RESOLUTION NO. SD 22-006
OF THE BOARD OF DIRECTORS OF
NEVADA COUNTY SANITATION DISTRICT NO. 1

RESOLUTION OF APPROVAL OF THE SEWER SYSTEM MANAGEMENT PLAN (SSMP) UPDATE FOR THE LAKE WILDWOOD, LAKE OF THE PINES, NORTH SAN JUAN, PENN VALLEY, MOUNTAIN LAKE ESTATES AND CASCADE SHORES ZONES IN NEVADA COUNTY SANITATION DISTRICT NO. 1

WHEREAS, the State Water Resources Control Board (State) adopted General Waste Discharge Requirements (WDRs) for all publicly owned sanitary sewer collection systems in California with more than one mile of sewer pipe; and

WHEREAS, the WDRs require the development of a Sewer System Management Plan (SSMP) to reduce the occurrence of sanitary system overflows; and

WHEREAS, the District has prepared a Sewer System Management Plan and Schedule outlining the required work products and timing to comply with the WDRs; and

WHEREAS, the District has completed the required elements of the SSMP in accordance with the WDRs with Resolution No.SD12-23 on the 13th day of November 2012; and

WHEREAS, the District has made updates to the SSMP in 2022; and

WHEREAS, the WDRs require the SSMP to be approved by the governing agency.

NOW, THEREFORE, BE IT HEREBY RESOLVED that the Board of Directors of Nevada County Sanitation District No. 1:

1. Adopts the Sewer System Management Plan as written by staff.

PASSED AND ADOPTED at a regular meeting of the Board of Directors of the Nevada County Sanitation District No. 1, held on the 6th day of December, 2022, by the following vote:

Ayes: Directors Heidi Hall, Edward Scofield, Dan Miller, Susan K. Hoek and Hardy Bullock.
Noes: None.
Absent: None.
Abstain: None.

ATTEST:

JULIE PATTERSON HUNTER
Clerk of the Board of Directors

By: _____

_____
Susan K. Hoek, Chair

12/6/22 cc: NCSD#1*
AC*

Sewer System Management Plan

SSMP – 2022

Nevada County Sanitation District No. 1

Zone 1 Lake Wildwood

Zone 2 Lake of the Pines

Zone 4 North San Juan

Zone 5 Gold Creek

Zone 6 Penn Valley

Zone 7 Mountain Lakes Estates

Zone 8 Cascade Shores

Zone 9 Eden Ranch

Zone 10 Darkhorse

Zone 11 Higgins Village

Zone 12 Valley Oak Court

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Introduction

This chapter provides a brief overview of the Sanitary Sewer Management Plan (SSMP) requirements as defined in the State Water Resources Control Board (SWRCB) Order No. 2006-0003-DWQ Statewide General Waste Discharge Requirements (GWDR) for Sanitary Sewer Systems. Information found within this Management Plan is specific to Nevada County Sanitation District No. 1 (District) and the specific collection and treatment zones that make up the District. The GWDR requires any public agency that owns or operates a sanitary sewer system (hereafter "sewer system" or "collection system") more than one mile in length that conveys treated or partially treated wastewater to a Publicly Owned Treatment Works (POTW) in the State of California, comply with the requirements of the GWDR in order to reduce the number of Sanitary Sewer Overflows (SSOs).

A copy of the order, its Monitoring and Reporting Program and a fact sheet are contained in Appendix A. This new requirement affects all public owned sanitary sewer systems greater than one mile in length. It requires each of the sewer systems to do the following:

- Begin reporting all Sewer System Overflows (SSOs) on a State maintained web site (prior to this requirement SSOs were reported, in writing, to individual Regional Water Quality Control Boards).

- Develop and implement a Sewer System Management Plan (SSMP) approved by the elected governing body.

This document is intended to meet the second requirement of developing a SSMP for each of the ten District maintained public sewer systems. Collection systems less than one mile in length are not required to be included in this SSMP, but for continuity District zones with collections systems less than one mile long are included in this document. This SSMP is available to the public at: Document Library | Nevada County, CA (nevadacountyca.gov)

Service Description:

The District administers, operates, and maintains wastewater collection systems, treatment, and disposal facilities in compliance with Nevada County Department of Environmental Health, California Department of Health Services, California Regional Water Quality Control Board- Central Valley Region, and Federal Environmental Protection Agency rules, regulations, certifications, and permits in the following areas of Western Nevada County:

- Lake Wildwood, Zone 1, a gravity collection system

- Lake of the Pines, Zone 2, a gravity collection system. The Darkhorse area discharges into the Lake of the Pines collections system but is discussed as a separate area because it is a grinder pump force main system with different maintenance requirements.

- North San Juan, Zone 4, a gravity collection system

- Gold Creek, Zone 5, a gravity collection system
- Penn Valley, Zone 6, a Septic Tank Effluent Pump (STEP) force main collection system
- Mountain Lakes Estates, Zone 7, a Septic Tank Effluent Pump (STEP) force main collection system
- Cascade Shores, Zone 8, a gravity collection system
- Eden Ranch, Zone 9, a Septic Tank Effluent Gravity (STEG) gravity collection system
- Darkhorse, Zone 10, a grinder pump forced main system. This system discharges into the Lake of the Pines collection system.
- Higgins Village, Zone 11, a Septic Tank Effluent Pump (STEP) force main collection system
- Valley Oak Court, Zone 12, a Septic Tank Effluent Pump (STEP) force main collection system

The District accomplishes the above by providing:

- Wastewater collection system maintenance staff with background and/or training in plumbing, pipeline maintenance and repair, and pump station maintenance and repair.
- State certified wastewater treatment operations staff with background and/or training in treatment and disposal facilities operation, maintenance, repair, and laboratory testing in State certified laboratories.
- Wastewater electrical/mechanical staff with background and/or training in motors, controls, pumps, and generators that provides support to both wastewater collections system maintenance and treatment operations.
- Appropriate training, tools, equipment, and vehicles.
- Administrative, management, financial, clerical, and engineering support staff to facilitate and support the wastewater collection system maintenance, treatment and disposal facilities operation, and electrical/mechanical functions.

Sanitation District Mission Statement:

To administer, operate, and maintain wastewater collection systems, treatment, and disposal facilities in a safe, efficient, and cost-effective manner for Nevada County Sanitation District No. 1 customers in compliance with local, State, and Federal requirements.

Sewer System Management Plan Requirements

The District submitted a Notice of Intent for coverage under the GWDR and has developed this SSMP per the requirements of the GWDR. This SSMP identifies how the County complies or implements the

required elements of the SSMP. There are eleven required elements for an SSMP. The numbering and titles of the Chapters are shown as they appear in the GWDR.

I. Goals

II. Organization

III. Legal Authority

IV. Operations and Maintenance Program

V. Design and Performance Provisions

VI. Overflow Emergency Response Plan

VII. FOG Control Program

VIII. System Evaluation and Capacity Assurance Plan

IX. Monitoring, Measurement, and Plan Modifications

X. SSMP Program Audits

XI. Communication Program

SSMP FORMAT

The District SSMP is a living document. As monitoring and audits are completed in the future, existing sections of the SSMP will be updated. As noted above, the District maintains ten separate public sewer systems. Each Chapter of the SSMP will discuss the general requirements to comply or implement the required elements of the SSMP, then have sub sections which may discuss the implementation of the required elements specific to each zone. Each of these Chapters of the report will have the following sections:

- Chapter Requirements – lists code required elements of each chapter
- Introduction – In general describes how the District complies with the code required elements.
- Content Section – More detailed description of how District complies with code required elements.
- Content Section – If needed, more detailed description of how District complies with code required elements.
- Specific Requirements by Zone – may introduce the differences of each zone as they relate to the code required elements of each zone.

- Zone 1 Lake Wildwood – Content specific to Lake Wildwood as it relates to the required elements of a chapter.
- Zone 2 Lake of the Pines
- Zone 4 North San Juan
- Zone 5 Gold Creek
- Zone 6 Penn Valley
- Zone 7 Mountain Lakes Estates
- Zone 8 Cascade Shores
- Zone 9 Eden Ranch
- Zone 10 Darkhorse
- Zone 11 Higgins Village
- Zone 12 Valley Oak Court

The use of subsections with content specific to each zone, when required, will prevent the repetition that would result if ten individual collection zones each had a dedicated and separate SSMP.

Chapter I. Goals

Chapter Requirements

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.

Introduction

The standards for the operation and maintenance of District wastewater collection systems shall provide for proper operation and maintenance of all portions of the collection systems, to report overflows, and to respond effectively to any overflows that may occur.

Goals

The District has established the following SSMP goals for the ten public sewer systems that it maintains:

- Properly manage, operate, and maintain all portions of the District wastewater collection systems. Describe the maintenance plan to accomplish this goal and extend the useful life of the sewer system so as to protect the large investment in District infrastructure.
- Ensure adequate sewer capacity is available in all zones for wet weather flows and planned growth. Minimize inflow and infiltration (I&I) and provide adequate capacity to convey peak wastewater flows. Ensure that all new and rehabilitated sewers systems are designed and built to current standards.
- Minimize the frequency of sewer system overflows (SSOs). Mitigate the impacts that are associated with any SSO that may occur to protect public health and the environment.
- Meet all applicable regulatory notification and reporting requirements. Present the current emergency response plan to include new regulations for reporting.
- Describe the maintenance plan to reduce fats, oils, and grease (FOG) buildup in the sewers.
- Maintain the communication program with elected officials and the public (our customers) to provide the support needed for the above goals.

Specific Requirements by Zone

There are no specific requirements for each collection zone in this Chapter.

Chapter II. Organization

Chapter Requirements

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)).

Introduction

This section of the SSMP identifies District staff responsible for implementing the SSMP, responding to an SSO event, and meeting the SSO reporting requirements. This section also includes the designation of the Authorized Representative (LRO) to meet RWQBC requirements for completing and certifying spill reports through the CIWQUIS system.

The Wastewater Division is part of the Nevada County Public Works Department. The Wastewater Division is responsible for administration and operation of the Sanitation District and implementation of the SSMP. The Wastewater Service Workers are responsible for the daily maintenance and response to SSOs. After hours customer complaints (or spill reports) are received by the calling (answering) service, and they call either the Operator or Collections/Maintenance on-call person.

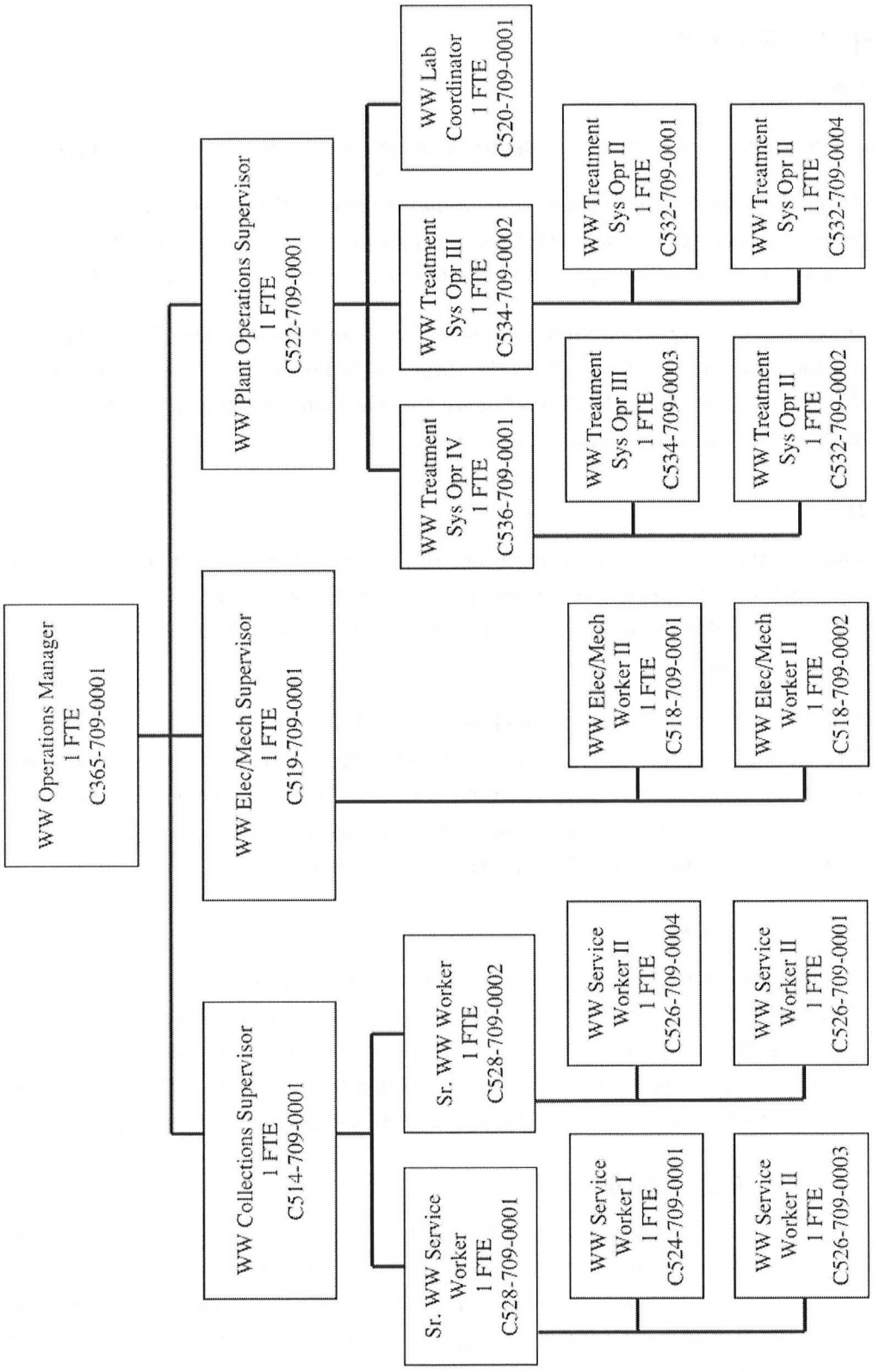
Authorized Representative

The District is responsible for implementing and maintaining all components of this SSMP and is authorized to submit SSO reports to the appropriate government agencies and CIWQS. The authorized representative for all wastewater collection system matters is the Collections Supervisor who is authorized to certify electronic spill reports submitted to the SWRCB. In the absence of the Collections Supervisor the Wastewater Operations Manager or Director of Public Works will serve as the LRO.

Organization Chart (Lines of Authority)

Implementation, management and updating of the SSMP involves the District management, collections department, and maintenance department. Figure 2-1 is a District organization chart showing all departments and those positions within each department that have SSMP responsibilities. Descriptions of general responsibilities for each of these positions are listed after the organization chart. Names and phone numbers of all District personnel is published quarterly with the on-call schedule.

Figure 2-1 Nevada County Sanitation District No. 1 Organizational Chart



Board of Directors – Establishes Policy.

- Director of Public Works - Under administrative direction of the Board of Directors, is in charge of the operations, functions, and administrative affairs of the District. Represents the Board's policies and programs with employees, community organizations and the general public.

- Wastewater Operations Manager – Plans, organizes, directs, and reviews the technical activities and operations of the Sanitation District. Can certify spill reports.

- Wastewater Collection Supervisor - Plans, organizes, schedules, assigns, and reviews the work of field crews in a variety of skilled and semi-skilled activities in general construction, repair, and maintenance of wastewater collection system facilities, and has primary responsibility for the operation of equipment. Can certify spill reports.

- Wastewater Service Worker (Collections System Operators) - Routinely monitor, maintain, adjust, and clean sewer pipes or lift stations in order to prevent spills, and to ensure the smooth operation of the collection and storage systems. Monitors reservoirs, tanks, and retention ponds. Responds to customer's problems/complaints, and auto dialer alarms.

- Plant Operations Supervisor - Organizes, directs, and coordinates the activities of the Operations Department including the operation of the District's laboratory. Coordinates operation, and regulatory activities with other divisions and departments; and provides staff assistance.

- Laboratory Coordinator - Performs routine lab testing (physical, biological, chemical, microbiological,) to meet federal compliance, environmental monitoring programs and facilities process control for environmental, watershed, water, solids, or wastewater.

- Electrical/Mechanical Supervisor and Electrical/Mechanical Workers – Performs electrical repair of pump stations and supports Collection System Workers on mechanical repair if needed

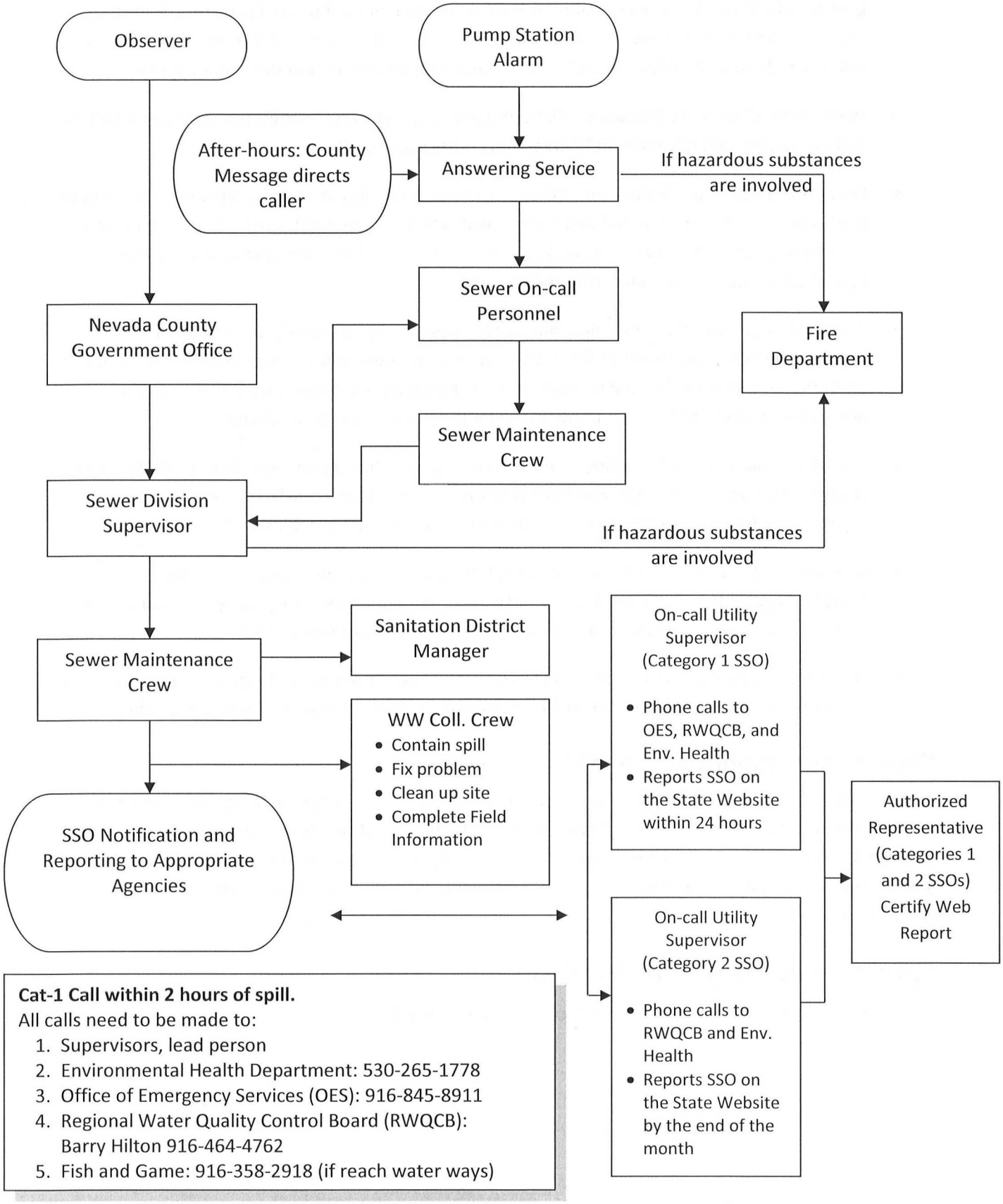
Chain of Communication for SSOs

When a Sewer System Overflow (SSO) occurs in one of the ten District maintained sewage collection systems, it is usually reported to the hot line number (530-265-1555) which is answered by District personnel during the day and call out answering service after business hours and weekends. The Chain of Communication and formal procedures used in reporting SSOs for District collection systems are shown in Figure 2-2.

Specific Requirements by Zone

There are no specific requirements for each collection zone in this Chapter.

2-2 SSO Response Chain of Communication



Cat-1 Call within 2 hours of spill.
All calls need to be made to:

1. Supervisors, lead person
2. Environmental Health Department: 530-265-1778
3. Office of Emergency Services (OES): 916-845-8911
4. Regional Water Quality Control Board (RWQCB): Barry Hilton 916-464-4762
5. Fish and Game: 916-358-2918 (if reach water ways)

Chapter Requirements

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, stormwater, 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.

Introduction

This component of the SSMP discusses the District's legal authority, including federal and state law as well as District board policies and administrative regulations. The District's ten wastewater collection and treatment systems are owned and operated by the Nevada County Sanitation District No. 1.

The District derives its legal authority from, and is regulated by, federal and state law and their administrative agencies. In exercising the authority granted there under, the District has adopted Board Policies and Administrative Regulations, commonly referred to the Sanitation Code, setting forth the terms and conditions of service.

History of Sanitation District

Nevada County Sanitation District No. 1 was formed on August 2, 1965, (Nevada County Board of Supervisor's Resolution (BOS Res. 65-135) to provide for construction, operation, and maintenance of the Glenbrook Sewer Assessment District. The City of Grass Valley operates, maintains, and administers the Glenbrook zone through an agreement with the District adopted on November 26, 1968, (Sanitation District Resolution SD Res. 68-4). This agreement was later amended by SD Res. 69-1 on March 18, 1969. The next zone, Lake Wildwood, was annexed into the District on June 23, 1970 (SD Res. 70-1), and was followed by the Lake of the Pines zone on June 13, 1972, (SD Res. 72-3). Over the years, nine more zones (Kingsbury Greens, North San Juan, Gold Creek, Penn Valley, Mountain Lakes Estates, Cascade Shores, Eden Ranch, Higgins Village, and Valley Oak Court) were annexed into the District. Kingsbury Greens was detached from the District in 1995.

An agreement dated March 1, 1972, (SD Res. 72-1) between the District and Nevada County directs County staff to provide operation, maintenance, and administration of all the District's facilities except

the Glenbrook zone. This original agreement was supplemented by two subsequent agreements adopted in 1973 (SD Res. 73-12) and 1988 (SD Res. 88-6).

On May 12, 1992, (SD Res. 92-7) the Sanitation District Advisory Committee was formed by the District Board providing a vehicle for District zone customers to formally communicate their recommendations to the District Staff and Board of Directors. The Committee's activities include the annual review and recommendation of the proposed District budgets and sewer charges to the Board.

Legal Authority

The government of the District operating zones is provided by the Nevada County Board of Supervisors acting in their capacity as the Board of Directors of the Sanitation District. The District's formation and operation is in accordance with California Health and Safety Code Sections 4700 through 4858. District's rate-setting capability is in accordance with Health and Safety Code Section 5470 through 5474.10 and subject to Proposition 218. District policies and procedures have been established by ordinances adopted by the District Board of Directors. These ordinances were compiled into a code format and adopted by the District Board (SD Ordinance 28 effective February 9, 1995); now known as the Nevada County Sanitation District No. 1 Sanitation Code. All subsequent ordinances have been incorporated into this Code. District authority is defined in section 1.2A of the Sanitation Code. A copy of the Sanitation Code is provided in Appendix B. All other District actions are adopted by resolution.

Federal and State Law

Federal and State Laws applicable to the District include but are not limited to:

- California Irrigation District Law (Water Code § 20500 et seq.) (grant of authority to perform "all acts necessary" in its operation and control of its sewer disposal system)
- Federal Water Pollution Control Act, commonly known as the Clean Water Act (33 U.S.C. § 1251 et seq.)
- California Porter Cologne Water Quality Act (California Water Code § 13000 et seq.)
- California Health & Safety Code § 25100 et seq.
- Resource Conservation and Recovery Act of 1976 (42 U.S.C. § 6901 et seq.)
- California Government Code §§ 54739, 54740 (grant of authority to regulate and/or prohibit the discharge of industrial waste into the District's collection system and treatment works)

Sanitation Code

The Sanitation Code specifically outlines design standards and prohibitions to improve the overall operation of the wastewater collection systems. The following rules are outlined in the sanitation codes

Prevention of Illicit Discharges

Illicit discharges into the District's sanitary sewer system are strictly prohibited under Code Section 3.2 (Prohibited Discharges). The code has a long list of prohibited discharges.

Proper Design and Construction of Sewers and Connections

Sewers and connections must be properly designed and constructed in accordance with Code Chapter 7 (Design and Construction Standards).

Lateral Maintenance Access

Access to all sewer laterals owned or maintained by the District is ensured as a requirement of service under sections 2.4 and 6.2. Section 2.4 (Connection Lateral Installation and Maintenance) provides definition of a lateral and the responsible party in terms of maintenance. Section 6.2 (Inspection of Existing User Laterals) reserves the right of the District to inspect laterals.

Limit Discharge of FOG and Other Debris

The discharge of fats, oils, grease, and other debris into the system that may cause blockages is limited under Code Section 3.2 (Prohibited Discharges) letters H (non-biodegradable oil), I (dispersed biodegradable oils or fats), U (waste or substance that may precipitate or solidify between 50- and 100-degrees F), W (garbage or waste that is not ground sufficiently), CC (Trucked or Hauled Pollutants, including waste from septic tanks).

Enforcement Measures

The District is empowered to enforce any violation of its sewer requirements and seek legal redress under Code Section 6.3 (Code Violation Correction and Penalty Provisions).

Specific Requirements by Zone

Throughout the Sanitation District Code there are specific rules and regulations that apply to each zone. Generally, those rules and regulations govern the costs, who may connect to the District collection systems, and specific design requirements for the different types of collections system found in each treatment zone. Residents within the District boundaries are required to connect; however, boundary locations were established according to geographic considerations which require a community collection system.

Zone 6 Penn Valley

Section 6.4 (Maintenance of Existing Facilities) defines how and when private laterals are to be tested to ensure the proper operation and maintenance of the private lateral upstream of the District owned septic tanks of the STEP system.

Chapter IV. Operations and Maintenance Program

Chapter Requirements

The SSMP must include those elements listed below that are appropriate and applicable to the 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 inspections 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.

Introduction

The District is responsible for the operation and maintenance of the ten collections systems. Each collection system was constructed by the developer of the area of which it serves. Many of the collection systems operate differently. The District has four different types of collection systems which all demand different operations and maintenance practices.

- The District has five treatment zones (including the two biggest) with traditional gravity sewers, manholes, and lift stations with discharge force mains. The zones with this type of system are Lake Wildwood, Lake of the Pines, North San Juan, Cascade Shores, and Gold Creek.
- Darkhorse area, which is part of Lake of the Pines zone, is a grinder pump force main system. The force main discharges to the Lake of the Pines gravity collection system.

- The District has four Septic Tank Effluent Pump (STEP) systems. STEP systems have a septic tank at each property and then a pump that discharges septic tank effluent into a force main collection system. The zones with this type of system are Penn Valley, Mountain Lakes Estates, Higgins Village, and Valley Oak Ct.

- Eden Ranch is a Septic Tank Effluent Gravity (STEG) system. A STEG system is similar to a STEP system except the effluent from the septic tank flows by gravity through the collection system.

Collection System Maps

The District maintains record drawings of each collection system. Full size collection system maps (1 in. equals 400 ft. scale) of each zone are posted on the wall in the treatment plant Operations Buildings and stored in the service trucks. There are also copies of 11x17 map books which have the same information. The Collections Supervisor has a set of record drawings in the take home truck in case there is an after-hours service call. The Collections Supervisor truck is left at Lake Wildwood WWTP during vacations. The sewer maps identify sewer mains, manholes, lateral stubs, and lift stations.

There are also GIS plans for each zone that are in DRAFT form and are being redlined to match field as-built conditions.

Future Plans

During fiscal year 22/23 the District will complete the red line additions for all zones infrastructure GIS mapping. Currently maintenance of the District larger collection systems is documented by highlighting recently cleaned sewers and noting the day of service on full size copies of the sewer system maps. Completion of the as-built data, incorporating that data into the GIS record drawings, and confirmation of the data will allow for the district to release the final GIS drawings for public review by the end of fiscal year 23/24.

Preventive Maintenance Program

The District's preventative maintenance (PM) program includes all the maintenance requirements of the sewer lift stations and collection systems.

Lift Stations

Lift stations use pumps to lift the collected sewage from low spots in the collection system to a higher elevation so that wastewater can continue to flow by gravity to the treatment plant. If there is an electrical or mechanical failure in a lift station, it can cause an SSO. Lift stations are monitored by auto-dialers which call the 24-hour District emergency phone number if there is a power outage or other alarm which could lead to an SSO. The auto dialer is checked 5 days a week at the end of the day by a phone call from a District administrative person to make sure the phone line works, there are no unanswered alarms, and the building alarm is set. If there is something abnormal about the phone check the administrative person calls the on-call Wastewater Service Worker to investigate.

Wastewater Service Workers perform routine inspections of lift stations twice per month. There are two types of inspections, one for the emergency generator and then another for the actual lift station. Generator check list inspections are designed to confirm that the station is in normal operating condition and includes such items as fluid levels, pump totalizer readings, wet well levels, instrumentation, and generator operations. Generators are checked under load during every inspection. Maintenance performed, station statistics and observations are recorded on the Generator Log Record kept at the station.

Lift stations are also cleaned twice per month, but on a different day because of the different equipment needed. Lift station cleaning consists of pressure washing the inside of the station to dislodge FOG and prevent buildup of potentially odorous biological layers. The combination truck may be used to suck out floating FOG or other debris if the accumulation has the potential to create sewer operations problems.

Annually each lift station also receives a full electrical and mechanical inspection, including pumps. This inspection consists of removing each pump and changing the oil while inspecting the impeller and volute for wear. The integrity of the pump motor is checked by an electrical megger test and the electrical components inside the control panel are inspected for damage which could cause unexpected failure.

Sewer System Preventive Maintenance

The District has four types of sewer collection systems. The Gravity collection systems are Lake Wildwood, Lake of the Pines, North San Juan, Cascade Shores, and Gold Creek. The STEP systems are Penn Valley, Mountain Lakes Estates, Higgins Village, and Valley Oak Ct. The Darkhorse area, which is really part of Lake of the Pines, is a grinder pump force main system. Eden Ranch is the one treatment zone with a Septic Tank Effluent Gravity (STEG) system. A STEG system is similar to a STEP system except the effluent from the septic tank flows by gravity through the collection system.

Weekly, normally on Monday, the Wastewater Service Workers check green belts and undeveloped natural lands for evidence of overflows. This is a "windshield" inspection of areas that may not get visited by local residents so there is the potential of spills which could go undiscovered.

Gravity Collection System Maintenance

Cleaning the gravity pipe is what prevents a buildup of roots, debris, and grease from blocking the sewer and causing SSOs. The cleaning is done using high pressure water sent through a hose that is pushed up the sewer line. A nozzle at the end of the hose scours the inside of the sewer pipe washing debris and grease down to the lower manhole where it is vacuumed into the truck for disposal at the treatment plant. In the case of roots, a rotating cutter can be attached to the nozzle that will cut away the roots intruding into the pipe through a joint or crack.

Cyclical Sewer Cleaning

Sewer cleaning occurs as part of preventive maintenance. The District performs cyclic cleaning based on the branching structure of the collections system. Starting from the ends of the sub-areas and working toward the wastewater treatment plant, each sub area of the system is cleaned on a rotating three-year

schedule. As cleaning is completed and condition assessments are made, potential trouble areas are documented and prioritized for increased cleaning or remedial action as required.

Focused Sewer Cleaning

Focused or prioritized sewer cleaning is scheduled based on findings from PMs or cyclical inspections. Focused cleaning may include root control or hydro-jetting of the line. If the condition of the pipe requires cleaning more frequently than once a year, it is considered a "hot spot" and can be cleaned as frequently as once a month. Non-hot spots, depending on their age, condition, and environmental consequence of a spill, may be cleaned from yearly to once every three years. Annual or more frequent cleanings are documented in the Hot Spot Binder maintained by the collection systems workers.

Root Control

The District uses two methods of root control, root cutting and root control foam. Root cutting physically removes the root intrusion so it will not cause a blockage in the sewer when needed. Root control herbicide foam is flushed down the sewer pipe, attaches to the roots, and is absorbed into them. Within a few weeks, the roots die back from the sewer joint or crack, eliminating growth for two or more years. When used properly, the herbicide will not harm the plant (usually trees) or the wastewater treatment plant. The procedure is generally performed every two years. In sewers which have roots more frequent CCTV inspections are required to monitor the damage being done by the root intrusion.

Fats, Oils, and Grease Control

Mitigation of FOG impacts to the sewer system are discussed in Chapter 7 of this SSMP.

Odor Control Methods

The District has implemented a chemical odor control program which includes installing odor dishes at the top of manholes that both neutralize and masks odors that may come from sewers. In areas where additional odor control is needed the District has capacity to add odor neutralizing chemicals, degreasers, or calcium nitrate chemicals to lift stations which will prevent the generation of odors downstream of the lift station. Currently the District uses Bioxide which is a nitrate-based chemical that prevents the septic conditions that lead to the formation of hydrogen sulfide. Nitrate is habit forming to the collection system so over time more is needed to control odors. The District gradually reduces and eliminates Bioxide use in winter an excessive use of nitrate can overload the WWTP denitrification ability.

Quality Control Inspections

The District uses standard operating procedures for proper cleaning, root control, flushing methods, and equipment usage. CCTVs are done regularly as part of the preventative maintenance schedules to verify cleanings or defects in the sewer systems are managed properly. The District performs cyclic CCTV based on the branching structure of the collections system. Starting from the ends of the sub-areas and working toward the wastewater treatment plant, each sub area of the system is CCTVed on a rotating six-year schedule. As cleaning is completed and condition assessments made, potential trouble areas are

documented and prioritized for increased cleaning or remedial action. Information is also provided to the Rehabilitation and Replacement Plan.

Service Requests and Repair Orders

Service requests are initiated by customers, staff, or an outside entity. Service requests are prioritized by the nature of the request and initiate any of the following actions: placement on priority schedule, CCTV of the line, public outreach/educational information, referral for further evaluation, or referral directly to District engineering staff for replacement. Once the collections system staff receives the service request, they investigate the request and complete it by the required due date.

Flow Monitoring

Flow monitoring in the collection system has been conducted in the past as part of a Sanitation Sewer Evaluation Study (SSES). The District is investigating the ability to do small in-house flow monitoring studies to evaluate infiltration and inflow (I&I), general conditions of sewers, and the benefit/feasibility of sewer repair in locations with high I&I. Information from the flow monitoring study will contribute to the Rehabilitation and Replacement Plan.

Pressurized Collection System Maintenance

There are three types of pressurized sewers: force mains conveying the wastewater from a sewage pump station to a gravity sewer at the top of a hill, low pressure sewers, and solids handling sewers. Force mains are designed so that the pump discharge maintains a scouring velocity in the sewer and maintenance is generally not needed.

Low pressure sewers (Step systems such as Penn Valley, Mountain Lakes Estates, Higgins Village, and Valley Oak Ct.) are sewage collection systems where each connection (home) has a septic tank to remove solids from their sewage. Once the solids are removed, a pump conveys the remaining clarified wastewater into a pressurized sewer maintained by the sewer District. Pressurized sewers generally do not cause SSOs. Routine maintenance in these areas consists of a regular survey and cleaning of septic tanks. Annually the collections department measures the sludge depth in each septic tank that has not been cleaned within the last three years. If the combined sludge and scum is more than 30 percent of the tank volume, then the septic tank is scheduled for cleaning.

The Darkhorse area of Lake of the Pines has grinder pump force main system that can accumulate solids. In order to maintain efficiency, cleaning is performed by forcing a "Pipe Pig" through the pipe. A "Pipe Pig" is a shaped piece of foam rubber that scrubs the inside of the pipe removing any buildup and forcing it through the pipe by water pressure. Pressurized sewers are "pigged" once every ten years.

Maintenance Documentation

Maintenance performed on gravity sewers and pressure sewers is documented in the computerized maintenance management system, Job Cal+. The section of line cleaned or CCTVed are also highlighted with date of service on the master schedule sewer map. After cleaning sewer or CCTV observations

about the cleaning are recorded in completed work orders that can be reference later. Information that may be noted includes:

- Description of work
- Observations on the equipment indicated a defect in the sewer line
- Additional investigation needed with CCTV
- Additional maintenance recommendations
- Adjustments to the maintenance schedule
- Possible repairs needed at manholes

Records of maintenance on pump stations are kept at the Utilities Shop. The records show what maintenance has been performed and provides workers with information for ordering parts and equipment for the stations.

Rehabilitation and Replacement Plan

The District annually reviews rehabilitation and replacement needs, as part of the budget and forecasting process, that identify and prioritize system deficiencies and implements appropriate short-term or long-term actions to address each deficiency.

Identification of collection system deficiencies are identified by several means.

- Review of CCTV surveys.
- During the process of cleaning a mainline. Manholes are regularly inspected for structural integrity, roots, or I/I problems during the pipeline cleaning process.
- The District's lift stations are continually monitored during routine inspections by Wastewater Service Workers. Defects discovered are reported to supervisors and/or directly to the District's electrician and mechanics.

Prioritizing System Deficiencies

There are three basic parts of a sanitary sewer system: pipelines, manholes, and sewage pump stations. A condition assessment is a review of the three basic parts of a sewer system to determine their condition. This review is performed by an inspection of each part. Sewer pipelines are first inspected by CCTV. A camera is run through the entire length of the sewer allowing the operator to view (and record on tape) the condition of the inside of the sewer pipe. Roots, grease buildup, structural defects and I/I can be easily seen and recorded. Manholes are inspected at the same time they are opened to place the TV camera into the sewer pipe, enabling their conditions to be noted and recorded. Pump stations are evaluated during the annual electrical and mechanical inspection. As deteriorated conditions are noted, they are placed on a rehabilitation program for pump stations.

When a pipeline deficiency has been identified, a systematic prioritization is used to determine when the problem needs to be addressed. Facilities thus identified receive a rank from 1 to 5. Priority 1 indicates an immediate response is needed. Priority 5 represents further action will not be needed for some time. It is up to the Wastewater Service Workers to assign a priority rating to each discovered problem. In the case where the pipeline deficiency caused an SSO, it is always given a priority 1 status. Table 4-1 outlines observations that could cause a specific sewer to receive a specific grade.

Table 4-1 – General Assignment of Pipe Condition Grades

Grade	Condition	Action	Physical Notes	Organic Notes
1	Critical condition	Repair immediately on an emergency basis.	Collapsed or collapse is imminent. Significant longitudinal cracks. Circular cracks and offset of more than 50% of diameter.	Roots in 75% of joints or cracks in pipe. Low spot in sewer more than 50% of diameter full of debris Has caused a recent SSO.
2	Perilous condition	Repair soon, monitor monthly.	Collapse likely in foreseeable future. Longitudinal cracks. Circular cracks and offset of less than 50% of diameter. Infiltration of more than 1 gpm.	Roots in 50% of joints or cracks in pipes. Low spot in sewer less than 50% of diameter full of debris. Defect in pipe accumulates FOG to more than 25% of pipe diameter.
3	Notable condition	Monitor annually or more frequently. Schedule as hot spot for additional monitoring or maintenance.	Collapse unlikely in near future. Circular cracks but no offsets. Minor infiltration of less than 1 gpm.	Roots in 25% of joints or cracks in pipes. Low spot in sewer less than 25% of diameter full of debris. Fog accumulation less than 25% of pipe diameter.
4	Average condition	Monitor according to regular schedule.	Minimal collapse risk. Only hair line cracks with possible stains indicating weeping infiltration.	Little to no roots. No solids accumulation due to low spots. Fog accumulation less than 10% of pipe diameter.
5	Good condition	Monitor according to regular schedule.	Acceptable structural condition. No cracks and no stains indicating infiltration.	No roots. No solids accumulation due to low spots. Fog accumulation less than 10% of pipe diameter.

Facilities that receive a priority 1 or 2 are investigated within two weeks and a short-term action plan is developed. Pipelines that are at risk of failure are repaired as soon as possible. Temporary repairs or repairs that are limited in scope are undertaken immediately by District staff.

Facilities that are not in danger of immediate failure but need rehabilitation or are near the design life expectancy, are either repaired by District crews or are placed on the Capital Improvement Plan (CIP). Facilities that are larger in scope, requiring engineering design, analysis, or planning, are also placed on the CIP.

Short- and Long-Term Rehabilitation Actions

Once deficiencies are found, short- and long-term rehabilitation measures can be scheduled. Those measures can be, but are not limited to the following:

Pipelines

- Joint sealing all or part of the sewer joints
- Slip lining the sewer pipe
- Use of a root cutter and/or chemical root killer if roots are present
- Spot repair of the sewer at locations where there are structural deficiencies or excessive roots
- Replacement with new sewer pipe.

Manholes

- Lining the inside of the manholes to seal I/I and/or stop deterioration
- Raising the manhole lid to prevent inflow
- Replacing the manhole

Pump Stations

- Replacement of various components of the pump station
- Replacement of parts of the pump station structure
- Complete replacement of the entire pump station

Time Schedule

Once a condition assessment of all or a portion of a sewer system has been completed, found deficiencies prioritized, and short- and long-term rehabilitation and replacement measures determined, a time schedule for such work can be developed.

Capital Improvement Plan

The District maintains a five-year Proforma budget which is updated annually. Timing of construction of both new and replacement facilities is based on priority, deficiency, and input from operations staff. Risk assessment, financing, and staffing are also considered in the long term management of District facilities.

The CIP is funded through wastewater rates, wastewater facility connection charges and municipal bonds. The composition of the finance package for each project is based upon the percentage of new and existing customers that will be served by the new or upgraded facility. The CIP plan is developed from the sewer system rehabilitation and replacement plan and required treatment plant projects.

The District dedicates approximately $5,000 each for Lake Wildwood and Lake of the Pines collection systems for annual rehabilitation and repair. This funding is in addition to any major line replacement or lift station upgrades identified in the five-year capital improvement program. The funding has been established to make prioritized line repairs identified during the 6-year CCTV condition assessments of the large gravity collection systems. This program prioritizes the repair of structural defects to ensure the system can consistently provide improved service and also prioritizes repair defects such as protruding taps and roots that may cause SSOs.

Specific Requirements by Zone

Each collections zone has specific maintenance requirements based on the design of the system. The following sections discuss specific maintenance requirements that may be different from the general discussion of District collection system maintenance.

Zone 1 Lake Wildwood

The Lake Wildwood collection system is a clay pipe gravity sewer system with manholes, 14 lift stations, and force mains. All gravity sewers are cleaned on a three-year cycle and CCTV on a six-year cycle. Hot spots may be cleaned semiannual, quarterly, or monthly depending on the frequency of problems experienced and based on examinations using CCTV.

Zone 2 Lake of the Pines

The Lake of the Pines collection system is a PVC gravity sewer system with manholes, 12 lift stations, and force mains. All gravity sewers are cleaned on a three-year cycle and CCTV on a six-year cycle. Hot spots may be cleaned semiannual, quarterly, or monthly depending on the frequency of problems experienced and based on examinations using CCTV.

Zone 4 North San Juan

The North San Juan collection system is a PVC gravity sewer system with manholes, one lift station, and a force main to the treatment plant. All gravity sewers are cleaned on a three-year cycle and CCTV on a six-year cycle. There are no hot spots in the North San Juan area.

Zone 5 Gold Creek

Gold Creek is an all-gravity PVC collection system from an apartment complex to community septic tank and leach field. All gravity sewers are cleaned on a three-year cycle and CCTV on a six-year cycle. There are no hot spots in the Gold Creek apartment complex.

Zone 6 Penn Valley

Penn Valley is a STEP system where individual property septic tank pumps discharge into a PVC pressure collection system that flows to the pump station that discharges directly to the aerated lagoon treatment plant. There are no facilities which allow for cleaning or CCTV of the force main. The individual septic tanks are inspected annually starting 3 years after they are cleaned and pumped when more than 30% of the tank volume is taken by settled or floating sludge. Inspections consist of measuring sludge depth, checking pump and float operation, and cleaning the biotubes if installed. If a problem develops in between inspections a high-level alarm will tell the property resident to call the District. Properties with high incidents of high-level alarms are investigated to determine if there is an I&I or pump problem with the septic tank. Tanks with I&I problems are excavated and sealed to prevent the infiltration of groundwater.

Zone 7 Mountain Lakes Estates

Mountain Lakes Estates is a STEP system where individual house septic tank pumps discharge into a PVC pressure collection system that discharges directly to the sub-surface disposal system. There are no facilities which allow for cleaning or CCTV of the force main. The individual septic tanks are inspected annually starting 3 years after they are cleaned and pumped when more than 30% of the tank volume is taken by settled or floating sludge. Inspections consist of measuring sludge depth, checking pump and float operation, and cleaning the biotubes if installed. If a problem develops in between inspections a high-level alarm will tell the property resident to call the Sanitation District. Properties with high incidents of high-level alarms are investigated to determine if there is an I&I or pump problem with the septic tank. Tanks with I&I problems are excavated and sealed to prevent the infiltration of groundwater.

Zone 8 Cascade Shores

The Cascade Shores collection system is a PVC gravity sewer system with manholes, one lift station, and gravity main to the treatment plant. All gravity sewers are cleaned on a three-year cycle and CCTV on a six-year cycle. There are no hot spots in the Cascade Shores area.

Zone 9 Eden Ranch

Eden Ranch is a STEG system where individual house septic tanks flow to a community pump station that supplies a pressure dose land application system. The system is constructed of PVC pipe. The individual septic tanks are inspected annually starting 3 years after they are cleaned and pumped when more than 30% of the tank volume is taken by settled or floating sludge. Inspections consist of measuring sludge depth and cleaning the biotubes if installed. All gravity sewers are cleaned on a three-year cycle and CCTV on a six-year cycle. There are no hot spots in the Eden Ranch area.

Zone 10 Darkhorse

Darkhorse is a grinder pump system where individual house pumps discharge into a PVC pressure collection system that flows to the HDPE sewer main and pump station that discharges to the Lake of the Pines collection system. Pigging stations are provided in force main system to allow cleaning of the collection pipes. If a problem develops at the individual houses a high-level alarm will tell the property owner to call the District. The force mains are cleaned on a ten-year cycle. There are no hot spots in the Darkhorse area.

Zone 11 Higgins Village

Higgins Village is a STEP system where individual business septic tank pumps discharge into a PVC pressure collection system that discharges directly to treatment plant. There are no facilities which allow for cleaning or CCTV of the force main. The individual septic tanks are inspected annually and pumped when more than 30% of the tank volume is taken by settled or floating sludge. Inspections consist of measuring sludge depth, checking the associated grease trap, checking pump and float operation, and cleaning the biotubes if installed. If a problem develops in between inspections a high-level alarm will tell the property resident to call the District. Properties with high incidents of high-level alarms are investigated to determine if there is an I&I or pump problem with the septic tank. Tanks with I&I problems are excavated and sealed to prevent the infiltration of groundwater. The property owner is responsible for cleaning the grease traps. If a problem develops in between inspections a high-level alarm will tell the property resident to call the District.

Zone 12 Valley Oak Court

Valley Oak Ct. is a STEP system where individual house septic tank pumps discharge into a PVC pressure collection system that discharges directly to the treatment plant. There are no facilities which allow for cleaning or CCTV of the force main. The individual septic tanks are inspected annually starting 3 years after they are cleaned and pumped when more than 30% of the tank volume is taken by settled or floating sludge. Inspections consist of measuring sludge depth, checking pump and float operation, and cleaning the biotubes if installed. If a problem develops in between inspections a high-level alarm will tell the property resident to call the District. Properties with high incidents of high-level alarms are investigated to determine if there is an I&I problem with the septic tank. Tanks with I&I problems are excavated and sealed to prevent the infiltration of groundwater. If a problem develops in between inspections a high-level alarm will tell the property owner to call the District.

Training

Training of employees is an important aspect of the SSMP. Without proper training, maintenance and construction of the sewer system may be performed in an inefficient or an unsafe manner that could result in a disabling or life-threatening injury. Nevada County is fully staffed for most sewer maintenance work and only contracts out maintenance and construction work (on an individual project basis) that cannot be done by staff or to augment the staff during heavy workloads.

Employee Initiative Training

Nevada County encourages all of its employees to pursue career advancement training. the wastewater industry continuously develops new technology to cope with the growing volume of wastewater to be treated. Due to these changes, there is a need for County employees to keep up with advancements, not only in the technology to treat the wastewater, but in technology and equipment to move wastewater to the treatment plant and how to maintain equipment. This type of training is generally provided by the industry organizations in their conferences, seminars, and training sessions. Funding is provided in the Sanitation District budget to pay for training when appropriate.

County Provided Training

Most utility employees come to work for the County with little training. Required staff training is documented in Appendix C. Training session records are kept for each training session and managed by the Collections Supervisor.

Wastewater collections staff are encouraged to become and remain CWEA certified in the maintenance and operation of wastewater collection systems. The District assists with the certification by paying for the preparation course, take home study material, certification exams, and required continuing education to maintain certification. These types of classes are also provided by wastewater industry organizations like the Water Environment Federation, the California Water Environment Association, the Central Valley Clean Water Association, and others. Outside classes can be in the form of multiple day conferences where attendees rotate through a series of classes they choose, partial day seminars, benchmarking, and luncheon sessions. Funding is provided in the District budgets to pay for such training when appropriate.

Contingency Equipment and Replacement Inventories

The District is required to have sufficient parts and equipment to maintain its sewer infrastructure in inventory. The parts and equipment can be categorized as follows:

- Parts needed for sewer pipe maintenance and repair.
- Parts needed for sewer pump station maintenance and repair.
- Equipment needed to maintain both sewer lines and sewage pump stations.

Appendix D has a minimum spare parts list so that emergency collection systems repairs can be completed promptly. Wastewater Service Workers operate out of the Lake Wildwood and Lake of the Pines wastewater treatment plants. Each facility has a building that houses offices, a locker room, a maintenance shop, and space for parts storage. Most rolling stock maintenance is performed by the Department of Public Works, Fleet Maintenance Division in their nearby vehicle maintenance facility.

Pipe Maintenance Parts

Pipe maintenance parts consist primarily of a supply of pipe in various sizes and types and a supply of couplers and clamps to connect them together. For repairing damaged force main (pressure pipes), wrap around pipe clamps are also needed. A sufficient inventory of pipe, clamps and couplers are kept at the treatment plants for emergency use. When a pipe repair is scheduled, materials are purchased and delivered prior to the beginning of the project.

Lift Station Maintenance Parts

A sufficient inventory of pump station parts are kept at the Lake of the Pines wastewater treatment plant for emergency use. When a scheduled pump station repair is proposed, materials are purchased and delivered prior to the beginning of the project.

Sewage lift stations operated by the District normally have two design features that promote ease of maintenance and ensures redundancy. Stations are designed to maintain operation with one of their pumps out of service. They also have 4 to 8 hours of overflow storage and/or an automatic standby generator on site.

Maintenance Equipment

The District has numerous pieces of portable equipment available in the event of an emergency: pumps, generators, heavy equipment, and traffic safety equipment. The District owns and operates a variety of equipment to keep the collection system in working order. The District fleet, including primary equipment and old backup equipment, includes the following.

- (2) Combination trucks (Vactor and Camel) used to clean lift stations and pipelines
- (2) Hydro jetter trucks used to clean pipelines
- (1) Easement machine used to clean pipelines where large equipment may not fit or would damage surrounding such as between houses, in backyards, or golf courses.
- (1) CCTV trailer; used to inspect inside gravity and service lines
- (3) Backhoes; earth moving equipment
- (1) Dump Truck and (1) Dump Trailer
- Generators (tow behind 35KW, 35KW, and 100 KW, and small portable)
- Pumps (10 HP electric for use with generators, or trailer mounted 6" diesel power pump)

If additional equipment is needed, it can be rented locally.

Chapter V. Design and Performance Provisions

Chapter Requirements

The SSMP must include those elements listed below that are appropriate and applicable to the system:

(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.

Introduction

Design and construction standards and specifications for the installation of new sanitary sewers are described in Chapter 7 of the Sanitation Code. Several treatment zones in the District were design by developers that used Civil Engineers experienced in sanitation design. Those systems have been engineered and when additional connections to those systems are made the equipment installed must match the original design specifications.

Inspection

When a property owner in the District applies for a sewer permit the District is required to review the plan set before the permit for construction can be issued. When the permit is issued and during the construction period District personnel are updated on the progress of construction and are required to inspect lateral and equipment installation. Building occupancy can not be obtained unless inspection and testing demonstrate the lateral and possible septic tanks are installed properly.

Specific Requirements by Zone

Each collection system was constructed by the developer of the area of which it serves. Many of the collection systems operate differently. Each collections zone may have specific design and performance provisions based on the original design of the system. The following sections discuss specific design and performance provisions that may be different from the specifications found in the Sanitation Code.

Zone 1 Lake Wildwood

The Lake Wildwood collection system is a gravity sewer system with manholes, 14 lift stations, and force mains. Design and construction specifications are described in Chapter 7 of the Sanitation Code. Compliance with the Code is checked during building permit design review. District provides inspection of the sewer lateral during construction.

Zone 2 Lake of the Pines

The Lake of the Pines collection system is a gravity sewer system with manholes, 12 lift stations, and force mains. Design and construction specifications are described in Chapter 7 of the Sanitation Code. Compliance with the Code is checked during building permit design review. District provides inspection of the sewer lateral during construction.

Zone 4 North San Juan

The North San Juan collection system is a gravity sewer system with manholes, one lift station, and a force main to the treatment plant. Design and construction specifications are described in Chapter 7 of the Sanitation Code. Compliance with the Code is checked during building permit design review. District provides inspection of the sewer lateral during construction.

Zone 5 Gold Creek

Gold Creek is an all-gravity system from an apartment complex to community septic tank and leach field. Design and construction specifications are described in Chapter 7 of the Sanitation Code. Compliance with the Code is checked during building permit design review. District provides inspection of the sewer lateral during construction.

Zone 6 Penn Valley

Penn Valley is a STEP system where individual property septic tank pumps discharge into a pressure collection system that flows to the pump station that discharges to the Lake Wildwood Wastewater treatment facility. Design and construction specifications are provided to homeowners or their design representative free of charge when the District is contacted about a sewer permit. Compliance with Sanitation Code is checked during building permit design review. District provides inspection of the sewer lateral and septic tank during construction.

Zone 7 Mountain Lakes Estates

Mountain Lakes Estates is a STEP system where individual house septic tank pumps discharge into a pressure collection system that flows to the sub-surface disposal system. Design and construction specifications are provided to homeowners or their design representative free of charge when the District is contacted about a sewer permit. Compliance with Sanitation Code is checked during building permit design review. District provides inspection of the sewer lateral and septic tank during construction.

Zone 8 Cascade Shores

The Cascade Shores collection system is a gravity sewer system with manholes, one lift station, and gravity main to the treatment plant. Design and construction specifications are described in Chapter 7 of the Sanitation Code. Compliance with the Code is checked during building permit design review. District provides inspection of the sewer lateral during construction.

Zone 9 Eden Ranch

Eden Ranch is a STEG system where individual house septic tanks flow to a community pump station that supplied a pressure dose land application system. Design and construction specifications are provided to homeowners or their design representative free of charge when the District is contacted about a sewer permit. Compliance with Sanitation Code is checked during building permit design review. District provides inspection of the sewer lateral and septic tank during construction.

Zone 10 Darkhorse

Darkhorse is a grinder pump system where individual house pumps discharge into a pressure collection system that flows to the pump station that discharges to the Lake of the Pines collection system. Design and construction specifications are provided to homeowners or their design representative free of charge when the District is contacted about a sewer permit. Compliance with Sanitation Code is checked during building permit design review. District provides inspection of the sewer lateral and septic tank during construction.

Zone 11 Higgins Village

Higgins Village is a STEP system where individual business septic tank pumps discharge into a pressure collection system that discharges directly to treatment plant. Design and construction specifications are provided to new businesses or their design representative free of charge when the District is contacted about a sewer permit. Compliance with Sanitation Code is checked during building permit design review. District provides inspection of the sewer lateral and septic tank during construction.

Zone 12 Valley Oak Court

Valley Oak Ct. is a STEP system where individual house septic tank pumps discharge into a pressure collection system that discharges directly to the treatment plant. Design and construction specifications are provided to homeowners or their design representative free of charge when the District is contacted about a sewer permit. Compliance with Sanitation Code is checked during building permit design review. District provides inspection of the sewer lateral and septic tank during construction.

Chapter VI. Overflow Emergency Response Plan

Chapter Requirements

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. 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 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.

Introduction

Figure 2-2 shows the Chain of Communication within the District when a Sewer System Overflow (SSO) occurs. When that call comes in, it initiates the County's Overflow Emergency Response Plan (OERP). The plan is a written document outlining the steps to be taken by District employees as they respond to the potential overflow. The document is carried in all District vehicles. All District employees have been trained on the plan. Not only does the document outline the procedures that employees must follow in the event of a SSO, but it also contains copies of the following documents and information:

- A copy of the GWDR Monitoring and Reporting Program.
- Tables and pictures to assist in the estimation of spill volume.
- The current on-call list for service workers.
- A list containing the names and phone numbers of District personnel.

- A list of emergency phone numbers such as State and County agencies, USA, etc.
- PG&E meter account numbers for all pump stations.
- Phone numbers for lift stations
- A Reporting Form.

A copy of the OERP is contained in Appendix E.

Specific Requirements by Zone

There are no specific requirements for each collection zone in this Chapter.

Chapter VII. FOG Control Program

Chapter Requirements

Evaluate its service area to determine whether a FOG control program is needed. If a FOG program is not needed, provide justification for why it is not needed. If FOG is found to be a problem, 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.

Introduction

Fats, Oils and Grease (FOG) in sewer pipes are the cause of many Sewer System Overflows (SSOs) in smaller diameter pipes. All three form solids as they cool in the sewer, mix with other solids, and then stick to the sewer pipe. The solid FOG then starts to build up until finally it completely plugs the sewer causing a backup which overflows. The FOG buildup may be at a joint in the pipe, at a broken section of pipe or at roots intruding into the pipe. Although broken pipe and roots can cause blockages of their own, by controlling the amount of FOG that gets into a collection system and properly maintaining the collection system the frequency of SSOs can be reduced.

Most District collection systems do not have any commercial connections such as restaurants, coffee houses, or other establishments that may generate FOG. All large or commercial connections that have

the potential to generate FOG have grease traps designed and installed according to Uniform Plumbing Code.

Existing FOG Control Program

Wastewater Service Workers regularly inspect installed grease traps to ensure business owners are following best management practices. Those inspections are documented in JobCal+. The existing program for those facilities can be summarized as follows:

- The Wastewater Service Worker has met with the owner/manager of each restaurant to help develop an in-house program for management of their grease interceptors and traps.
- Their programs include regular cleaning of interceptors and traps. When cleaning is completed, the owner/manager faxes a copy of the invoice from their private hauler to the District.
- The invoice indicates when the tank was cleaned, the volume removed, the amount charged and the hauler's name.
- The frequency of tank cleaning is left up to the owner/manager; however, if the invoices fail to come in on a regular basis, a District Wastewater Service Worker will make another visit to the establishment.
- The Wastewater Service Worker also makes regular visits to each establishment based on their past performance. Some establishments may be visited only once a year and others may need quarterly inspections until their facility develops a regular program.
- When the Wastewater Service Worker makes an on-site inspection, the interceptor or tank is inspected and needed maintenance is requested.

Existing FOG Disposal Locations

All FOG that accumulates in grease traps and grease interceptors is pumped out and hauled by private haulers hired by the owners of the commercial establishments. There are no disposal locations within the county and FOG is hauled outside of the county for disposal.

Specific Requirements by Zone

There are no known locations within District collection systems that have blockages specifically from FOG. There are locations currently identified as hot spots where a combination of FOG, debris, and/or roots require more frequent cleaning. If a collection system hot spot is identified, then the location and frequency of cleaning will be managed in the preventive maintenance program.

Zone 1 Lake Wildwood

The Lake Wildwood collection system is a gravity sewer system with mostly residential connections. Commercial connections are isolated to one area and grease generating food establishments have

grease traps. Homeowner's association facilities with kitchens all have grease traps. All gravity sewers are cleaned on a three-year cycle and CCTV on a six-year cycle. FOG hot spots may be cleaned semiannual, quarterly, or monthly depending on the frequency of problems experienced and based on examinations using CCTV.

Zone 2 Lake of the Pines

The Lake of the Pines collection system is a gravity sewer system with mostly residential connections. Commercial connections are isolated to one area and grease generating food establishments have grease traps. Homeowner's association facilities with kitchens all have grease traps. All gravity sewers are cleaned on a three-year cycle and CCTV on a six-year cycle. FOG hot spots may be cleaned semiannual, quarterly, or monthly depending on the frequency of problems experienced and based on examinations using CCTV.

Zone 4 North San Juan

The North San Juan collection system is a gravity sewer system with mostly residential connections. Commercial connections are isolated to one area and grease generating food establishments have grease traps. All gravity sewers are cleaned on a three-year cycle and CCTV on a six-year cycle. If identified, FOG hot spots may be cleaned semiannual, quarterly, or monthly depending on the frequency of problems experienced and based on examinations using CCTV.

Zone 5 Gold Creek

Gold Creek is an all-gravity collection system from an apartment complex to community septic tank and leach field. All gravity sewers are cleaned on a three-year cycle and CCTV on a six-year cycle. Fog can cause a blockage at the inlet side of the community septic tanks. The septic tanks, which are really a treatment process and not a part of the collection system, are inspected quarterly and normally cleaned annually. During quarterly inspections FOG can get moved out of the way and FOG is removed during the cleaning.

Zone 6 Penn Valley

Penn Valley is a STEP system where individual property septic tank pumps discharge into a pressure collection system that flows to the pump station that discharges to the Lake Wildwood Wastewater treatment facility. There are no facilities which allow for cleaning or CCTV of the force main. The individual septic tanks trap FOG and are inspected annually starting 3 years after they are cleaned and pumped when more than 30% of the tank volume is taken by settled or floating sludge. If a problem develops in between inspections a high-level alarm will tell the property resident to call the District.

Zone 7 Mountain Lakes Estates

Mountain Lakes Estates is a STEP system where individual house septic tank pumps discharge into a pressure collection system that flows to the pump station that discharges directly to the sub-surface disposal system. There are no facilities which allow for cleaning or CCTV of the force main. The individual septic tanks trap FOG and are inspected annually starting 3 years after they are cleaned and pumped

when more than 30% of the tank volume is taken by settled or floating sludge. If a problem develops in between inspections a high-level alarm will tell the property resident to call the District.

Zone 8 Cascade Shores

The Cascade Shores collection system is completely residential except for one small local market. All gravity sewers are cleaned on a three-year cycle and CCTV on a six-year cycle. There are no hot spots in the Cascade Shores area.

Zone 9 Eden Ranch

Eden Ranch is a STEG system with all residential connections where individual house septic tanks flow to a community pump station that supplies a community leach field. The individual septic tanks trap FOG and are inspected annually starting 3 years after they are cleaned and pumped when more than 30% of the tank volume is taken by settled or floating sludge.

Zone 10 Darkhorse

Darkhorse is a grinder pump system with all residential connections where individual house pumps discharge into a pressure collection system that flows to the pump station that discharges to the Lake of the Pines collection system. Pigging stations are provided in force main system to allow cleaning of the collection pipes. If a problem develops at the individual houses a high-level alarm will tell the property owner to call the District. The force mains are cleaned on a ten-year cycle. There are no hot spots in the Darkhorse area.

Zone 11 Higgins Village

Higgins Village is a STEP system where individual business septic tank pumps discharge into a pressure collection system that discharges directly to treatment plant. There are no facilities which allow for cleaning or CCTV of the force main. The individual septic tanks are inspected annually and pumped when more than 30% of the tank volume is taken by settled or floating sludge. If a problem develops in between inspections a high-level alarm will tell the property resident to call the District. The property owner is responsible for cleaning their grease traps before the septic tanks. If a problem develops in between inspections a high-level alarm will tell the property resident to call the District.

Zone 12 Valley Oak Court

Valley Oak Ct. is a STEP system with all residential connection where individual house septic tank pumps discharge into a pressure collection system that discharges directly to the treatment plant. There are no facilities which allow for cleaning or CCTV of the force main. The individual septic tanks trap FOG and are inspected annually starting 3 years after they are cleaned and pumped when more than 30% of the tank volume is taken by settled or floating sludge. If a problem develops in between inspections a high-level alarm will tell the property owner to call the District.

Chapter VIII. System Evaluation and Capacity Assurance Plan

Chapter Requirements

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 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.

Introduction

There are three basic types of Sewer System Overflows (SSOs): (1) grease, root, and debris, (2) structural related and (3) capacity related. Grease, root, and debris related SSOs are a function of the Operation and Maintenance Plan described in Chapter 4. Structural related SSOs are normally found in a Condition Assessment and are repaired under Rehabilitation and Replacement Plan also described in Chapter 4.

Capacity issues have one or both of the following causes:

- At times more sewage connections are allowed to connect to a sewer system than it was designed to handle. This can cause SSOs during peak times of the day.
- Some collection systems have excessive Infiltration and Inflow (I/I) which, during heavy wet weather conditions, can cause overflows due to the sewer pipes not being large enough to handle increased flows. I/I is groundwater that enters the sewage system through broken sewer pipes (Infiltration) and Inflow is the surface water that enters the sewer through some inlet. Inflow sources can be illegal connections of roof and yard drains into the sewer, cleanouts

without caps into which drainage enters or even storm drainage systems accidentally connected to the sewer system.

Historically the District has not had SSOs related to certain times of days or storm events and believes there is adequate capacity in all of the collection systems.

Design Criteria

Allowable design criteria for sewer pipes is defined in the Sanitation Code.

Projected Flow Rates and Peaking Factors

In order to calculate sewage flows for a hydraulic model capacity assessment, a projection of the peak wet weather sewage flow (PWWF) is needed.

PWWF is the flow during the peak time of day and during extreme wet weather when I/I is high. This is calculated by counting the number of equivalent dwelling units (EDUs) connected to a certain portion of the sewer system, adding in their average dry weather flow, and then multiplying by a peaking factor. That peaking factor can be either assumed or measured. These will be developed by the engineer of each proposed development.

Measured dry weather flows and peaking factors should be used on older sewer systems whenever possible. A measured peaking factor is developed through the placement of sewage flow meters in the sewer system and measuring both the sewer flow rates in dry conditions (summer and fall) and again during extreme wet weather conditions during the winter. A measured peaking factor can then be calculated by dividing the measured Peak Wet Weather Flow by the measured Average Dry Weather Flow.

Sewer construction standards became stricter in the 1980s. Newer systems tend to have less I/I in them than do older systems. However, even well constructed systems deteriorate over time and inflow sources are sometimes connected to them. Therefore, no sewer system is free of leaks and no matter how well built, should have a peaking factor for future I/I.

The capacities of sewage pump stations are evaluated in the same way.

Other methods may be used to project PWWF as deemed appropriate by the engineer conducting the analysis as long as the analysis accounts for all elements contributing to PWWF.

Hydraulic Models and Capacity Assessment Types

Hydraulic models are needed to evaluate the capacity of a given sewer system. A hydraulic model is a calculation of the expected sewage flows in any given location of sewer system, based on assumed and/or measured design criteria. During a capacity assessment, calculated wastewater flows are compared to the capacity of existing sewer pipes to determine if they can transport wastewater flows without overflowing.

There are two types of hydraulic models, static and dynamic. In each, the number of equivalent dwelling units connected to and planned to be connected to a sewer system are counted. This is always performed based on the maximum density of the current General Plan for the area served so pipe sizes that are developed reflect future growth. Then design criteria are used to calculate the expected sewage flows from a given area of the sewer system. Wastewater engineers working for developers may develop either type of model to evaluate the impact of a proposed development.

A static model is typically used on smaller sewer systems containing no larger than 15-inch pipes. Static models assume the calculated sewage flows happen throughout the sewer system at the same time. The District will develop Static model spreadsheets using Microsoft Excel so that the capacity of individual sewers can be evaluated if there is a concern about specific parts of a collection system. The spreadsheet will have inputs for:

- EDUs calculated from General Plans
- Pipe type, diameter , and slope
- Capacity of upstream lift stations
- Measured or assumed peaking factors used in flow projections for existing pipes depending on available data.
- Assumed peaking factors used in flow projections for future pipes

Dynamic models are for larger sewer systems (18 inch and larger pipes). A dynamic model assumes that peak sewage flows are all generated at the same time but takes time for the sewage to flow through the pipes and reach the wastewater treatment plant. Therefore, sewage entering the sewer system at the lower end of the system (near the plant) has drained away before the sewage entering the upper portion of the sewer system has had a chance to flow down to the lower portion. Accordingly, the lower portion of the sewer system may not need as large of a sewer pipe as shown in a static model.

Sewer Capacity Enhancement Methods

If the hydraulic analysis of a sewer District concludes that additional capacity is needed, the SSMP requires a Capital Improvement Plan be developed to enhance the District capacity. Potential capacity enhancement methods that could be used in that plan are, but not limited to, the following:

- Reduction of Infiltration and Inflow in sewer system to a level that can be transported by existing sewer system.
- Increasing the size of existing pipes or constructing new pipes to handle larger flows
- For sewage pump stations, increasing pumping capacity of the station.
- Providing storage facilities to store the wastewater until peak wet weather flows subside

Specific Requirements by Zone

The ten collections systems in the District are all different. Modeling efforts will depend on commercial and residential development plans proposed by Developers and restrictions noted by the Wastewater Service Workers. If there is a concern about inadequate system capacity in a portion of a collection system, spreadsheets models using static equations can be used to determine if a more thorough engineering investigation is required.

Zone 1 Lake Wildwood

Lake Wildwood, Zone 1, is a gravity system with 14 pump station and some force mains to a tertiary treatment plant. There are no known capacity restrictions in the collection system. In general, even during the worst rain storms lift stations run with only one pump and there are no repeat overflow locations. Wastewater Service Workers will continue to investigate and monitor I&I to ensure continued reliable operation even during the worst rain storms.

Zone 2 Lake of the Pines

Lake of the Pines, Zone 2, is a gravity system with 11 pump stations and some force mains to a tertiary treatment plant. There is only one known capacity restriction in the collection system. Lift station 7 sometimes reaches the high-level float during severe rain storms. When a bad storm is expected the District parks a combination truck next to the lift station so that in the event of a high-level alarm the District can pump out additional wastewater. The lift station is small, has a small contributing area, and is shallow so trucking wastewater has been effective at preventing a spill. In general, even during the worst rain storms the other lift stations run with only one pump and there are no repeat overflow locations. Wastewater Service Workers will continue to investigate and monitor I&I to ensure continued reliable operation even during the worst rain storms.

Zone 4 North San Juan

North San Juan, Zone 4, is a gravity system with one pump station that pumps to a community septic tank and leach field. There are no known capacity restrictions in the collection system. In general, even during the worst rain storms the lift station runs with only one pump and there are no repeat overflow locations. Wastewater Service Workers will continue to investigate and monitor I&I to ensure continued reliable operation even during the worst rain storms.

Zone 5 Gold Creek

Gold Creek, Zone 5, is an all-gravity system to a community septic tank and leach field. There are no known capacity restrictions in the collection system.

Zone 6 Penn Valley

Penn Valley, Zone 6, is a STEP system where individual house septic tank pumps discharge into a pressure collection system that flows to the pump station that discharges to the Lake Wildwood

Wastewater treatment facility. During periods of high rain when the ground get saturated, infiltration into the individual septic tanks can cause high flows to get pumped to the treatment plant. Sometimes individual home pumps stations (7 to 15 gpm) are not able to keep with the infiltration and a high-level alarm causes the property resident to call the District to investigate. Typically, this indicates the pump is worn out and needs to be replaced. Wastewater Service Workers will test the pump and replace as needed along with other troubleshooting to determine the reason for the high-level alarm.

Zone 7 Mountain Lakes Estates

Mountain Lakes Estates, Zone 7, STEP system where individual house septic tank pumps discharge to a sub-surface disposal system. There are no known capacity restrictions in the individual house pump stations.

Zone 8 Cascade Shores

Cascade Shores, Zone 8, gravity system with one pump station and some force mains to tertiary treatment plant. There are no known capacity restrictions in the collection system. Wastewater Service Workers will continue to investigate and monitor I&I to ensure continued reliable operation even during the worst rain storms.

Zone 9 Eden Ranch

Eden Ranch, Zone 9, is a STEG system where individual house septic tanks discharge to a community lift station that discharges to the leach field. There are no known capacity restrictions in the collection system.

Zone 11 Higgins Village

Higgins Village, Zone 11, is individual business pump stations discharge through force main to the tertiary treatment plant. There are no known capacity restrictions in the individual building pump stations.

Zone 12 Valley Oak Court

Valley Oak Court, Zone 12, is a STEP system where individual house pump stations discharge through force main to the secondary treatment plant with community leach field. There are no known capacity restrictions in the individual house pump stations.

Chapter IX. Monitoring, Measurement, and Plan Modifications

Chapter Requirements

The collection system agency 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.

Introduction

Once all programs and projects listed in the previous chapters are implemented, these programs will need to be monitored and measured to verify their effectiveness. This evaluation is done by collecting data on a yearly basis that will show how effective they are in reaching the goals of the SSMP, reducing Sewer System Overflows (SSOs), and protecting the environment.

Measure Effectiveness

The SSMP process is based on the continuous improvement approach. Several general key performance indicators are outlined below that may be used to measure the progress of the SSMP implementation and the performance of the collection systems. Improvements in preventive maintenance should reduce the number of SSOs, however the District already has a low SSO frequency.

- Service calls, blockages, and SSOs over the past 12 months
- SSO events by cause (roots, grease, debris, etc.) and category
- Volume of SSOs and volume contained
- Annual maintenance production by activity
- Updating documentation such as collection systems record drawings.

Specific Requirements by Zone

Specific performance indicators by type of treatment system are outlined in each zone description. A summary of recent spills is listed in Appendix F.

Zone 1 Lake Wildwood

Lake Wildwood, Zone 1, is a gravity system with 14 pump station and some force mains to a tertiary treatment plant. Parameters that should be examined include:

- Overflows by category 1, 2, or 3, and private lateral spills.
- CCTV miles completed and manholes inspected
- Hydro-cleaning miles of sewers
- Root treatment or sewers replaced because of root intrusion
- Preventive maintenance of generators and lift stations.

Zone 2 Lake of the Pines

Lake of the Pines, Zone 2, is a gravity system with 11 pump stations and some force mains to a tertiary treatment plant. Parameters that should be examined include:

- Overflows by category 1, 2, or 3, and private lateral spills.
- CCTV miles completed and manholes inspected
- Hydro-cleaning miles of sewers
- Root treatment or sewers replaced because of root intrusion
- Preventive maintenance of generators and lift stations.

Zone 4 North San Juan

North San Juan, Zone 4, is a gravity system with one pump station that pumps to a community septic tank and leach field. Parameters that should be examined include:

- Overflows by category 1, 2, or 3, and private lateral spills.
- CCTV miles completed and manholes inspected
- Hydro-cleaning miles of sewers
- Root treatment or sewers replaced because of root intrusion
- Preventive maintenance of generators and lift stations.

Zone 5 Gold Creek

Gold Creek, Zone 5, is an all-gravity system to community septic tank and leach field. Parameters that should be examined include:

- Overflows by category 1, 2, or 3, and private lateral spills.
- CCTV miles completed and manholes inspected
- Hydro-cleaning miles of sewers
- Root treatment or sewers replaced because of root intrusion

Zone 6 Penn Valley

Penn Valley, Zone 6, is a STEP system where individual house septic tank pumps discharge into a pressure collection system that flows to the pump station that discharges to the Lake Wildwood Wastewater treatment facility. Parameters that should be examined include:

- Overflows by category 1, 2, or 3, and private lateral spills.
- Septic tanks inspected and pumped
- Septic tanks repaired
- Air release valve exercised

Zone 7 Mountain Lakes Estates

Mountain Lakes Estates, Zone 7, is a STEP system where individual house septic tank pumps discharge to a sub-surface disposal system. Parameters that should be examined include:

- Overflows by category 1, 2, or 3, and private lateral spills.
- Septic tanks inspected and pumped
- Septic tanks repaired

Zone 8 Cascade Shores

Cascade Shores, Zone 8, is a gravity system with one pump station and some force mains to a tertiary treatment plant. Parameters that should be examined include:

- Overflows by category 1, 2, or 3, and private lateral spills.
- CCTV miles completed and manholes inspected
- Hydro-cleaning miles of sewers
- Root treatment or sewers replaced because of root intrusion
- Preventive maintenance of generators and lift stations.

Zone 9 Eden Ranch

Eden Ranch, Zone 9, is a STEG system where individual house septic tanks discharge to a community lift station that discharges to the leach field. Parameters that should be examined include:

- Overflows by category 1, 2, or 3, and private lateral spills.
- Septic tanks inspected and pumped
- Individual bio-tubes cleaned yearly

Zone 11 Higgins Village

Higgins Village, Zone 11, are individual business pump stations discharge through force main to the tertiary treatment plant. Parameters that should be examined include:

- Overflows by category 1, 2, or 3, and private lateral spills.
- Septic tanks inspected and pumped
- Septic tanks repaired

Zone 12 Valley Oak Court

Valley Oak Court, Zone 12, is a STEP system where individual house pump stations discharge through force main to the secondary treatment plant with community leach field. Parameters that should be examined include:

- Overflows by category 1, 2, or 3, and private lateral spills.
- Septic tanks inspected and pumped
- Septic tanks repaired

Chapter X. SSMP Program Audits

Chapter Requirements

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 and the compliance with the SSMP requirements identified in this subsection (D.13), including identification of any deficiencies in the SSMP and steps to correct them.

Introduction

Internal and occasionally external audits of the SSMP will be conducted a minimum of every two years. The person responsible for conducting the audit will be the Wastewater Operations Manager or a person they designate. SSMP Program Audits will derive their information from and complement the requirements of Section 9, Monitoring, Measurement, and Program Modifications. The purpose of the audits are to determine:

- The effectiveness of each individual SSMP
- The district's compliance with that SSMP
- Any deficiencies needing correction in each SSMP.

Reports generated form the audits will be stored next to the SSMP. These reports will assist the District during the recertification required every 5 years.

Specific Requirements by Zone

There are no specific requirements for each collection zone in this Chapter.

Chapter XI. Communication Program

Chapter Requirements

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 collection system agency shall also create a plan of communication with systems that are tributary and/or satellite to the collection system agency's sanitary sewer system.

Introduction

The District staff initially developed the SSMP using in-house skills. As a part of the approval process the SSMP will become a public document as it is submitted to the Sanitation District Advisory Committee (SDAC) for review and then becomes available on the web. The SDAC is made up of citizen members of communities the District serves and their role is to report back to their respective Home Owners Associations. Each treatment zone has representation. The two large zones, Lake Wildwood and Lake of the Pines, have two members. Public documents and/or policy decisions on the operation of District facilities are reviewed by the SDAC prior to review by the elected Board of Directors.

The District does not collect sewage from other organizations. All sewerage generated, transported, and treated by District facilities come from residences of the individual treatment zones.

Communication Program

The Communication Program for the District maintained sewer systems will meet the following three requirements:

- Written and/or electronic copies of SSMP will be made available to public on the Public Works section of the Nevada County Website. http://www.mynevadacounty.com/nc/cda/pw/ww/Pages/Home.aspx
- Paper copies of the SSMP will be available at the Government center located at 950 Maidu Ave. Nevada City, CA 95959, and at the Lake Wildwood and Lake of the Pines wastewater treatment plants.

Specific Requirements by Zone

There are no specific requirements for each collection zone in this Chapter.