, under special circumstances, the placement of sanitary sewer lines in a minimum 15-foot-wide easement crossing one lot only if approved in advance of improvement plan submittal by the City Engineer. Deeper lines require a wider easement to the satisfaction of the City Engineer.

Element 5, Design and Performance Provisions, of this SSMP incudes additional information on design and construction.

3.2.3 Access for Maintenance, Inspection, and Repairs

Dixon Municipal Code, Section 14.01.700, Right of Entry – Inspection and Sampling, outlines the Director's authority to obtain right-of-entry for the purposes of inspection, sampling, records examination and copying, and any additional duties. Section 14.01.705, Right of Entry – Maintenance and Repair, states that "the Director shall have the right to enter the premises of any user to repair or perform maintenance services on all City facilities."

3.2.4 Limitation of Fats, Oils, and Grease Discharge

Dixon Municipal Code, Chapter 14.01, Sewers, Article XII, Discharges of Fats, Oils, and Grease from Food Service Establishments, limits the discharge of FOG from FSEs into the public sewer system by requiring a discharge permit and annual inspections of the facilities. Further information is in Element 7, Fats, Oils, and Grease Control Program, of this SSMP.

3.2.5 Enforcement of Violations

Dixon Municipal Code, Chapter 14.01, Sewers, Article VIII, Administrative Enforcement Remedies, gives the Director authority to serve a written notice of violation to any non-residential user that has violated, or continues to violate, any provision of Chapter 14.01. Article IX, Judicial Enforcement Remedies, and Article X, Supplemental Enforcement Action, further outline additional measures the Director can take in the form of legal action and financial assurance.

Article XIII, Private Sewer Laterals, gives the Director authority to enforce the maintenance, repair, and replacement of private sewer laterals to prevent or address spills or blockages within private sewer laterals.

In cases of accidental damage during construction work, an incident may occur either on existing City facilities within City rights-of-way (such as streets, properties [such as parks], or easements through private property) or on existing City facilities on private property in which the City does not have an easement.

When accidental damage during construction work occurs on existing City facilities within the City right-of-way, the damage would typically have occurred during work performed via a City Encroachment Permit, a Subdivision Improvement Agreement, or a City capital improvement project. If a contractor damages existing City facilities, the contractor must repair the damage at no cost to the City. For work via a City Encroachment Permit, the City's Encroachment Permit General Rule and Regulation 1 defines the City's legal authority, and the City's Encroachment Permit General Rule and Regulation 11 requires repair of any accidental damage to underground utilities. For work done via a Subdivision Improvement Agreement, legal authority exists in Sections 10 and 11 of the City's standard Subdivision Improvement Agreement (refer to Appendix K for a sample Subdivision Improvement Agreement). For work done via a City capital improvement project, legal authority exists in Section 7-11 of the General Provisions of the City Standards, which is included in Appendix C.

For continual violations, Dixon Municipal Code, Section 14.01.900, gives the Director the ability to petition the courts for injunctive relief. Sections 14.01.910–14.01.920 create civil and criminal penalties for any violation of the Dixon Municipal Code.

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Section 4 Element 4 Operation and Maintenance Program

This Element of the SSMP discusses the City's operation and maintenance program for the sanitary sewer system.

4.1 Regulatory Requirements for the Operation and Maintenance Program Element

Element 4, Goals, Operation and Maintenance Program, of the WDRs states the following:

> *Section D.13 (iv) – Operation and Maintenance Program: The SSMP must include those elements listed below that are appropriate and applicable to the Enrollee's system:*
>
> *(a) Maintain an up-to-date map of the sanitary sewer system, showing all gravity line segments and manholes, pumping facilities, pressure pipes and valves, and applicable storm water conveyance facilities;*
>
> *(b) Describe routine preventive operation and maintenance activities by staff and contractors, including a system for scheduling regular maintenance and cleaning of the sanitary sewer system with more frequent cleaning and maintenance targeted at known problem areas. The Preventative Maintenance (PM) program should have a system to document scheduled and conducted activities, such as work orders;*
>
> *(c) Develop a rehabilitation and replacement plan to identify and prioritize system deficiencies and implement short-term and long-term rehabilitation actions to address each deficiency. The program should include regular visual and TV inspection of manholes and sewer pipes, and a system for ranking the condition of sewer pipes and scheduling rehabilitation. Rehabilitation and replacement should focus on sewer pipes that are at risk of collapse or prone to more frequent blockages due to pipe defects. Finally, the rehabilitation and replacement plan should include a capital improvement plan that addresses proper management and protection of the infrastructure assets. The plan shall include a time schedule for implementing the short- and long-term plans plus a schedule for developing the funds needed for the capital improvement plan;*
>
> *(d) Provide training on a regular basis for staff in sanitary sewer system operations and maintenance and require contractors to be appropriately trained; and*
>
> *(e) Provide equipment and replacement part inventories, including identification of critical replacement parts.*

4.2 Maps

The City maintains a GIS map of the City's wastewater system. The City currently maintains layers of information that include sewer manholes, sewer lines, storm drain structures, storm drain lines, city limits, parcels, streets, subdivisions, assessment districts, and zoning. The information collected using CCTV and Hansen Information Technologies can be linked to the City's sewer line layer GIS data using the Granite XP software. The GIS layers are updated on an as-needed basis. Utility maps have been converted to 8.5-by-11-inch mapbooks that contain both storm drain and sanitary sewer information. These mapbooks are at the City Engineering and Collections

Divisions and in field vehicles to locate and identify wastewater and storm drain structures and lines, and to aid in responses to SSOs.

4.3 Preventative Operations and Maintenance Program

4.3.1 Gravity Sewers

The wastewater maintenance crew performs an assortment of scheduled preventative, predictive, and breakdown maintenance on various systems and equipment.

The City's preventative maintenance activities include routine inspections of "hotspots" (defined as areas susceptible to sewer backups) and lift stations. The City's maintenance staff identified 14 hotspots throughout the City. Staff inspects these locations on a monthly basis and cleans them as necessary. Staff records each visit with the date, inspector's initials, and comments.

Staff responds to customer concerns and complaints immediately and investigates the problem location and best course of action.

The City owns and operates a vac-con truck and CCTV truck to clean and inspect the City's 73 miles of sewer mains. The City has cleaned and CCTV'd the sanitary sewer lines since July 2009 and completed all lines in December 2013. City staff completed the second round of inspections and cleaning in 2018 and should complete the third round in mid-2023. City staff will use the data collected using the CCTV truck and the Granite XP software to perform the following tasks:

- Identify problem areas, hotspots, blockages, or known problem areas, such as grease accumulation or shallow slope
- Identify root intrusions into the City's sewer mains to create a sewer root maintenance plan
- Identify the sewer mains and manholes that need immediate repair and revise the City's CIP
- Rate the sewer lines using the NASSCO rating system to establish ongoing funding for major rehabilitation, upsizing, or replacement of the collection system as the system wears out or upgrading of the system because of expansion
- Create a cleaning and CCTV schedule for every City sanitary sewer line at a maximum of every 5 years
- Notify residents of identified problems within their laterals

4.3.2 Lift Stations

The City's System Operations and Maintenance Division is responsible for daily inspections of the lift stations. Weekly inspections include visually checking the equipment, manually cycling pumps, and checking and cleaning floats if necessary. The alarm company computer system records and stores alarms automatically. Removal of debris from lift stations is conducted every 6 months or when a problem is identified. City staff inspects lift stations extensively every year. Extensive maintenance includes cleaning sumps and removing pumps for inspection and repairs if

necessary. The Collections System Maintenance and Operations Supervisor maintains lift station inspection sheets and tracks information in a spreadsheet in the Collections System Maintenance and Operations Division's office. The City plans to transition this system to the computerized maintenance management system when it becomes operational for the division. Currently, lift stations have backup alarm alerts for the following conditions:

- High water alarm (mechanical float)
- Hi-hi water level
- Power failure alarm

An OERP was prepared for the Lincoln Street Lift Station in May 2014 and can be found in the "On-Call Case" at all times. The "On-Call Case" is physically located at the Valley Glenn Pumpstation and in each vehicle.

4.3.3 Root Control

The City's Collections System Maintenance and Operations Division has identified invasive roots in the City's sewer system and private laterals using the CCTV truck during routine inspections. City staff removed the locations in the City's system during cleaning and noted the locations as part of a root removal project using chemical agents and mechanical cutters. City staff documents private laterals with root problems, and for locations with significant root problems, staff sends notices with pictures of the problem to the homeowners responsible for the laterals.

4.3.4 Odor Control

In the event that the City receives an odor complaint, the Collections System Maintenance and Operations Division responds by flushing the line and/or installing manhole seals to eliminate the odor. Complaints are often in areas of low flow or end runs.

4.3.5 Non-Routine Maintenance

The City's Collections System Maintenance and Operations Division responds to complaints regarding SSOs, missing or shifted manhole lids, lift station malfunctions, sewer odors, and customer blockages, among others.

4.3.6 Emergency Maintenance

The City developed emergency maintenance procedures in the SSO and Backup Response Plan. Refer to Element 6 for more information.

4.4 Rehabilitation and Replacement Program

The City uses a combination of the following inspection activities to assess the condition of sewer assets:

- Routine (daily) aboveground inspections of the collection system facilities and lift stations to identify defects, damage, or other identified problems
- Review of videos of the system-wide CCTV inspection to determine if repairs or rehabilitation/replacement are warranted
- Review of manhole inspection forms
- Dye testing as requested to monitor and reduce I/I

In the past 5-year period of the 2017 SSMP update The Homestead Development Project was added to the City's collection system. The development included the additions of approximately 1,234 single family homes, 104 acres of multi-family dwelling units, 69.5 acres of commercial/public areas, and 49.9 acres of Industrial areas. A new system trunk expanded the existing service area to serve infill and on-going development areas extended an existing branch of the City's new E-W Trunk Connector further west to serve the remaining portion of the Homestead development area. The 18-inch E-W Branch 1 trunk was extended west to Batavia Road., where the new trunk turns north until it meets I-80. The new trunk sewer, referred to as the E-W Sewer Extension, ranges in diameter from 15-inch at its downstream point of connection to the existing system, to 10-inches in diameter at its upstream end where it meets I-80. The capacity of the trunk extension ranges from 1.84 MGD at its downstream end to 0.76 at its upstream end. Further information on this can be found in the Homestead Sanitary Sewer Report (July 2019) and in the soon to be finalized Sewer Collection System Master Plan (2023).

4.5 Training Program

The wastewater treatment facility and Collections System Maintenance and Operations Division maintain a matrix for each staff member associated with the Wastewater Treatment and Collections System Maintenance and Operations Divisions that includes certifications, license numbers, expiration dates, and continuing education unit requirements. The City offers numerous in-house training programs and participates in the California Water Environmental Association and NASSCO certification programs that require ongoing continuing education to maintain certifications.

Training includes but is not limited to the following:

- Qualified Applicators Pesticide Certificate
- Cardiopulmonary resuscitation (CPR)
- Class B license
- NASSCO
- First aid and bloodborne pathogen exposure
- Chlorine safety

- Driver safety
- Sludge dewatering systems
- Confined space entry
- Trenching
- Back safety
- Flagging
- Lockout/tagout procedures

4.6 Contingency Equipment and Replacement Parts Inventory

- 6-inch bypass pump
- 4-inch bypass pump
- Tiger tails: Hose protection
- Traffic control: Barricades, cones, “men working” signs
- Tri-pod: Confined space equipment
- Grease control pucks
- Sample bottles for testing hose for vac-con
- Safety personal protective equipment (PPE): eye ware, gloves, eyewash
- Extras cameras for CCTV
- Sewer snake for laterals
- Push camera for laterals
- Spill protection for catch basins (for SSOs)
- Extra cables for CCTV
- Lift station filters and compressors
- Inspection forms
- Extra cleaning heads
- Extra fuses for lift stations
- Extra floats for lift stations
- Plugs for line sizes within city limits: 6, 8, 10, 12, 15, 18, 21, 27, 30, and 42 inches

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Section 5 Element 5 Design and Performance Provisions

This Element of the SSMP discusses the City's design and performance provisions for installation of the sanitary sewer system.

5.1 Regulatory Requirements for the Design and Performance Provisions Element

Element 5, Goals, Design and Performance Provisions, of the WDRs states the following:

> *Section D.13 (v) – Design and Performance Provisions:*
>
> *(a) Design and construction standards and specifications for the installation of new sanitary sewer systems, pump stations and other appurtenances; and for the rehabilitation and repair of existing sanitary sewer systems, and;*
>
> *(b) Procedures and standards for inspecting and testing the installation of new sewers, pumps, and other appurtenances and for rehabilitation and repair projects.*

5.2 Standards for Installation, Rehabilitation, and Repair

5.2.1 Design and Construction Standards

The City maintains design and construction standards for the installation of new sanitary sewer pipeline, manhole, lateral, and cleanout facilities. The City does not permit pump stations unless specifically approved by the City Engineer. Design and construction of rehabilitation projects for the City's sanitary sewer system are on a case-by-case basis and may specify use of alternative technologies, such as pipe lining or pipe bursting, not addressed in the City Standards.

The City's sanitary sewer standards are in the City Standards, which are available on the City's website (https://www.cityofdixon.us/EngineeringStandardsSpecifications). Sanitary sewer design standards are in Section DS6, Sanitary Sewer Design, of the City Standards and are included in Appendix D. Sanitary sewer construction standards are in Section CS17, Sanitary Sewer System, of the City Standards and are included in Appendix D. Additionally, sanitary sewer standard details (Details 4000–4050 and 6000–6040) are in Section 3, Construction Details, of the City Standards. The sanitary sewer standard details are also included in Appendix D.

City staff periodically reviews, revises, and amends the City Standards to reflect new theories and practice in engineering design and new construction materials and techniques. The City Engineer intends to update the City Standards every 5 years to keep them current with industry standards, provide the City with higher quality infrastructure construction, extend the service life of utilities, and reduce future repair and rehabilitation costs that would become a financial burden on the existing residents of the City. The City last amended the City Standards in March 2022 by Resolution 22-052.

5.3 Standards for Inspection and Testing of New, Rehabilitated, and Repaired Facilities

City Standards, Section CS17, Sanitary Sewer System, contains procedures and standards for inspecting and testing sanitary sewer facilities. Specifically, Section CS17-03(G) specifies inspection requirements. Section CS17-03(H) specifies sewer line testing requirements, including pipe cleaning and flushing, polyvinyl chloride (PVC) deflection testing, manhole vacuum air testing, sewer line low-pressure air testing, and video inspection. Section CS17 is included in Appendix D.

Section 6 Element 6 Overflow Emergency Response Plan

This Element of the SSMP discusses the City's contingency plan and procedures for responding to an SSO event.

6.1 Regulatory Requirements for the Overflow Emergency Response Plan Element

Element 6, Goals, Overflow Emergency Response Plan, of the WDRs states the following:

> *Section D.13 (vi) – Overflow Emergency Response Plan: Each Enrollee shall develop and implement an overflow emergency response plan that identifies measures to protect public health and the environment. At a minimum, this plan must include the following:*
>
> *(a) Proper notification procedures so that the primary responders and regulatory agencies are informed of all SSOs in a timely manner;*
>
> *(b) A program to ensure an appropriate response to all overflows;*
>
> *(c) Procedures to ensure prompt notification to appropriate regulatory agencies and other potentially affected entities (e.g. health agencies, Regional Water Boards, water suppliers, etc.) of all SSOs that potentially affect public health or reach the waters of the State in accordance with the MRP [Monitoring and Reporting Program]. All SSOs shall be reported in accordance with this MRP, the California Water Code, other State Law, and other applicable Regional Water Board WDRs or NPDES [National Pollution Discharge Elimination System] permit requirements. The SSMP should identify the officials who will receive immediate notification;*
>
> *(d) Procedures to ensure that appropriate staff and contractor personnel are aware of and follow the Emergency Response Plan and are appropriately trained;*
>
> *(e) Procedures to address emergency operations, such as traffic and crowd control and other necessary response activities; and*
>
> *(f) A program to ensure that all reasonable steps are taken to contain and prevent the discharge of untreated and partially treated wastewater to waters of the United States and to minimize or correct any adverse impact on the environment resulting from the SSOs, including such accelerated or additional monitoring as may be necessary to determine the nature and impact of the discharge.*

6.1.1 Overflow and Emergency Response Plan Discussion

The City currently has an OERP to address both SSOs and backups. The City's OERP is included in Appendix E.

6.2 Sanitary Sewer Overflow Detection and Notification

The processes that are employed to notify the City of the occurrence of an SSO include observation by the public, receipt of an alarm, and observation by City staff or other public employees during the normal course of their work.

6.2.1 Public Observation

Public observation is the most common way the City receives notification of blockages and spills. Contact numbers and information for reporting sewer spills and backups are in the phone book and on the City's website (http://ci.dixon.ca.us). The City's telephone number for reporting sewer problems during business hours is (707) 678-7030 and during non-business hours is (707) 676-3156.

Business Hours

Monday–Thursday, 7:00 a.m.–4:30 p.m.; Friday, 7:00 a.m.–3:30 p.m.

City staff receives the call, takes the information from the caller, and communicates it to the field crew.

Non-Business Hours

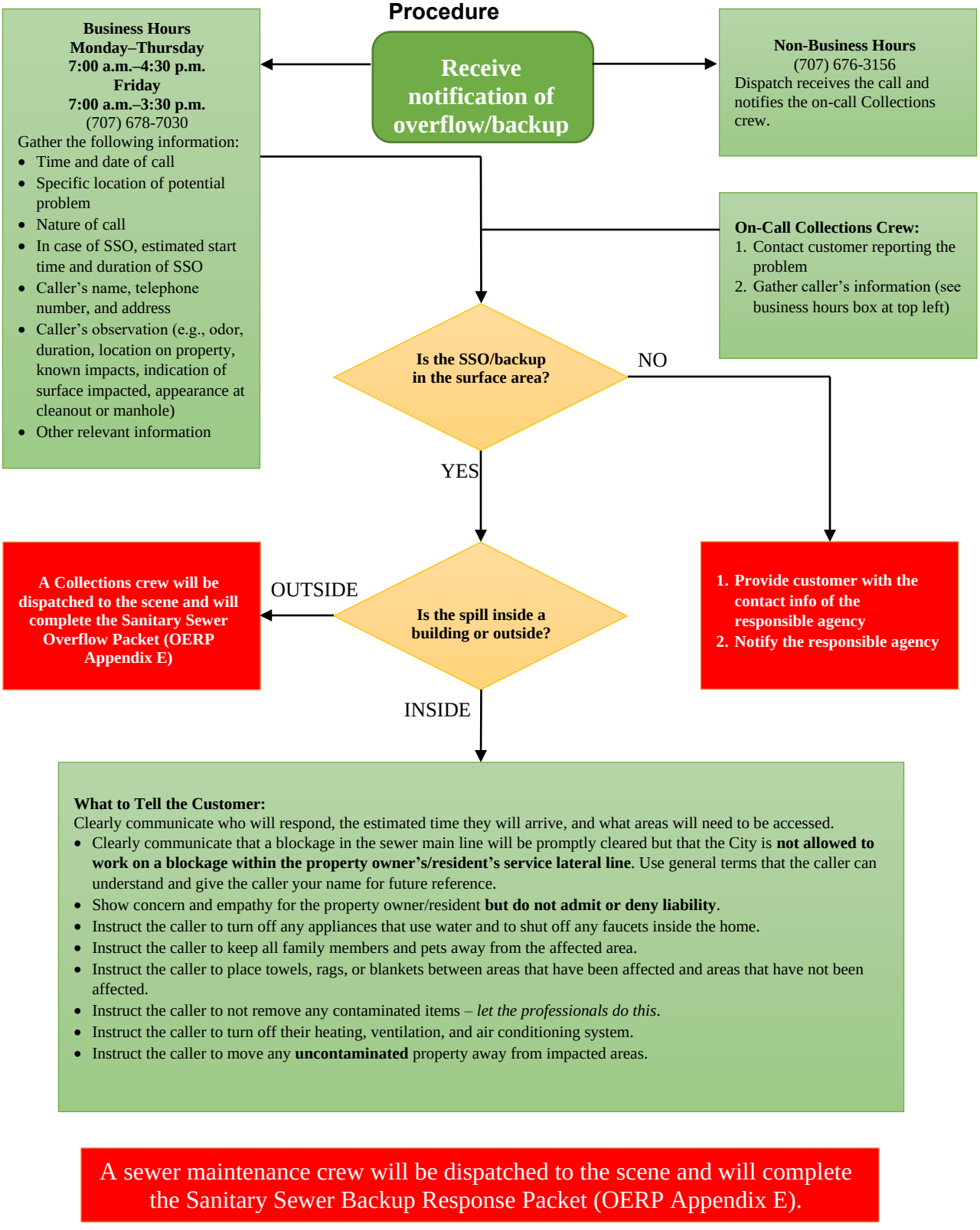
Dispatch receives the call, takes the information from the caller, contacts the on-call crew via cell phone, and communicates the necessary information to the on-call crew.

The individual receiving the call collects the following information:

- Time and date of call
- Specific location of potential SSO or incident
- Nature of call
- In case of SSO, estimated start time and duration
- Caller's name, telephone number, and address
- Caller's observations (e.g., odor, duration, location on property, known impacts, indication if surface water impacted, appearance at cleanout or manhole)
- Other relevant information

Figure 5, Overview of Receiving a Sewage Overflow or Backup Report Procedure, is an overview of receiving notification of an SSO or backup.

Figure 5. Overview of Receiving a Sanitary Sewage Overflow or Backup Report Procedure



6.2.1.1 City Staff Observation

City staff conducts periodic inspections of the City's sewer system facilities as part of their routine activities. Any problems with the sewer system facilities are reported to appropriate City staff who, in turn, responds to emergencies. City staff issues work orders to correct non-emergency conditions.

6.2.1.2 Contractor Observation

The following are the procedures in the event that a contractor causes or witnesses an SSO. If the contractor causes or witnesses an SSO, they will perform the following steps:

1. Immediately notify the City by calling (707) 678-7030 during business hours or (707) 676-3156 during non-business hours
2. Protect the public
3. Protect storm drains
4. Provide information, such as start time, appearance points, suspected cause, and weather conditions, to City staff
5. Direct all media and public relations requests to the City Engineer/Director of Utilities.

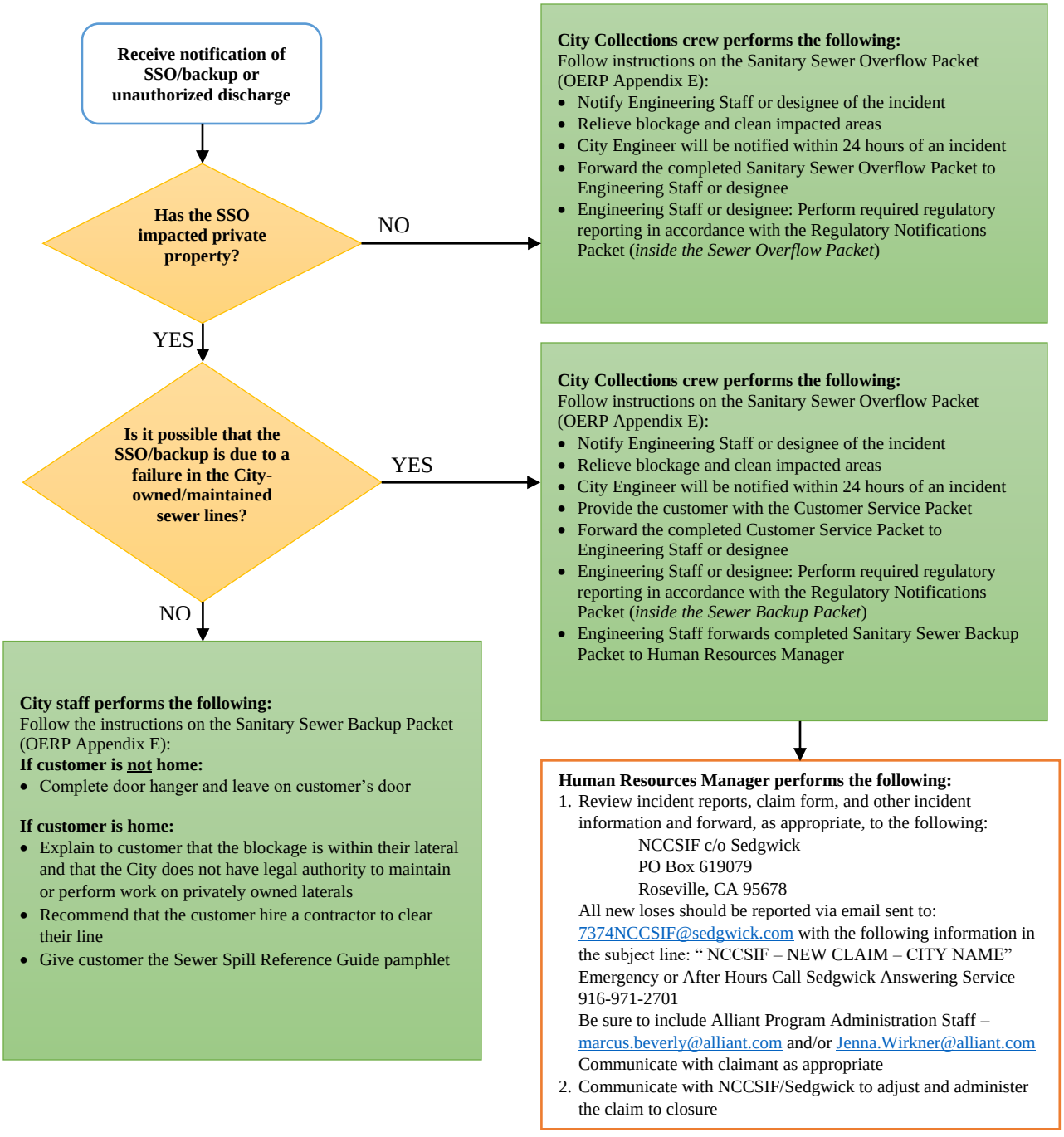
Appendix E includes a handout for contractors with a flowchart of the above procedures.

6.3 Sanitary Sewer Overflow/Backup Response Procedures

6.3.1 Sanitary Sewer Overflow/Backup Response Summary

The City will respond to SSOs as soon as feasible following notification of an SSO/backup or unauthorized discharge. Figure 6, Overview of Sanitary Sewer Overflow/Backup Response, is an overview of the response activities.

Figure 6. Overview of Sanitary Sewer Overflow/Backup Response



6.3.2 First Responder Priorities

The following are the first responder's priorities:

- Follow safe work practices
- Respond promptly with the appropriate and necessary equipment
- Contain the spill wherever feasible
- Restore flow as soon as practicable
- Minimize public access to and/or contact with the spilled sewage
- Promptly notify the City Engineer in the event of a major SSO
- Return the spilled sewage to the sewer system
- Restore the area to its original condition (or as close as possible)
- Photograph and document areas affected and unaffected by the spill

6.3.3 Safety

The first responder is responsible for following safety procedures at all times. Special safety precautions are necessary when performing sewer work. There may be times when City personnel responding to a sewer system event are not familiar with potential safety hazards particular to sewer work. In such cases, it is appropriate to take the time to discuss safety issues, consider the order of work, and check safety equipment before starting the job. This includes use of gas monitoring detectors for air quality in manholes and traffic controls on the site.

6.3.4 Initial Response

The first responder must respond to the reporting party/problem site and visually check for potential sewer stoppages or overflows.

The first responder will perform the following tasks:

- Note arrival time at the site of the overflow/backup.
- Verify the existence of a public sewer system spill or backup.
- Determine if the overflow or blockage is from a public or private sewer.
- Identify and assess the affected area and extent of the spill.
- Contact caller if time permits.
- Document conditions upon arrival with photographs.
- Decide whether to proceed with clearing the blockage to restore the flow or initiate containment measures. Guidance for this decision is as follows:
  - Small spills (i.e., spills that are easily contained) – proceed with clearing the blockage.
  - Moderate or large spill where containment is anticipated to be simple – proceed with the containment measures.

- Moderate or large spills where containment may be difficult – proceed with clearing the blockage; however, whenever deemed necessary, call for additional assistance and implement containment measures.

- Take steps to contain the SSO. For detailed procedures, refer to Appendix E.

6.3.5 Containment and Prevention Program

The City's OERP identifies the steps to take for emergency response per the ECO:LOGIC audit. The City will conduct periodic exercises to ensure that all aspects of the OERP, including training and emergency equipment, are functional at all times.

The City will update the OERP as necessary based on the results of the biennial audit discussed in Element 10, Sewer System Management Plan Program Audits.

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Section 7 Element 7 Fats, Oils, and Grease Control Program

This Element of the SSMP discusses the City's FOG control measures, including the Dixon Municipal Code related to FOG, the City's Wastewater Discharge Permit, and processes for the identification of problem areas, focused cleaning, and source control.

7.1 Regulatory Requirements for the Fats, Oils, and Grease Control Plan Element

Element 7, Goals, Fats, Oils, and Grease Control Program, of the WDRs states the following:

> *Section D.13 (vii) – FOG Control Program: Each Enrollee shall evaluate its service area to determine whether a FOG control program is needed. If an Enrollee determines that a FOG program is not needed, the Enrollee must provide justification for why it is not needed. If FOG is found to be a problem, the Enrollee must prepare and implement a FOG source control program to reduce the amount of these substances discharged to the sanitary sewer system. This plan shall include the following as appropriate:*
>
> *(a) An implementation plan and schedule for a public education outreach program that promotes proper disposal of FOG;*
>
> *(b) A plan and schedule for the disposal of FOG generated within the sanitary sewer system service area. This may include a list of acceptable disposal facilities and/or additional facilities needed to adequately dispose of FOG generated within a sanitary sewer system service area;*
>
> *(c) The legal authority to prohibit discharges to the system and identify measures to prevent SSOs and blockages caused by FOG;*
>
> *(d) Requirements to install grease removal devices (such as traps or interceptors), design standards for the removal devices, maintenance requirements, BMP requirements, record keeping and reporting requirements;*
>
> *(e) Authority to inspect grease producing facilities, enforcement authorities, and whether the Enrollee has sufficient staff to inspect and enforce the FOG ordinance;*
>
> *(f) An identification of sanitary sewer system sections subject to FOG blockages and establishment of a cleaning maintenance schedule for each section; and*
>
> *(g) Development and implementation of source control measures for all sources of FOG discharged to the sanitary sewer system for each section identified in (f) above.*

7.2 Public Education and Outreach Program

The City has developed a FOG outreach program. The program includes public education and outreach during the Wastewater Discharge Permit process and inspection process and through public notification during CCTV inspections, as well as door hangers and additional materials available on the City's Web site.

7.3 Fats, Oils, and Grease Source Control

The City's Wastewater Discharge Permit is required for all food stores, eating places, and food preparers who bake or cook on the premises. This permit formally outlines the City's requirements of pretreatment systems maintenance procedures and maintenance records and proper handling of pretreatment system waste. The City maintains a database of FOG generators in its FOG BMP Management Software and is regularly updated by City Engineering Staff.

The City's Community Development Department, Building Division, provides guidance to determine the proper pretreatment system to comply with the Uniform Building Code. The Wastewater Discharge Permit requires each establishment to self-monitor, sample, and measure flow; document results; and notify the City in the event of a violation to prevent illegal discharge of FOG into the sanitary sewer system.

The process of managing FOG in the collection system remains unchanged since the 2017 update to the SSMP. The City recognizes the need for an accepted policy on FOG management within the City and has developed a working draft provided in Appendix F. The City has a goal to complete and accept a FOG policy within the effective period of this SSMP update.

7.4 Disposal of Fats, Oils, and Grease

FOG discharge into the sanitary sewer system is prohibited. Users are required to properly dispose of pretreatment waste and cooking grease. Currently, the City's wastewater treatment facility does not accept trucked or hauled waste. The Wastewater Discharge Permit contains the following policies to ensure proper waste disposal:

- Facilities with a grease interceptor shall keep receipts of pumping company names and service dates.
- Facilities with grease traps that use service companies shall keep records of company names and service dates.
- Facilities with grease traps that service in-house must keep records of service dates and describe and demonstrate pretreatment waste handling procedure.
- Facilities with fryers shall keep cooking grease (yellow grease) storage containers on site and receipts of rendering company service dates. (There may be other venues for handling the grease, such as transfer to another restaurant or release to a private party for personal use, such as making biodiesel fuel.) At a minimum, the facility must be able to show storage containers and explain yellow grease handling procedure. The inspector may require a facility without a fryer to off-haul used cooking grease if poor work practices are identified (e.g., FOG liquid in trash or accumulated in the sewer system).

7.5 Legal Authority for Fats, Oils, and Grease Program

Dixon Municipal Code, Section 14.01.230, Prohibited Discharge Standards, Part B, states that "no user shall introduce or cause to be introduced into the POTW the following pollutants, substances, or wastewater . . . 17. Fats, oils, or greases of animal or vegetable origin in concentrations greater than 100 milligrams per liter (100 mg/L), except as specifically authorized by the Director in the wastewater discharge permit." For further detail on the City's Legal Authority, refer to Element 3.

7.6 Requirements to Install Grease Trap Removal Devices

Dixon Municipal Code, Section 14.01.310(C), states that grease, oil, and sand interceptors shall be provided when, in the opinion of the Director, they are necessary to comply with local limits for the proper handling of wastewater containing excessive amounts of grease and oil or sand except that such interceptors shall not be required for residential users. All interceptor units shall be of type and capacity approved by the Director and shall be easily accessible for cleaning and inspection. Such interceptors shall be inspected, cleaned, and repaired regularly, as needed, by the user at their expense.

7.7 Authority to Inspect Grease Producing Facilities

Dixon Municipal Code, Chapter 14.01, Sewer, Article VIII, Administrative Enforcement Remedies, gives the Director authority to serve a written notice of violation to any user who has violated, or continues to violate, any provision of Chapter 14.01. Article XI, Judicial Enforcement Remedies, and Article X, Supplemental Enforcement Action, further outline additional measures the Director may take in the form of legal action and financial assurance.

Attachment B of the Wastewater Discharge Permit, paragraph 10, Inspection and Monitoring, states that a "user shall allow a City of Dixon inspector exhibiting proper credential and identification, to enter upon the premises upon requires and without unreasonable delay, for the purpose of inspection and sampling." Reasonable times for inspection may include times that are unannounced and any time during which the user's activities may result in a process waste discharge to the sanitary sewer system.

7.8 Identification of Grease Problem Areas and Sewer Cleaning

A FOG problem area contains one or more line blockage caused by the accumulation of FOG in a line. The City has identified several FOG problem areas in the City. FOG problem areas are mainly in trunk line segments in commercial districts that serve a concentration of food facilities and multi-family dwelling complexes. City staff hydro-flushes, inspects, and de-greases the identified "hotspot" areas in the City on a monthly basis to prevent backups or service interruptions to customers. Grease problem areas are listed in Appendix G.

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Section 8 Element 8 System Evaluation and Capacity Assurance Plan

8.1 Regulatory Requirements for the System Evaluation and Capacity Assurance Plan Element

Element 8, Goals, System Evaluation and Capacity Assurance Plan, of the WDRs states the following:

> *Section D.13 (viii) – Sewer Evaluation and Capacity Assurance Plan: The Enrollee shall prepare and implement a capital improvement plan (CIP) that will provide hydraulic capacity of key sanitary sewer system elements for dry weather peak flow conditions, as well as the appropriate design storm or wet weather event. At a minimum, the plan must include:*
>
> *(a) Evaluation: Actions needed to evaluate those portions of the sanitary sewer system that are experiencing or contributing to an SSO discharge caused by hydraulic deficiency. The evaluation must provide estimates of peak flows (including flows from SSOs that escape from the system) associated with conditions similar to those causing overflow events, estimates of the capacity of key system components, hydraulic deficiencies (including components of the system with limiting capacity) and the major sources that contribute to the peak flows associated with overflow events;*
>
> *(b) Design Criteria: Where design criteria do not exist or are deficient, undertake the evaluation identified in (a) above to establish appropriate design criteria; and*
>
> *(c) Capacity Enhancement Measures: The steps needed to establish a short- and long- term CIP to address identified hydraulic deficiencies, including prioritization, alternatives analysis, and schedules. The CIP may include increases in pipe size, I/I reduction programs, increases and redundancy in pumping capacity, and storage facilities. The CIP shall include an implementation schedule and shall identify sources of funding.*
>
> *(d) Schedule: The Enrollee shall develop a schedule of completion dates for all portions of the capital improvement program developed in (a)-(c) above. This schedule shall be reviewed and updated consistent with the SSMP review and update requirements as described in Section D.14.*

8.2 System Evaluation and Capacity Assurance Plan Discussion

8.2.1 Evaluation

The City currently maintains and updates an ongoing System Evaluation and Capacity Assurance Plan to ensure current and future conditions are meeting level of service standards. In compliance with Section 8 of the WDRs, maintaining and updating the System Evaluation and Capacity Assurance Plan addresses the following objectives: evaluate hydraulic deficiencies, establish and implement design criteria (i.e., design storm), establish short-term and long-term capital improvement projects to address system deficiencies, and develop a schedule of completion dates for the planned capital improvement projects.

The program incorporates the following components:

- Collection system condition evaluation

  The City has an ongoing condition assessment program in which sewer mains and manholes are inspected on a regular schedule, with a complete system inspection being completed every 5 years (i.e., approximately 20 percent of system's mains and manholes inspected each year). The City's Collections System Maintenance and Operations Division staff owns and operates its own CCTV truck, which is used to complete sewer main inspections and document observed defects according to the NASSCO standards for rating and ranking system. NASSCO inspection data is recorded and tracked via Granite XP software integrated into GIS. Before each CCTV inspection, sewer mains are cleaned via hydro-flushing.

  As part of the collection system evaluation program, the City's Collections System Maintenance and Operations Division staff also visually inspects and assesses the condition of all manholes when manholes are opened to complete CCTV inspections. Staff inspects and documents each manhole's cover, frame, barrel, shelf, and channels. The City's Collections System Maintenance and Operations Division staff also documents any evidence of inflow and infiltration.

- Hydraulic modeling

  The hydraulic model of the existing collection system was assessed to determine the capacity of the existing trunk network, identify hydraulic deficiencies, and establish capacity improvement projects for the sewer system, if necessary, to accommodate flow under existing peak wet weather flow conditions. During updates and before use of the model, physical data of the collection system should be verified or updated to match existing conditions. Examples of data used in the sewer model includes but are not limited to flow line elevation, diameter, material and Manning's n-value for each pipe segment, invert and rim elevation of each manhole or sewer structure, and verification model structures that tie into the benchmark system 1988 North American Vertical Datum (NAVD88). Additionally, any collection system capital improvement projects that have been completed since previous model use (e.g., replacements or additions of pipes and manholes) should be updated similarly in the model.

  After the physical data is inputted into the computer model, sewer flow data will be inputted for the existing and General Plan buildout conditions. Sewer flow data will use existing land use and zoning and assign calculated wastewater generation factors to each land use category. The model will then be calibrated to reproduce existing flow conditions currently experienced in the field via flow metering at key points in the system. City crews plan to collect flow-monitoring data during periods with the highest groundwater so that infiltration and inflow can be accurately measured. These high groundwater periods are typically in February through April.

After calibrating the model, the City will use the model runs to evaluate the hydraulic capacity of the existing system and identify areas that may have hydraulic deficiencies. Similar simulations will be run for buildout scenarios to identify areas that may be deficient to meet future growth and development. Identified system deficiencies will culminate in capital improvement projects to replace or upsize infrastructure to ensure level of service requirements are met and to avoid SSOs.

- SSO tracking
  As part of Element 9, Monitoring, Measurements, and Program Modifications, the City tracks SSOs and their causes, including capacity-related overflows. Data associated with the capacity-related SSOs is useful in conjunction with hydraulic modeling in identifying hydraulic deficiencies in the collection system and creating capital improvement projects.

8.2.2 Capital Improvement Projects

Capital improvement projects are planned during updates to the Sewer Collection System Master Plan, which on the basis of the hydraulic modeling results, list projects that address both near-term and long-term/buildout collection system capacity issues. Currently, the Sewer Collection System Master Plan CIP has approximately $0.55 million allocated to address near-term capacity deficiencies and an additional $1.4 million allocated to address future capacity issues as City growth approaches buildout. The Sewer Collection System Master Plan CIP also specifies projects to expand the collection system's service area.

8.2.3 Design Criteria

Sanitary sewer design criteria currently exist in the City Standards, the latest version of which was adopted by the City Council in March 2022. Section 6, Sanitary Sewer Design, of the City Standards contains design criteria to ensure that all new connections to the existing system have adequate capacity. Section 6 is included in Appendix D (Design and Performance).

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Section 9 Element 9 Monitoring, Measurements, and Program Modifications

This Element of the SSMP outlines the process that the City will follow to evaluate the effectiveness of the SSMP and to identify updates that may be needed for a more effective program.

9.1 Regulatory Requirements for the Monitoring, Measurements, and Program Modifications Element

Element 9, Goals, Monitoring, Measurements, and Program Modifications, of the WDRs states the following:

> *Section D.13 (ix) – Monitoring, Measurement, and Program Modifications: The Enrollee shall:*
>
> *(a) Maintain relevant information that can be used to establish and prioritize appropriate SSMP activities;*
>
> *(b) Monitor the implementation and, where appropriate, measure the effectiveness of each element of the SSMP;*
>
> *(c) Assess the success of the preventative maintenance program;*
>
> *(d) Update program elements, as appropriate, based on monitoring or performance evaluations; and*
>
> *(e) Identify and illustrate SSO trends including frequency, location, and volume.*

9.2 Monitoring, Measurement, and Program Modifications Discussion

The City will maintain information that can be used in the SSMP performance monitoring through the CIWQS database administered by the Regional Water Quality Control Board to track information under the statewide general SSO order. All CIWQS information is available through the Public Reports portal: http://www.waterboards.ca.gov/water_issues/programs/ciwqs/publicreports.shtml.

The City also uses various tracking systems to measure and monitor activities and performance measures. These tracking systems include the following:

- Microsoft Excel for tracking maintenance activities
- Microsoft Outlook for scheduling maintenance activities
- Microsoft Maps for mapping locations of spills

The City is currently transitioning the previously mentioned tracking systems into CityWorks, a GIS-based asset management software that will centrally track maintenance scheduling, maintenance activities, and allow geo-location tracking of SSOs and hotspots.

The City will evaluate the performance of its sanitary sewer system using the performance measures in Section 9.3, Performance Measures. The City will also update the SSMP based on the results of the biennial audit discussed in Section 10, Element 10 Sewer System Management Plan Program Audits.

9.3 Performance Measures

The City's intends to use the following indicators to measure the performance of its sanitary sewer system and the effectiveness of its SSMP:

- Total number of SSO locations (for City system)
- Cause of each SSO (roots, grease, debris, pipe failure, capacity, lift station failure, and/or other)
- Volume of spilled wastewater recovered (gallons per year (gal/yr)) compared with total volume of wastewater spilled (gal/yr)
- Volume of spilled sewage discharged to surface water (gal/yr) compared with total volume of wastewater spilled (gal/yr)

The City has historical performance data from 1998 to present. Table 1, Sanitary Sewer Overflow Data – 2005 to 2021, summarizes the SSO data for 2005–2021. Appendix H contains further detail of the historical data, including information on general sewer callouts, response time, and SSOs from private laterals.

Table 1. Sanitary Sewer Overflow Data – 2005 to 2021

		2005	2006	2007–2013	2014	2015–2016	2017–2021
Number of SSOs		3	1	0	1	0	0
SSO Causes	Roots	0	0	0	0	0	0
	Grease	2	0	0	1	0	0
	Debris	1	1	0	0	0	0
	Pipe Failure	0	0	0	0	0	0
	Lift Station Failure	0	0	0	0	0	0
	Vandalism	0	0	0	0	0	0
Volume of Spilled Sewage Contained/Recovered (gallons)		220	5	0	0	0	0
Portion of Spilled Sewage Contained/Recovered		100%	100%	NA	NA	NA	NA
Volume of Spilled Sewage Entering Storm Drains and/or Surface Waters (gallons)		0%	0%	NA	NA	NA	NA

Notes: NA = not applicable; SSO = sanitary sewer overflow

The City will continue to track the data shown in Table 1 and Appendix H. Tracking such data will allow the City to identify and illustrate SSO trends, including frequency, location, and volume.

Additional measures to improve performance include implementation of the programs mentioned in previous Elements of the SSMP (Table 2, Collection System Management Enhancements).

Table 2. Collection System Management Enhancements

Future Activities	Completion Dates
Schedule and document routine inspections of the City's Wastewater Discharge Permit holders	Ongoing
Complete system-wide CCTV and manhole inspections on a 5-year cycle	Ongoing
Update and implement a 5-year CIP	Annually
Develop and deploy an Integrated CMMS, GIS, and FOG BMP software for collection system management of scheduled maintenance, reactive maintenance, and FOG program inspections.	"January 2027"
Update and implement a documentable training program of Collections System Staff.	"July 2024"
Implement the FOG Public Outreach Program	"June 2023"
Finalize and Ratify FOG Management Policy	"Dec 2023"

9.4 Performance Monitoring and Program Changes

City staff will periodically update the SSMP with information such as contact numbers and the SSO response chain of communication. The City will annually evaluate the performance of the wastewater collection system and programs and will review the successes and needed improvements of the SSMP as part of the audit as described in Element 10, Sewer System Management Plan Program Audits. A comprehensive SSMP update will occur every 5 years as required by the State Water Resources Control Board.

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Section 10 Element 10 Sewer System Management Plan Program Audits

This Element of the SSMP presents the process that the City will follow to audit its SSMP program.

10.1 Regulatory Requirements for the Sewer System Management Plan Program Audits Element

Element 10, Goals, SSMP Program Audits, of the WDRs states the following:

> *Section D.13 (x) – SSMP Program Audits: As part of the SSMP, the Enrollee shall conduct periodic internal audits, appropriate to the size of the system and the number of SSOs. At a minimum, these audits must occur every two years and a report must be prepared and kept on file. This audit shall focus on evaluating the effectiveness of the SSMP and the Enrollee's compliance with the SSMP requirements identified in this subsection (D.13), including identification of any deficiencies in the SSMP and steps to correct them.*

10.2 Sewer System Management Plan Audits

The City's collection system serves more than 10,000 people; therefore, the City will conduct an audit of its SSMP every two years. The Engineering staff will complete audits and may include members from other areas of the City, outside agencies, and/or consultants. The scope of the audit will cover each SSMP Element.

The audit will qualitatively review the effectiveness of implementing each SSMP Element. An audit checklist is included in Appendix I. The checklist is not meant to be a complete audit. The results of the audit, including identification of any deficiencies and steps taken (or planned to be taken) to correct them, will be included in an audit report that shall be kept on file.

The City will update its SSMP per the required update due date cycles established by the Water Quality Control Board (Table 3, Sewer System Management Plan Update and Audit Due Dates). According to this timetable, the City will complete the next update to this document on or before August 2025. The City will determine the need to update its SSMP more frequently if warranted by the results of the audits and/or the performance of its sanitary sewer system using information from the Monitoring and Measuring Program.

The City Council will approve any significant changes to the SSMP. The City Engineer/Director of Utilities has the authority for approval of minor changes, such as employee names, contact information, updated appendix documents, or limited procedural changes.

Table 3. Sewer System Management Plan Update and Audit Due Dates

Sewer System Management Plan & Subsequent Update Due Dates					
System Name	WDID Number	Original Plan Required Due Date	Required Plan Update Due Date	Required Plan Update Due Date	Required Plan Update Due Date*
Dixon CS	5SSO10931	8/2/2009	8/2/2014	8/2/2019	8/2/2025

Audit Due Dates								
System Name	WDID Number	Original Required Plan Audit Due Date	Required Plan Audit Due Date	Required Plan Audit Due Date	Required Plan Audit Due Date	Required Plan Audit Due Date	Required Plan Audit Due Date	End of Required 3-Year Audit Period**
Dixon CS	5SSO10931	8/2/2011	8/2/2013	8/2/2015	8/2/2017	8/2/2019	8/2/2021	8/2/2024

Section 11 Element 11 Communication Plan

This Element of the SSMP outlines the process involved in communicating with the public on the development, implementation, and performance of the SSMP.

11.1 Regulatory Requirements for the Communication Plan

Element 11, Goals, of the WDRs states the following:

> *Section D.13 (xi) – Communication Program: The Enrollee shall communicate on a regular basis with the public on the development, implementation, and performance of its SSMP. The communication system shall provide the public the opportunity to provide input to the Enrollee as the program is developed and implemented. The Enrollee shall also create a plan of communication with systems that are tributary and/or satellite to the Enrollee's sanitary sewer system.*

Note: No tributary systems to the City's sanitary sewer system exist.

11.2 Communication Plan

The City maintains open communication with the public using several outlets:

- **City Website –** The City maintains a website with a Sewer System Management Plan webpage that contains a brief narrative on and links to the SSMP, as well as contact information for public input. An image of the SSMP webpage is presented in Appendix J. The webpage URL is https://www.cityofdixon.us/SSMP.
- **City Council Meetings –** City Council meetings are public meetings that are televised on a local broadcast station, streamed live on the City's website, and recorded for future viewing. Significant changes to the SSMP will result in a council agenda action item presented at a regularly scheduled City Council meeting.
- **Wastewater Committee Meetings –** The City formed a Wastewater Committee in 2007 to discuss wastewater issues and provide recommendations to the City Council. The committee provided input during the development of the original SSMP. The committee meetings were noticed public meetings open to public attendance and input. The City Council disbanded the committee in March 2013 by Resolution 13-038.
- **Utility Billing –** The City uses inserts in the utility bills, printed in both English and Spanish, to notify ratepayers of applicable information.
- **Notices in Public Spaces –** Staff posts notices at City Hall and the City Library, similar to the notice postings for public meetings.
- **Social Media –** The City posts notices on the City's Facebook page, as a "newsflash" on the City's website, and through the City's Twitter account.

Opportunities for public input in the development and implementation of the SSMP have occurred numerous times since 2007 at public meetings of both the City's Wastewater Committee and City Council. On October 23, 2007, a presentation on the topic of the SSMP was given to the City

Council. At that same meeting, the City Council passed a resolution approving the goals, organization structure, and schedule of the SSMP. In conjunction with the 2023 update, the City Council reviewed and approved this SSMP on April 18, 2023.

The City will also use the following sources of communication to disseminate SSMP information:

- Utility bill insert mailers
- Electronic media and social media, including the City's website and Facebook and Twitter accounts

Internally, the City will communicate and coordinate with various departments for the various SSMP Elements as required and as shown in Table 4, Sewer System Management Plan Roles and Responsibilities.

Table 4. Sewer System Management Plan Roles and Responsibilities

Element	Department
1. Goals	City Engineer/Director of Utilities
2. Organization	City Engineer/Director of Utilities, City Manager (including City Clerk)
3. Legal Authority	City Engineer/Director of Utilities, City Manager (including City Clerk)
4. Operation and Maintenance Program	City Engineer/Director of Utilities
5. Design and Performance Provisions	City Engineer/Director of Utilities, Community Development (Building Division)
6. Overflow Emergency Response Plan	City Engineer/Director of Utilities, City Manager (Human Resources)
7. FOG Control Program	City Engineer/Director of Utilities, Community Development (Building Division)
8. System Evaluation and Capacity Assurance Plan	City Engineer/Director of Utilities
9. Monitoring, Measurement and Program Modifications	City Engineer/Director of Utilities
10. SSMP Program Audits	City Engineer/Director of Utilities
11. Communication Plan	City Engineer/Director of Utilities, Administrative Services, City Manager (City Clerk), Public Works

Notes: FOG = fats, oils, and grease; SSMP = Sewer System Management Plan

Note: The City's Wastewater Treatment and Collections System Maintenance and Operations Divisions are part of and supervised by the City Engineer/Director of Utilities.

Appendix A. Resolution 07-179 and City Council Report

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Appendix B. Dixon Municipal Code, Chapter 14.01, Sewers

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Appendix C. General Provisions of the City of Dixon Engineering Standards and Specifications

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Appendix D. City of Dixon Engineering Standards and Specifications

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Appendix E. Overflow Emergency Response Plan

Sanitary Sewer Backup Procedures

Sanitary Sewer Overflow Response Packet

Customer Response Handout

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Appendix F. City of Dixon DRAFT FOG Program

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Appendix G. Grease Problem Areas

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Appendix H. Historical Data, including Information on General Sewer Callouts, Response Time, and SSOs from Private Laterals

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Appendix I. Dixon Sewer System Management Plan
Annual Audit Report

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Appendix J. City of Dixon Webpage, Sewer System Management Plan

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Appendix K. Sample Subdivision Improvement Agreement

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