Crescenta Valley Water District

Sewer System Management Plan

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1 Goals

1.1 Purpose

The Sewer System Management Plan (SSMP) supplements and supports Crescenta Valley Water District's (CVWD) Operations and Maintenance program and goals by providing high-level, consolidated guidelines and procedures for all aspects of the District's sewer system management. The SSMP will contribute to the proper management of the collection system and assist the District in minimizing the frequency and impacts of sewer system overflows (SSO) by providing guidance for appropriate maintenance, capacity management, and emergency response.

1.2 Goals

CVWD's Wastewater Department is dedicated to providing its customers with safe, reliable, and environmentally sound sewer service at a low cost to its customers. In order to provide excellent service to its customers, Crescenta Valley Water District's Wastewater Department strives to meet the following goals:

- Improvement of the collection system infrastructure to increase reliability and provide for adequate system capacity now and in the future.
- Minimize system leaks in a cost effective manner to reduce infiltration, inflow, and exfiltration.
- Minimize the number and severity of sewer system overflows and quickly and efficiently mitigate the impact of any SSOs which occur.
- Maintain ongoing training and education of staff so that CVWD has the capacity to effectively address potential wastewater system problems as they arise.

1.3 About This Document

CVWD has prepared this SSMP to ensure full compliance with the Statewide General Waste Discharge Requirements (WDR). The first section of the SSMP provides a general description of how CVWD complies with the various provisions of the WDR and provides references to supporting documents. The Appendix section of the SSMP contains specific information and supporting documents. Some support materials, such as large format drawings, relational databases, and lengthy, more detailed documents may not be physically included in the SSMP. In these cases, a reference will be provided within the SSMP that indicates the type, owner, and location of these support materials.

2 Organization

2.1 Standard Organization

Crescenta Valley Water District's Wastewater Department is organized into three divisions: Management, Engineering, and Operations and Maintenance, as shown in Appendix 2-A. The Description of the duties of personnel in each of these divisions is as follows:

Board of Directors – Establishes policy and directs staff in the allocation of funds.

General Manager – Plans strategy, allocates resources, delegates responsibility, enforces policy, and leads the staff.

District Engineer – Manages capital improvements of the collection system, and authorizes outside contractors to perform services.

Regulatory and Public Affairs Manager – Coordinates development and implementation of the SSMP, serves as the public information officer, and prepares and submits wastewater collection system planning documents.

Senior Engineer – Documents new and rehabilitated assets; performs project design work as needed, establishes priority on sewer-related capital improvement projects, works on applicable sewer permits, laws, and regulations; coordinates treatment, disposal costs and development fees with the City of Los Angeles; issues connection fees for developer jobs, prepares overflow response reports and provides support to Management and Operations staff.

Operations and Maintenance Manager – Provides direction for response activities and facilitates communication among responding staff.

Construction Supervisor – Manages field operations and maintenance activities, performs sewer permit inspections, provides information regarding the collection system to Management and Engineering personnel investigates and reports SSOs to Operations and Maintenance Manager, and responds to emergencies.

Maintenance Crew – Group conducts preventive and corrective maintenance activities, mobilizes and responds to SSOs and stoppages.

2.2 SSO Reporting and Emergency Response Organization

2.2.1 Principal Executive Officer

The District's General Manager is the designated Principal Executive Officer of the Wastewater Collection System. The General Manager has appointed the Regulatory and Public Affairs Manager as the duly authorized representative for the purposes of electronic reporting. The request for authorization of the Regulatory and Public Affairs Manager was made in writing to the State Water Resources Control Board and signed by the General Manager.

2.2.2 Online Reporting

CVWD is enrolled in the California Integrated Water Quality System (CIWQS). It is the responsibility of the Senior Engineer to prepare overflow response reports for online submittal. The Regulatory and Public Affairs Manager, being the legally responsible

representative of the District, is required to certify all District reports submitted by the Senior Engineer.

SSOs may occur at any moment. If the Senior Engineer is unable to perform initial reporting within the time allotted by the WDR, the person responsible for managing the SSO reporting shall proceed in the following order:

1) Christy Colby – Regulatory and Public Affairs Manager
2) David Gould – Director of Engineering and Operations
3) Darlene Telles – Operations and Maintenance Manager
4) Nemesciano Ochoa – General Manager

Should an overflow occur at a time when none of these people are available, the General Manager shall authorize another staff member as a duly authorized representative.

2.2.3 Personnel Contact List

Below is a table of CVWD staff that should be notified at the time of any SSO's

Position	Name	Mobile Phone	E-mail
General Manager	Nemesciano Ochoa	562-569-2058	nochoa@cvwd.com
Director of Engineering and Operations	David S. Gould, P.E.	626-590-1020	dgould@cvwd.com
Regulatory and Public Affairs Manager	Christy J. Colby	818-284-5815	ccolby@cvwd.com
Operations and Maintenance Manager	Darlene Telles	626-437-8662	dtelles@cvwd.com
Senior Engineer	Brook Yared, PE	626-590-1020	byared@cvwd.com
Construction Supervisor	Jake Whittaker	818-862-0904	jwhittaker@cvwd.com
Maintenance Worker III	Rob Wood	626-786-1713	rwood@cvwd.com
Maintenance Worker III	Siaki Mortenson	818-468-5570	smortenson@cvwd.com
Maintenance Worker III	Jaysen Ortega	818-468-5667	jortega@cvwd.com

2.3 Organization Chart

Personnel organization charts for normal operation and overflow response and reporting are provided in Appendix 2-B.

3 Legal Authority

3.1 Overview

Crescenta Valley Water District (CVWD) was formed under the provisions of the County Water District Act, Division 12 of the Water Code of the State of California. The District's functions include the acquisition, control, conservation, storage and distribution of water as well as the **collection, conveyance, and disposal of wastewater** for the beneficial use of inhabitants and customers of the District. CVWD issued an ordinance regulating the use of the publicly owned treatment works (POTW) with Board approval of Ordinance LXI on June 2, 1981 when the District was converting to a wastewater collection system. This ordinance established regulations pertaining to connections to the POTW.

CVWD has owned and operated a wastewater collection system on behalf of its customers since the sewers were constructed in the early 1980's. The installation of this collection system was mandated by the Los Angeles Region State Water Resources Control Board (Order No. 76-2). The District does not treat or dispose of this sewage but merely conveys it in a large sewer pipe (interceptor) through the City of Glendale until it reaches the Los Angeles – Glendale Wastewater Reclamation Plant (LAGWRP) located adjacent to the Los Angeles River, southwest of Glendale in the Atwater Village area of Los Angeles. The sewage undergoes treatment at LAGWRP with the treated effluent discharged to the Los Angeles River and the residual sludge transported by large interceptor lines to the Hyperion Wastewater Treatment Plant (HTP) in Playa Del Rey for further processing and ultimate disposal into Santa Monica Bay.

The LAGWRP is jointly owned by the cities of Los Angeles and Glendale and is operated by Los Angeles' Bureau of Sanitation. All downstream interceptors and HTP are owned and operated by the City of Los Angeles. The District entered into a contract with The City of Glendale in 1980 reserving a portion of Glendale's sewage treatment and disposal capacity at LAGWRP for the treatment of wastewater from CVWD.

In 2005, the District ended its agreement with the City of Glendale and entered into a new agreement with the City of Los Angeles for the treatment, conveyance, and disposal of CVWD's wastewater. The new contract with the City of Los Angeles is an amalgamated contract. The District pays for its portion of treatment and capital improvements based on average sewer flow, Biochemical Oxygen Demand strength and Suspended Solids of wastewater flowing through the amalgamated collection system.

On May 2, 2006, the State of California issued a General Waste Discharge Requirement (WDR). The goal of the WDR is to provide a statewide approach for reducing Sanitary Sewer Overflows (SSOs). The WDR outlines these requirements for all publicly owned sanitary sewer collection systems in California with more than one mile of sewer pipe:

- In the event of an SSO, all feasible steps must be taken to control the released volume and prevent untreated wastewater from entering storm drains, creeks, etc.

- If an SSO occurs, it must be reported to the SWRCB using an online reporting system developed by the SWRCB. (Note: All spills greater than 1,000 gallons must be reported to the Office of Emergency Services.)
- All publicly owned collection system agencies with more than 1 mile of sewer pipe in the State must develop a Sewer System Management Plan (SSMP).

The District continues to provide safe and dependable sewer service to meet the needs and requirements of its sewer customers. Sewer service is provided in accordance with *CVWD's Rules and Regulations* (*CVRR*), applicable Federal, State, and local statutes, orders, contracts and regulations, and the terms of the Service Agreement and/or permit issued by the District. The legal authority for CVWD to comply with the WDR is covered in various sections of the *CVRR* and discussed here.

3.2 Boundaries of Public Ownership

Section 9.09 of the *CVRR* identifies the sewer mainline as the sole property of the District and requires that all privately owned portions of the collection system (service laterals and cleanouts) be maintained and kept clean by the property owner. Section 9.09 mandates that, "All of the District's sewer system facilities including, but not limited to, sewers (trunks and mains), force mains and other appurtenances shall be owned, operated, maintained and controlled by the District." Privately owned laterals will not be repaired by the District if the situation necessitating the repair is the result of:

- Abnormal use of such facilities
- Damage done to the facilities by the owner or a third party
- Root intrusion from owner's property

3.3 Illicit Discharge Prohibitions

3.3.1 Prohibited Discharges

CVWD's wastewater discharge regulations are outlined in Section 9.10.B of the *CVRR*. All prohibited discharges are included here:

- Any wastes having a pH less than 6.0 or greater than 9.0; wastewater discharges shall at no time contain any corrosive property capable of causing damage or hazard to structures, equipment, or personnel of the District.
- Any wastewater with a temperature greater than 140 degrees Fahrenheit (60 degrees Celsius).
- Any wastewater exceeding radioactivity limits specified in Title 17, Chapter 5, Subchapter 5, Group 3, Article 5, Section 30287, of the California Administrative Code.
- Any wastes or discharges from a private disposal system such as a septic tank, cesspool, or commercial portable toilet facility.
- Any solids or viscous substances of such size or in such quantity that may cause obstruction to the flow in the sewer or to be detrimental to proper wastewater treatment plant operation. These objectionable substances

may include, but are not necessarily limited to: asphalt, dead animals, offal, ashes, sand, mud, straw, industrial process shavings, metal, glass, rags, feathers, tar, plastics, plasters, wood, medical wastes, bones, flashing, entrails, paper dishes, milk containers, or other similar paper products either whole or ground.

- Any waste discharges with excessively high Biochemical Oxygen Demand (BOD), Chemical Oxygen Demand (COD), or decomposed organic contents.
- Any strongly odorous waste or waste which can create odors in receiving waters or at sewage collection or treatment facilities.
- Any excessive amounts or organic phosphorous-type compounds.
- Any waste containing substances that may precipitate, solidify, or become viscous at temperatures between 50 and 100 degrees Fahrenheit.
- Any waste producing excessive discoloration of wastewater or treatment plant effluent.
- Any water added for purposes of diluting wastes which would otherwise exceed applicable maximum concentration limitations.
- Any waste which may create a fire or explosion hazard in the wastewater collection or treatment system.
- Any waste or wastewater constituents prohibited by Federal or State standards from being discharged to the sewer system.
- Any other wastes or wastewater constituent which may be specifically prohibited or limited in concentration by the District or the City of Los Angeles as a provision of contract(s) for the treatment and disposal of District wastewater.
- Any hospital wastes including "infectious wastes" as defined by the Hospital Council of Southern California as well as disposable hypodermic needles, syringes and other similar articles which may be used in medical or dental practices.

These discharge limits are mainly used for industrial/commercial regulation but residential customers are also expected to comply with the above as well for the preservation of public health. All state and County of Los Angeles limits still apply.

3.3.2 Fats, Oils, and Grease and Debris Discharge

In accordance with California Government Code Section §54739 and Section 9.10.D of the *CVRR*, CVWD retains all rights to operate its own Fats, Oils, and Grease (FOG) Program. Currently, this program is being run in conjunction with County of Los Angeles Department of Public Works' FOG program as defined in Section 64 of the Los Angeles Municipal Code.

This program requires business owners in the area to obtain permits and maintain proper disposal methods for discharges of FOG. CVWD maintains and operates its own FOG control program to better monitor businesses which operate within the District's

wastewater service area. For more information regarding the details of CVWD's FOG control program see *Section 7* of the SSMP.

3.3.3 Industrial Pretreatment Program

Section 9.10.D of the *CVRR* describes the District's policy on industrial discharges in the collection system. Industrial waste discharges from establishments including, but not limited to, auto repair garages, car washes, and dry cleaners are strictly prohibited without first obtaining an Industrial Waste Permit from the County of Los Angeles as shown in Appendix 3-A of this SSMP. This industrial waste permit contains stipulations for the operation of certain machinery as well as the methods for disposal and handling of all hazardous chemicals, and is issued by the County of Los Angeles Department of Public Works Industrial Waste Management Division.

3.3.4 Illegal Service Connections

Sections 9.07 and 9.08 of the *CVRR* regulate the illegal or otherwise unauthorized connection into the publicly owned sewer system. Refer to *Section 3.7* of this document for more details on the penalties for such actions.

3.4 Proper Design and Construction of Facilities

3.4.1 Development Jobs (D-Jobs)

CVRR Section 7.06 gives CVWD the legal authority to permit and monitor sewer work related to new developments within the District's boundaries. The District prepared and issued Design and Construction Standards as part of *Section 5* of this document to act as a guideline for all future development which connects to the CVWD's sewer system. These design guidelines are not meant to act as a replacement for the permitting process outlined in the *CVRR*. Customers are still required to submit construction plans to the District for review and approval.

3.4.2 New Infrastructure

All work carried out within the District, whether it be by an individual or agency, will be performed in accordance with *Section 5* of this SSMP, Design and Performance Provisions. Any contractor employed by the District must work in accordance with the District's contract documents. These contract documents will have pertinent technical information on how all work should be performed as well as information regarding location, permits, traffic control plans, inspection and testing methods.

Whenever new construction for a home or business would necessitate new infrastructure be installed which would extend the existing publicly owned collection system the design of said infrastructure shall incorporate connection points for all sewer laterals which may be served by the infrastructure in the future. The sewer main shall be deep enough to ensure that all dwelling units adjacent to the new sewer main can safely connect to the new infrastructure without the use of any pumping mechanisms. Sample letters including outlined instructions for customers desiring to extend the publicly owned collection system in order to connect to existing collection system are shown in this document in Appendix 3-B.

3.4.3 Legal Authority to Contract Emergency Work

The procedure for hiring a private contractor to perform tasks throughout the District is spelled out in *Appendix Q* of the *CVRR*. In general, this could be a lengthy procedure which requires several interactions with the District's Board of Directors and requires a minimum of three (3) bid proposals. The right of the Board to circumvent these established contracting procedures is clearly defined in the final sentence of Appendix Q, "However, notwithstanding this statement, all contract for work and all contracts for acquisition of materials and equipment, may be made or entered into upon such terms and conditions and in such manner as the Board may determine is in the best interest of the District."

3.4.4 Record Keeping

Before any work in the District is allowed to begin, construction plans shall be signed and stamped by a registered civil engineer in the State of California, clearly showing the existing infrastructure and any proposed changes. The construction plans shall be submitted to CVWD's main office for plan review. The Engineering Department will review construction plans to ensure that there is no conflict with the proposed project and existing District infrastructure. When the construction project is completed, the contractor or homeowner is required to submit as-built drawings detailing the exact location of any new or adjusted infrastructure, which will remain on file at the District as a reference.

3.5 Access to Publicly Owned Collection System

As outlined in *Section 9.02.D* and *9.02.E* of the *CVRR*, the District shall at all reasonable hours have access to sewer facilities owned by the District, which may be wholly or partly located upon customers' premises. Additionally, the District has the right to enter upon customers' premises at any reasonable time for the purpose of inspection, observation, measurement, sampling, and testing of customers' sewer system for wastewater discharge to ensure compliance with the *CVRR*. *Section 9.09* restricts access to the publicly owned collection system to District personnel only.

CVWD shall at all reasonable times have access to its facilities, property, and private properties through which CVWD holds a duly negotiated easement, for the purposes of inspection, measurement, sampling, construction, repair, or maintenance of any portion of District sewer facilities. No obstruction of these facilities including, but not limited to, manholes, sewer mains, sewer laterals, cleanouts, or lift stations is allowed at any time.

3.6 Contract Agreements

3.6.1 Wastewater Treatment Agreement

The District has a contract with the City of Los Angeles Bureau of Sanitation (LABS) for the conveyance and treatment of wastewater at either LAGWRP or HTP. This agreement requires CVWD to monitor all flow traveling from CVWD's collection system to the City of Los Angeles's Publicly Owned Treatment Works (POTW). Flow data within the District is measured at a flow monitoring station located at 526 W. Elk Ave. where samples and flow data are collected by Advanced Data Systems (ADS). The equipment

is operated and maintained by ADS, and quarterly reports are sent to both CVWD and the City of Los Angeles.

3.6.2 Wastewater Conveyance and Operations Agreements

The District has an agreement with the City of La Canada-Flintridge (LCF) for the conveyance of a portion of LCF's wastewater to the LABS controlled POTW. This agreement, outlined in *Appendix I* of the *CVRR*, provides the conditions under which the District will allow for the conveyance of wastewater from LCF. Also outlined, the method of payment for any related improvements, which must be put in place for the District to properly convey the added wastewater as well as a small conveyance charge for all wastewater conveyed through CVWD's collection system, which shall be paid by LCF.

3.6.3 Maintenance Agreements

CVWD currently has no written maintenance agreements in effect. Work is currently being done to develop an agreement between the City of Glendale and the City of La Canada-Flintridge. As soon as an agreement is reached, a copy will be included as *Appendix 3-C.*

3.7 Violations of Sewer Ordinances

3.7.1 Discontinuing Service

As Pursuant to *Section 9.06* of the *CVRR*, the District may disconnect a customer's sewer service for the following reasons:

- Non-payment of Bills
- Obstruction of Service
- Non-Compliance with CVRR
- Non-Compliance with Permitting Requirements
- Unsafe or Hazardous Conditions
- Fraudulent Use of Service

Procedures for the restoration of service are outlined in *Section 9.06.C* of the *CVRR*.

3.7.2 Further Violation

Any person who continues any violation beyond the time limit provided after the discontinuation of their service, shall be guilty of a misdemeanor, and on conviction thereof shall be punishable by a fine not exceeding $500 or by imprisonment for not more than six (6) months, or by both such fine and imprisonment, for each violation. Each day in which any such violation shall continue shall be deemed a separate offense. Any person violating any of the provisions of this Section shall become liable to the District for any expense, loss, or damage brought onto the District by reason of such violation.

4 Operation and Maintenance Program

4.1 Purpose

A wastewater collection system is subject to a variety of operational problems. Depending on the wastewater flow characteristics, surrounding soils condition, and quality of construction, pipelines can suffer from clogging, scouring, corrosion, collapse, and system deterioration. The collection system is designed to serve a specific useful life. Hence, it is the District's responsibility to provide adequate operation and maintenance to maximize the functional benefit of the system's useful life.

CVWD runs a comprehensive Operations and Maintenance (O&M) program to ensure that the entire collection system remains running at a high degree of reliability. Maintenance crews are equipped with standard industry technologies including radio equipped trucks and cellular phones for easy communication, heavy and light construction equipment, vacuum trucks, pumps, generators, a van equipped with closed-circuit television units for interior inspection of sewer lines, and various types of safety equipment. A complete inventory of equipment, material, and spare parts which is updated annually is presented in *Appendix 4-A*.

4.2 Up-to-Date Map of Sanitary Sewer System

4.2.1 General Information

CVWD's wastewater collection system is located in a steep region located in the foothills of the San Gabriel Mountains. The soils in the area tend to be rocky with a mixture of sands and silts, and slopes can sometimes become quite steep with an overall elevation difference of about 2000 feet within CVWD's wastewater service area. The District serves roughly 6,300 wastewater customers. A majority are single family residences with a small portion multi-family residences and general commercial facilities.

4.2.2 Mapping

The District maintains as-built drawings of its sewer system that are utilized as a sewer atlas. These maps are found in a series of hard-copy map books in the Engineering Department located in the Main Office at 2700 Foothill Blvd and at the Glenwood Plant at 3730 Glenwood Avenue. The configuration of the sewer atlas is too large for this report and if needed can be viewed at the District's Main Office.

4.2.2.1 Geographic Information System

CVWD has generated a GIS database for the District's water and wastewater systems. This geodatabase is currently being reviewed for quality assurance. After the verification of all the data in this system is completed, the GIS data will be incorporated into the District's billing system and inventory management, and will also incorporate the District's sewer as-built drawings.

4.2.3 Flow Monitoring

The District has an ongoing flow monitoring program mandated by CVWD's contract, with the City of Los Angeles, for treatment of wastewater. The District has one (1) flow

monitoring site located on Elk St. within the City of Glendale which is monitored by ADS.

4.2.4 Change Management

Any construction work on the District's sewer system will require the submission of As-Built drawings after construction is completed. These As-Built drawings will be added to the District's sewer atlas (map book).

Whenever a change or update is made to an existing map document or a flow location is added or removed, a new map book will be distributed to District staff. The following table provides a list of individuals that possess a map book and the location and last revision date of the map book.

User	Location	Date Dist.
Engineering Dept. (General Use)	Engineering Department (Main Office)	6/27/2019
Senior Engineer	Engineering Department (Main Office)	6/27/2019
Office Staff (General Use)	Customer Service Department (Main Office)	6/27/2019
Operations and Maintenance Manager	Operations and Maintenance Manager's Office (Glenwood)	6/27/2019
Construction Supervisor	Supervisor's Office (Glenwood)	6/27/2019
Maintenance Crew (General Use)	CCTV Truck	6/27/2019
Maintenance Crew (General Use)	Cleaning Truck	6/27/2019

The Engineering Department will be responsible for handling all changes in the District's Sewer Atlas and GIS database. After any spill incident, the GIS database will also be updated to include noting the type of incident and will be linked to any reports and pictures that document the incident.

4.3 Preventative Maintenance Program

4.3.1 Sewer Line Cleaning Program

In the course of its lifetime, a sewer system begins to degrade and collect scale, roots, grease, and other build-up that may lead to clogs in the future. In order to extend the useful life of the collection system and prevent any future stoppages within the District, CVWD utilizes a hydraulic line cleaning program.

Main line cleaning using hydraulic jetting is widely regarded as the most effective way to maintain a collection system and reduce SSOs. While preventing all spills is nearly impossible, utilizing a high-velocity water-jetting system greatly reduces the threat and severity of such spills. While cleaning, all debris is trapped and collected in the downstream manhole, removed and disposed of at an appropriate facility preventing any loosened debris from causing blockages further down the line.

As an integral part of the sewer collection system, sewer manholes require the same degree of inspection and maintenance as the rest of the sewer network. The purpose is to check for defects and damage. All manholes in the District are inspected in tandem with the sewer line cleaning program. The inspection is generally visual, with the inspection

crews checking the manhole cover, ring, barrel, steps, and the bottom surface for any defective condition. Crews also complete an inspection report (*Appendix 4-B)* summarizing the condition of the existing upstream and downstream manholes. *Appendix 4-C* explains, in detail, how the District's cleaning procedures are performed.

4.3.1.1 Cleaning Schedule

The goal of Crescenta Valley Water District's Wastewater Department is to clean the entire wastewater collection system on a tri-annual basis, which will allow for adequate cleaning to prevent SSOs. In order to better schedule and track the cleaning program the District has divided the collection system into three phases consisting of eighteen (18) zones, each zone representing a confluence point in the collection system and all manholes upstream of it. The boundaries of these phases were drawn with these confluence zones in mind.

- Phase one (1) consists of all sewer lines west of Rosemont Ave., and north of Montrose Ave. Maintenance operations shall begin in the northern most section of this phase and proceed downstream making certain not to leave any uncleaned sections upstream of any manhole. All sewer mains in Phase 1 shall be cleaned in the first year of the Cleaning and Maintenance Program.
- Phase two (2) consists of all lines east of Rosemont Ave., including all sewer mains on Rosemont Ave., and north of Foothill Blvd. This phase will be carried out in the same matter as Phase 1. Phase 2 shall be completed by the end of the second year of the cleaning program.
- Phase three (3) consists of all lines east of Rosemont Ave. and south of Foothill Blvd. as well as all sewer mains west of Rosemont and south of Montrose. Finally, as the last phase and southern most phase of the tri-annual cleaning program, the cleaning of the interceptor line shall be included in phase 3. This final phase shall be cleaned in the same fashion as Phases 1 and 2 and shall be completed during the third year of the cleaning cycle.

A map showing the current progress of cleaning is kept in the Construction Supervisor's office and is updated regularly.

Areas in the system where it has been documented that a tri-annual cycle is inadequate will be placed on an enhanced maintenance schedule described in *Section 4.3.4* of this document.

4.3.1.2 Cleaning Equipment Maintenance

The District has a scheduled maintenance program for the Vactor Truck that is used for line jetting. The maintenance activities and frequencies are as follows:

- Annual Vactor Body maintenance (performed by a Vactor authorized repair facility)
- Vactor Body fluid changes as needed (approximately every three (3) months)
- Chasis maintenance every 3-6 months (i.e. break inspection/adjustment)
- All fluids and components replaced as per manufacturer's specifications

- Quarterly crew inspection as per crew inspection form included in *Appendix 4-C*

CVWD purchased a new Vactor Truck in 2017 and will consider the purchase of replacement equipment after ten (10) years of use.

4.3.2 CCTV Inspection

Closed circuit television inspection provides the most positive and reliable information on the internal condition of sewer lines with a diameter between six (6) and twenty-four (24) inches. Permanent records of the inspection can be made by using a DVD recorder. Knowledge of the TV equipment and its capabilities as well as the operator's skill in interpreting the recorded information are both very important.

CVWD's CCTV unit consists of the following components:

- Television camera
- Floodlight
- Camera carrying skids
- Multi-conductor power and video cable
- TV picture monitor
- System power control center or module
- Portable power source, usually a portable generator
- Pulley assembly with two winch stands
- Cable reel and footage meter
- Service truck containing the TV power control and picture monitor
- Sound-powered telephone system
- Video tape recording equipment (optional)
- Digital camera for still picture (optional)
- Overnight cable

A detailed description on how a closed circuit TV inspection operates is given in *Appendix 4-D*.

4.3.2.1 Inspection Schedule

CVWD has established a 10-year maintenance inspection schedule as part of the sewer inspection and maintenance program. Visual inspections of manholes and all debris removed during cleaning occur in tandem with cleaning operations. Should a large amount of debris be found or loose materials seen at the base of the manhole shelf, CCTV inspection shall be scheduled, unless inspection is done for the purpose of dye testing or suspected misuse of the collection system by a resident or business owner, or in response to an SSO.

4.3.2.2 Camera Van Maintenance

The District has a scheduled maintenance program for the CCTV inspection van that is used in CVWD's inspection program. The maintenance activities and frequencies are as follows:

- Generator fluids checked and replenished every twenty (20) hours of operation
- Annual brake and safety inspection
- Chassis maintenance every 3-6 months (i.e. break inspection/adjustment)
- All fluids and components replaced as per manufacturer's recommendations
- Monthly crew inspection as per crew inspection form included in *Appendix 4-D*

Staff will consider the purchase of replacement equipment after ten (10) years of use, and will discuss the upgrade of video logging hardware and software every five (5) years.

4.3.3 Interceptor Maintenance

CVWD controls one large diameter line (18"-27" in diameter) that conveys all wastewater from the District to LAGWRP. This line consistently experiences high flow volumes during the day making it difficult for District personnel to maintain the line during normal working hours. Therefore, all maintenance activities performed on the interceptor line must be scheduled at night between the hours of 10:00 P.M. and 5:00 A.M. The Construction Supervisor shall be responsible to schedule this work and whenever possible give the Maintenance Crew a minimum of two (2) weeks' notice before scheduling inspection. The interceptor main shall be cleaned and inspected every three years.

4.3.4 Enhanced Maintenance Areas (EMA)

CVWD's enhanced maintenance program involves sewer lines that are located in industrial, residential or commercial areas, which have a tendency to accumulate scale and grease much faster than normal. EMA's are also located in heavy traffic areas that may develop sags, and sewer mains along tree lined parkways in residential areas, which could develop root intrusion creating common clogging problems. EMA's are also placed in areas constructed outside of CVWD's design parameters (i.e. flat sewers).

The EMA program involves the control of other problems, such as odors, corrosion, and insect and rodent infestations. The Construction Supervisor keeps up-to-date records that track prior maintenance of all EMA's on a spreadsheet. Items on this list are cleaned and inspected at least once annually with further maintenance activities being determined on a case by case basis by the Wastewater Department. The EMA record is included in *Appendix 4-E*.

4.3.4.1 EMA Review Schedule

In the wake of a sewer emergency or SSO, the frequency of cleaning and inspection will be reviewed to determine if the location of the emergency should be included in the EMA list. Otherwise, the Wastewater Department shall review the cleaning and inspection methods and schedule after the completion of every maintenance cycle as defined in *Sections 4.3.1.1* and *4.3.2.1*. The EMA cleaning list is subject to change after the review of CCTV inspection footage. The list will be updated in this document tri-annually upon completion of each sewer main cleaning and inspection cycle.

4.3.5 Alternative Cleaning Methods

4.3.5.1 Odor Control Strategy

Most sewer odors can be controlled in a properly designed, cleaned and maintained collection system. Usual causes of odors are low velocity flows, long transmission lines in the collection system, high temperatures, and poorly maintained collection systems. There are a variety of methods for controlling the odor problem in a wastewater collection system such as an odor masking agent, usually consisting of a water base and an oil carrier of a perfume scent which can be used to mask the objectionable odor. However, it does nothing to eliminate the dangerous gas or decrease off-gas production.

In most circumstances in the District where an odor problem exists, adding the area to the EMA list is sufficient to minimize the odor. If the odor issue is persistent, depending on the gases being emitted, utilizing aeration and a dosage of hydrogen peroxide are two of the most effective means of odor control, but are not always feasible. Chemical treatment of the wastewater can also be effective for short periods.

The Operations and Maintenance Manager will review issues with the Wastewater Department before any odor control measure is used in the collection system.

4.3.5.2 Chemical Dosing

Chemicals can be very helpful aids for cleaning and maintaining the wastewater collection system. Proper application of the right chemicals can be very effective to control root intrusion, odors, corrosion, and rodent and insect infestations. A chemical dosing program should be developed for this purpose.

There should be thorough evaluation and planning in preparing a chemical dosing program. The following items shall be addressed prior to beginning a chemical dosing program:

- Chemicals cannot clear stoppages or blockages in sewer lines.
- Chemicals can have high costs, therefore, cost effectiveness must be considered.
- Chemicals may be hazardous to employees, treatment processes, the public and the environment.

Some vendors make elaborate claims for chemicals unproven in actual sewer cleaning situations. Therefore, it is important that field demonstrations be required from prospective suppliers. Use of chemical dosing shall be submitted to the Operations and Maintenance Manager for approval prior to use.

4.3.5.3 Vector Control

A vector is an insect or rodent that transmits disease such as mosquitoes, cockroaches and rats. If not properly maintained, a collection system is capable of fostering communities of vectors. Certain manholes are more susceptible to vector colonies. The District treats problem manholes with a chemical that prevents possible disease carrying insects and rodents from infesting the top six to ten feet (6-10 ft.) of a manhole which prevents the spread of vectors into the community via the collection system.

4.3.5.4 Root Foaming

Beginning in 2018, CVWD has employed an EPA approved herbicide in sewer mains that have significant root intrusion. Herbicidal foam is applied to the sewer main, compressing against pipe surfaces and penetrating cracks, joints and connecting sewers, destroying any roots it comes in contact with. The herbicide comes with a 2-year warranty, which makes it an effective low cost alternative to frequent sewer line cleaning.

4.4 Lift Station Operation and Maintenance

Lift stations become necessary when gravity lines low elevation areas need pressure assistance to make it to a treatment facility. CVWD has one (1) lift station, the La Granada Lift Station, in its collection system and the lift station is continuously monitored via SCADA. Monitoring parameters include, but are not limited to:

- Power status (power failure).
- Wet well status (high well).
- Entry alarm (on the Remote Terminal Unit).
- Pump status (pump on/off)

The signals from the telemetry system are monitored at the Glenwood Operations Facility. The telemetry system is maintained in proper working order by CVWD's Operations and Maintenance Manager, Construction Supervisor and system operators. Additionally the engineering staff is available to assist in maintaining the telemetry system.

The system controls are monitored and controlled remotely with the assistance of the District's SCADA system.

4.4.1 Lift Station As-Built and Spare Parts List

The District's pump station as-builts drawings are available for review at the Engineering Department and are not included as an appendix to this document. Another copy of the as-built drawings is stored at the Glenwood Operations Facility for use by the Maintenance Crew. This document must be consulted before any work is allowed to begin on the lift station to ensure that all safety procedures are followed.

4.4.2 Lift Station Maintenance

The District's Lift Station located at 2200 La Granada Way is inspected on a weekly basis. The lift station is connected via an active SCADA connection at the site to the District's SCADA system. If a SCADA alarm signals a problem at the lift station, the Maintenance Crew or, during after-hours, stand-by personnel will respond and inspect the lift station immediately to assess the situation and setup pump bypassing equipment if necessary.

In addition to the weekly inspection, an in-depth inspection is performed on the lift station semi-annually. A short checklist is provided in *Appendix 4-F*.

- Before any work is allowed to begin, bypass pumping must be set in place to prevent the lift station wet well from overflowing and causing an SSO.
- Check Telemetry to ensure that it is communicating with the SCADA system.
- Ensure that the air relief valve is working properly and clear of debris.

If it is necessary to remove the pump for repairs, crews are required to disconnect all electrical power and install a lock-out tag-out device at the lift station. In addition, to ensure that the pump is removed properly, follow these steps.

- Loosen and remove the drive belts that interconnect the pump and motor.
- Operate the discharge plug valve(s) and suction plug valves to hydraulically isolate the pump to be removed.
- Drain the pump and disconnect the suction and discharge piping.
- Remove the nuts and washers that secure the pump housing to the pump station base.
- Use the lifting eye provided at the drive end of the pump to hoist the pump from the station.
- Installation of the pump is the reverse of removal. Tighten the mounting nuts securely. Adjust belt tension as described above.

4.4.3 Record Keeping

The Wastewater Department keeps records of operation and maintenance performance indicators such as:

- Equipment run hours.
- Reliability history.
- Maintenance and calibration history.

4.5 Rehabilitation and Replacement Plan

It is important in an effective preventive maintenance program to prioritize repairs according to uniform criteria in order to make well-informed decisions.

4.5.1 Condition Assessment Program

CVWD has a five (5) level defect coding system in place in order to prioritize the level of repair and urgency of the repair. Defect coding helps to minimize errors that arise out of subjective decision making and thereby eliminate different interpretations of pipe defect. This coding system has reference drawings to assist the Maintenance Crew in giving more accurate infrastructure damage assessments. For more on the District's Defect Coding estimation sheet please see *Appendix 4-G*.

4.5.2 Program Implementation

Currently, CVWD has been able to repair all damaged portions of the collections system in a timely manner after any such deficiencies are found. Any project that is estimated to cost over $100,000 dollars (i.e. insituform relining, hydraulic upgrades, main replacement) shall be deemed a Capital Improvement project and shall be scheduled by the Engineering Department as soon as the project is practicable. The implementation of capital improvements based on capacity analysis is described in *Section 8.6*.

4.6 Design Considerations for Operational Control

Operation and maintenance is a major concept for the design engineer to incorporate into any design. A properly designed wastewater collection system will minimize operation and maintenance problems as well as keep construction costs at a minimum. While

maintenance problems can be expected, there are recognizable ones that are design-related. For a complete discussion on design standards, refer to *Section 5: Design and Performance Provisions.*

As a general rule, design engineers and contractors should adhere, as closely as practical, to CVWD's design standards and accepted codes of practice. Any deviation from these standards should always be done after consultation with Engineering Department.

4.7 Data Management

Record keeping is also vital to the success of the District's sewer maintenance program. The District tracks the number of times a sewer line has been inspected and cleaned, see *Section 9.3*, and the number of overflows and backups a sewer line experienced. This information helps the District prioritize sewer-line maintenance based on performance and adapt a more appropriate time schedule for cleaning and inspecting the sewer lines.

4.8 Training for Sanitary Sewer System Staff and Contractors

District training comes in many forms. It includes formal classroom training, informal on-the-job and hands-on training, attendance at conferences, site visits to vendor facilities and additional methods to train and educate CVWD's Wastewater Department.

4.8.1 New Employee Training

CVWD understands that new employees cannot be expected to know all facets of the job before they are brought onto the crew. The equipment and methods used by CVWD's crew are highly specialized and requires a high level of expertise to handle. Therefore all new employees will be provided initial training, within one year of being hired, to:

- Perform a Confined Space Entry.
- In-house Vactor truck and sewer main cleaning training.
- In-house training on using CCTV hardware and software.
- Emergency Response Training.
- Obtain entry level certification as a collections system operator.

Additionally, within the first year of hiring, crew members will review the SSMP with the Engineering Department and shall be shown the location of all maps and response documents.

4.8.2 Existing Employee Training

CVWD's Wastewater Department requires that all wastewater employees receive OSHA required training that is related to their job. This training includes confined space entry, CPR, first aid and emergency response. Training for ongoing employees is performed as follows:

- Confined Space Entry – Once every two years
- SSMP Review and SSO Response Training – As-needed
- All Contact hours necessary to maintain licensing – Annually
- Emergency Response Action Plan table-top exercise – Annually

In addition, Wastewater employees are encouraged to attend skills training sessions which are pertinent to their job duties. These training sessions are scheduled at the discretion of the Operations and Maintenance Manager and Construction Supervisor. See *Section 9.5* for record keeping details.

4.8.3 Training Records

Attendance records shall be kept for all staff training sessions. Sign in sheets are used as a record of personnel available for standby emergency response support. If training is performed offsite, continuing education units must be provided as part of that training and the course must be approved by the Construction Supervisor or Operations and Maintenance Manager. Personnel that did not complete training to the satisfaction of the Operations and Maintenance Manager shall only be contacted for response activities in extreme circumstances. Attendance Records are maintained and recorded by the Operations and Maintenance Manager.

4.9 Budget and Resources

4.9.1 Rates and Charges

CVWD's staff prepares a budget every year based on the costs from City of Los Angeles, the cost for operations and maintenance, expenses and capital improvement costs to maintain the system. From this budget, wastewater rates are established, using a cost of service study, so that each customer pays a fair and equal share of the cost.

The budget and costs are reviewed on an annual basis and the wastewater rates are adjusted accordingly. In addition, staff estimates wastewater rates five (5) years into the future to minimize large rate increases.

4.9.2 Operating Budget Projection

The wastewater operating budget is heavily dependent on the cost of sewage treatment and amalgamated sewerage system contribution that CVWD pays to the City of Los Angeles. In the past, these expenses represented 57% of the total operating budget. These costs can vary by up to $685,000 in a given year. Cost increases are largely due to the City of Los Angeles' Capital Improvement Project schedule which they review each year with stakeholders. Currently for FY 20/21, CVWD project budget is being reevaluated in conjunction to the development of CVWD's Wastewater Master Plan which will be the District's first WWMP since the collection system was installed in the early 1980's.

5 Design and Performance Provisions

5.1 Standards of Construction

All sanitary sewers shall be designed and constructed in accordance with the District's Standards of Construction Manual located in *Appendix 5-A*. By reference, CVWD's Design Manual incorporates the Standard Specifications for Public Works Construction (SSPWC). While the Construction Manual does make implications on design (i.e. the District only allows the installation of prefabricated wye fittings when connecting from a private lateral to a public sewer line), it does not replace the need for planning, preparation and design checking. The final design of any development or improvement project must be signed by a licensed civil engineer registered in the State of California and submitted to the District's Engineering Department for review and approval. In addition, the District has provisions, such as Special and Technical Provisions specified in the contract documents that are provided to a contractor as part of a bid package.

5.2 Design Guidelines

A complete set of standard construction drawings are provided in *Appendix 5-A*. District Standard Drawings by reference incorporate the District's General Provisions, Design Guidelines provided below and in the SSPWC.

5.2.1 Gravity Main Design Guidelines

CVWD's collection system is made up almost entirely of gravity sewer mains. The following are guidelines only and do not preclude any developer and/or contractor from the following plan check and/or permit requirements:

- **Main Location** – A sewer main located within a public right-of-way or easement shall be at least ten (10) feet horizontally from and one (1) foot lower than water mains located parallel to the main (measured outside diameter to outside diameter). A sewer main shall also be located at least five (5) feet horizontally from all other facilities. Sewer manholes shall be located at the beginning and end of each sewer main segment.
- **Pipe Sizing & Minimum Velocity** – The diameter of the sewer main shall be sized to have a minimum velocity of 2.5 fps and a maximum velocity of ten (10) fps.
- **Pipe Slope** – Pipes within the District shall have a minimum slope of 2% and a maximum slope as not to exceed maximum velocity as stated above.
- **Pipe Material** – The pipe material used in the construction of gravity sewers of eight (8) inch diameter up to and including twenty-seven (27) inch diameter pipe shall be vitrified clay; unless otherwise approved by the District. Wherever possible pipe materials shall be the same material as the existing sewer main unless otherwise specified by the District.
- **Lateral Connection to the Public Main** – All sewer lateral connections to the public main shall be done in accordance with CVWD Std. Dwg 10-S, and shall include a pre-fabricated wye fitting and the size of the service lateral shall never exceed the size of the main.

- **Manhole Size & Depth** – Manholes shall be forty-eight (48) inches in diameter and a minimum of six (6) feet deep as per CVWD Std. Dwg 20-S.
- **Manhole Spacing** – Manholes shall be spaced a maximum distance of 300 feet apart.
- **Manhole Placement** – Manholes shall be placed where there is a significant change in vertical or horizontal direction and where two or more sewer lines merge. Sewers should intersect in manholes at deflection angles not greater than 90 degrees. In the event that this is impractical, the design engineer shall submit adequate proof to the District that the manhole location will be adequate to convey estimated quantities of wastewater and provide for proper maintenance access.
- **Drop Manholes** – A drop pipe shall be provided for a sewer entering a manhole at an elevation greater than thirty (30) inches above the manhole invert per CVWD Std. Dwg. 21-S. Where the difference in elevation between the incoming sewer and the manhole invert is less than 2.5 feet (30 inches), the invert shall be filleted to prevent solids deposition.
- **Sewer Depth** – Sewer infrastructure shall not exceed 30 feet in depth from finished surface. Any sewer main that has over 30 feet deep of cover shall be submitted to the District for review and approval on a case-by-case basis.
- **Manhole Base and Shelf** – All manhole bases shall be cast in place unless otherwise approved by the District. Manhole shelves shall be precast concrete unless the depth of the manhole necessitates otherwise and is approved by the District.

5.2.2 Lift Stations, Force Mains, and Ejector Pumps

There is currently one (1) lift station within the District's collection system boundary. It is a wet well design with redundant pumps and a full enclosure. There is no foreseeable need for a new lift station in the system and no guidelines have been compiled. Special design of sewer force mains, lift stations and other unusual features or structures require individual study, review and approval by the District.

Lift stations shall not be permitted unless specifically approved by the District in advance of submittals for plan check. Ejector sump pumps may be used by private contractors/developers on private property. It is the sole responsibility of the property owner to maintain the on-site ejector pump system.

5.3 Awarded Contracts

District sewer mains shall be constructed or repaired by a private contractor(s) under contract to CVWD. The contract shall be awarded to the lowest responsible bidder in accordance with Public Work's bidding procedures set forth by CVWD's Board of Directors and CVWD's Rules and Regulations. Upon award of the contract the District Engineer or General Manager shall assign a project manager to the task. Other agencies, including private utilities, shall be allowed to give input regarding the work to be done

prior to construction beginning. Good public relations, coordination, and liaison shall be a requisite in CVWD's duties prior to, during, and after construction.

5.4 Private Development Criteria

5.4.1 Contractor Licensing

Contractors performing work within the boundaries of the Crescenta Valley Water District shall possess the following classes of a contractor's license issued pursuant to Division 3, Chapter 9, of the Business and Professions Code of the State of California: A, and/or C-42. The contractor shall certify that the license(s) specified are the classification(s) of contractor's license required by law to enable the contractor to perform the work. The contractor shall provide the District with their contractor's license number and expiration date as provided in the Proposal, and shall present satisfactory evidence that they are licensed in good standing.

5.4.2 Main Line Extension Requirements

When a customer or developer desires to connect to CVWD's public sewer system which is within the District's service area, there may be a need to extend the existing publicly owned portion of the sewer. In all newly developed areas and/or in all existing areas where new sanitary sewers are required, the private engineer shall provide proof, including hydraulic modeling scenarios and applicable calculations, that CVWD's sewer system possesses the size and capacity to adequately accommodate the new facilities at the ultimate anticipated conditions.

5.4.3 Submittals and Final As-Builts Prior to Acceptance

For any new development, engineering calculations used for the design of all proposed sanitary sewer systems shall be submitted to CVWD's Engineering Department for review and approval. The calculations shall include the following items:

- A plan showing proposed street system, existing and future tributary areas, current zoning, projected land use, and any feature affecting the system design.
- Design flows including flows coming from outside the project limits.
- Pipe capacities, design flow, the amount of full pipe capacity used for each sanitary sewer reach, and hydraulic profile for each pipe.
- Location of all lateral locations. Lateral connections shall be capped after construction of the mainline until a customer connects the private lateral.
- Pipe size, length, slope, Manning's roughness coefficient (n), rim and invert elevations, based on CVWD's datum, of all proposed lines and locations of manholes and cleanouts.
- Analysis of the impact of the proposed development on the existing sanitary sewer system capacity. If the existing sewer system is under capacity, the developer is responsible for upgrading, repairing, or replacing the sewer pipes as a part of the conditions of approval on the sewer permit.

- Prior to acceptance of the sewer mains by the Board of Directors, final as-built sewer improvement plans shall be submitted to the CVWD's Engineering Department in AutoCAD™ files (unprotected, not read only or password protected).

5.5 Permitting and Easements

The streets above the collection system are owned and operated by the City of Glendale, City of La Canada-Flintridge, or the County of Los Angeles. Any time any work is being performed in these areas, care and consideration shall be taken to obtain all necessary permits from these agencies as defined in the terms for the agreements between the District and each of these respective agencies as contained in the *CVRR*.

Before work may begin, a street use, excavation, or encroachment permit must be obtained and may be required by additionally insured agencies. All such permits will be obtained by the contractor prior to the start of work. Unless otherwise specified, permits will be obtained at the expense of the contractor or customer involved.

5.5.1 Insurance

The contractor shall provide to CVWD, the City of Glendale, the City of La Canada-Flintridge, and/or the County of Los Angeles certificates of insurance for worker's compensation and employer's liability, comprehensive commercial liability for at least $5,000,000 per occurrence, and comprehensive automobile liability for at least $5,000,000 per occurrence for the project. In addition, CVWD, the City of Glendale, the City of La Canada-Flintridge, and the County of Los Angeles shall be named as additional insured on the certificates.

5.5.2 Inspection

At the end of any permitted work the District requires that its personnel be notified and allowed to inspect all work prior to any excavations being backfilled to verify the quality of work. A permit fee will be charged prior to work being allowed to begin. The permit cost will be returned to the owner, less the cost of CVWD's administrative and inspection fees as outlined in *Section 3.4.*

5.6 As-Built Drawings

At the end of any work completed within the District's service area, as-built drawings must be submitted to the District showing any changes that were made to the sewer collection system. CVWD's staff shall be responsible for including these updates in the engineering map room and all electronic files unless this was otherwise stipulated in contract documents.

5.7 One Year Guarantee

The contractor shall guarantee against defects in workmanship or materials for a period of one year after the CVWD's acceptance of the work for all work performed as part of a contract agreement with CVWD. The contractor shall repair or remove and replace any and all such work, together with any other work which may be displaced in so doing, that is found to be defective in workmanship and/or materials within said one-year period, without expense whatsoever to the District, ordinary wear and tear, and unusual abuse or neglect excepted.

In the event of a failure to comply with the above-mentioned conditions within seven (7) days after being notified in writing, the District is hereby authorized to proceed to have the defects remedied and made good at the contractor's expense. The contractor agrees to pay all such expenses immediately on demand therefore by the District.

If, in the opinion of the District, defective work creates a dangerous condition, or requires immediate correction, or attention to prevent further loss to CVWD, or to prevent interruption of its operations, or in the event that the contractor cannot be contacted, or does not comply with the District's request for correction within a reasonable time as determined by CVWD, then the District may, notwithstanding the provisions of this article, proceed to make such correction or provide such attention. The costs of such correction or attention shall be charged against the contractor, and shall be paid immediately upon demand therefore by CVWD. Such action by the District will not relieve the contractor of the warrantees and guarantees required by CVWD’s SSMP.

6 Overflow Emergency Response Plan

6.1 Purpose

Crescenta Valley Water District has a formal emergency response plan for sewer emergencies in case a sewer system overflow (SSO) should occur. The response plan has both "Working Hours Response Procedures" and "After Working Hours Response Procedures." The hour at which a sewer overflow emergency occurs is the determining factor regarding which set of procedures will be followed.

- If the emergency occurs during working hours, Monday through Friday, between 7:00 am to 4:30 pm, staff will implement "Working Hours Response Procedures." as referred *to Section 6.4.1.1* of this document.
- If the emergency occurs after working hours, Monday through Friday, between 4:30 pm to 7:00 am and all day on Saturday, Sunday or Holidays, staff will implement "After Working Hours Response Procedures." as refered *to Section 6.4.1.2* of this document.

6.2 Decision Process and ERP Activation

6.2.1 Communication Procedure

The declaration of an emergency is made by management staff when it is deemed that a situation warrants immediate response. Before management staff can make an informed decision they must determine what the circumstances are, determine the capabilities of the personnel available, and determine whether the emergency is incidental or warrants an emergency response. Events that may warrant an emergency response are as follows:

- A natural or man-made disaster
- A state of emergency affecting CVWD as declared by the Governor
- A local emergency as declared by the City of Glendale, County of Los Angeles, City of Los Angeles, or City of La Canada-Flintridge City Council or City Manager
- An emergency as declared by Los Angeles County Supervisor's office

If there is a question about commencing emergency procedures, contact the Construction Supervisor. If he cannot be reached, contact a member of the management staff (phone numbers provided below).

It is important for wastewater emergency response personnel to understand who has the responsibility and authority to make the appropriate contacts to outside agencies and what the procedures are for communications and notification.

A Wastewater Overflow Response Organization Chart hierarchy of communication can be found in *Appendix 2-B*. This structure shall be used to facilitate the communication of major and minor sewer related incidences to all members of the District as well as all emergency response offices. Contact information for all local agencies and knowledgeable office personnel is provided below.

It will be the responsibility of the Construction Supervisor, or the most senior Maintenance Crew member on site, to estimate the severity of a spill. A spill flow

estimation card (*Appendix 6-A*) is located in the Vactor Truck, CCTV inspection van, and Emergency Response Trailer as a reference for estimation.

6.2.2 Internal Notification

When an SSO or complaint is reported, the following is a list of contact information of all CVWD personnel that need to be notified of the emergency. In order to prevent errors in emergency response related to communication, contact the management staff at the main office or on their mobile phones immediately.

Upon receiving notification of an SSO, the staff member involved should immediately e-mail the management group informing all staff that an SSO is underway and the precise location of the incident.

WORKING HOURS CONTACT (7:00 A.M. – 4:30 P.M.)

Main Office – Regulatory and Public Affairs Manager	
or Senior Engineer	(818) 248-3925
Glenwood Facility- Operations & Maintenance Manager	(626) 437-8662

The office is closed on major holidays and weekends. If the main office is closed please proceed to contacting personnel using the after-hours numbers provided below.

AFTER HOURS CONTACT (4:30 P.M. – 7:00 A.M.)

Personnel Position – Name	**24-hour Contact**	**E-mail**
After Hours Emergency Number	818-249-2185	
Construction Supervisor – Jake Whittaker	818-862-0904	jwhittaker@cvwd.com
Director of Engineering and Operations – David S. Gould	818-284-5813	dgould@cvwd.com
Regulatory & Public Affairs Manager – Christy J. Colby	818-284-5815	ccolby@cvwd.com
General Manager – Nemesciano Ochoa	562-569-2058	nochoa@cvwd.com
Non-life Threatening Emergency Hotline	311	

Emergency contact information and a communication organization chart is included in *Appendix 2-B*.

6.2.3 External Notifications

Damage to the District's wastewater collection system must be communicated to all of the District's mutual aid partners as well as reported to State agencies and emergency responders as shown below.

Table 6-1: Notification Summary

Category	Definition	Agencies to Notify	Type and Time frame	
			Comments	**Written Report/ Online Reporting**
I	Results in discharge to drainage channel and/or surface water **And/or** Discharge to a storm drain pipe and not fully captured and returned to the sanitary sewer system	California Office of Emergency Services (COES) (800) 852-7550	Call COES within 2 hours of the agency being first notified	Not Applicable
		Los Angeles County Flood Maintenance Division (LACFMD) (800) 675-4357	Call LACFMD, after Contacting COES If wastewater is expected to enter into a drainage channel	Not Applicable
		State Water Resources Control Board (SWRCB) - Online only at the California Integrated Water Quality System (CIWQS) (https://ciwqs.waterboards.ca.gov/)	Report on SWRCB website when SSO is discovered and reporting is possible without impeding operations related to clean up and the protection of public health.	**Draft Online Report** - no later than 3 business days after notification of SSO **Final Online Report** – Within 15 calendar days of conclusion of the SSO response and remediation. More Information upon request
II	Discharges of 1,000 gallons or greater resulting from SSO that does not reach surface water or drainage channel, unless the entire SSO discharged to the storm drain system is fully recovered. (Spills greater than 50,000 gallons, refer to *Section 6.4.4*)	COES (800) 852-7550	Call COES within 2 hours of the agency being first notified.	Not Applicable
		LACFMD (800) 675-4357	Not Applicable	Not Applicable
		SWRCB Online only at CIWQS	Report on SWRCB website when SSO is discovered and reporting is possible without impeding operations and clean up.	**Draft Online Report** - no later than 3 business days after discovery of SSO **Final Online Report** – Within 15 calendar days of conclusion of the SSO response and remediation. More Information upon request
III	Spills under 1,000 gallons that does reach a drainage channel or surface water	COES (800) 852-7550	Call COES within 2 hours of the agency being first notified.	Not Applicable
		LACFMD (800) 675-4357	Not Applicable	Not Applicable
		SWRCB Online only at CIWQS	Report on SWRCB website when SSO is discovered and reporting is possible without impeding operations and clean up.	**Final Online Report** – Within 30 days after the end of the calendar month in which the SSO occurred.
Private lateral SSO	Non-mandatory reporting of private lateral spills.	COES (800) 852-7550	Not Applicable	Not Applicable
		LACFMD (800) 675-4357	Not Applicable	Not Applicable
		SWRCB Online only at CIWQS	Report on SWRCB website when SSO is discovered and reporting is possible without impeding operations and clean up	**Final Online Report** – Within 30 days after the end of the calendar month in which the SSO occurred.

Note: If there are no SSOs during a given month submit a No Spill Report through California Integrated Water Quality System (CIWQS) online database reporting.

EMERGENCY MANAGEMENT AGENCIES:	Contact #	Availability
California Office of Emergency Services (COES)	(800) 852-7550	24 hours, daily
Los Angeles County Department of Public Health	(213) 974-1234	24 hours, daily
Los Angeles County Flood Maintenance Division - Pickens Yard:	(818) 248-3842	7 am – 4 pm, M-F
LOCAL FIRE DEPARTMENT:		
Los Angeles County Fire Department - Emergency Dispatch:	(818) 793-7176	24 hours, daily
LOCAL LAW ENFORCEMENT:		
Los Angeles County Sheriff – Crescenta Valley Station:	(818) 248-3464	24 hours, daily
California Highway Patrol – Glendale Station:	(818) 240-8200	8 am – 5pm, M-F
California Highway Patrol – Altadena Station:	(626) 296-8100	8 am – 5pm, M-F
California Highway Patrol – After Hours Hotline	(323) 589-3200	24 hours, daily
LOS ANGELES COUNTY DEPARTMENT OF PUBLIC WORKS:		
Los Angeles County Pretreatment Program:	(626) 458-3517	7 am – 5 pm, M-Th
Emergency Sewer Response:	(800) 675-4357	24 hours, daily
FOOTHILL MUNICIPAL WATER DISTRICT:	(818) 790-4036	8 am - 4pm, M-F
Emergency After Hours:	(818) 790-4051	24 hours, daily
Operations Office:	(818) 794-6074	8 am - 4pm, M-F
CITY OF GLENDALE:		
Public Works:	(818) 548-3900	7 am – 4 pm, M-F
Water & Power:	(818) 548-2011	24 hours, daily
Police Department:	(818) 548-4911	24 hours, daily
Fire Department:	(818) 956-6404	24 hours, daily
CITY OF LA CANADA-FLINTRIDGE:		
Main Office:	(818) 790-8880	7 am – 5 pm, M-Th
Public Works:	(818) 790-8882	7 am – 5 pm, M-Th
After Hours on Foothill Blvd. (Los Angeles County Sanitation District)	(562) 437-6520	24 hours, daily
After Hours Remainder of LCF (Los Angeles County DPW)	(626) 458-4357	24 hours, daily
CITY OF LOS ANGELES:		
Bureau of Sanitation Hotline:	(213) 485-7575	24 hours, daily
CALIFORNIA DEPARTMENT OF TRANSPORTATION:		
Hazardous Waste Management:	(800) 728-6942	24 hours, daily
SOUTHERN CALIFORNIA EDISON:		
Main Emergency Line:	(800) 611-1911	24 hours, daily
LOS ANGELES COUNTY SANITATION DISTRICT:		
Emergency - After Hours:	(562) 437-6520	24 hours, daily
MEDICAL CARE FACILITY:		
Verdugo Hills Medical Center – Urgent Care:	(818) 249-9454	24 hours, daily
ProHealth – Normal Hours	(818) 246-4800	24 hours, daily
Local Red Cross - Glendale Chapter:	(818) 243-3121	8:30am – 4:30pm, M-Th
EMERGENCY CONTRACTORS:		
J. De Sigio Construction:	(626) 480-8900	8 am – 4 pm, M-F

6.3 Collection System and Personnel Overview

6.3.1 General System Information

The District's wastewater service area covers all of La Crescenta as well as portions of Montrose and La Canada-Flintridge. In total, the Wastewater Department is responsible for the maintenance and emergency response of approximately sixty-six (66) miles of pipe including about 1,200 manholes and one (1) lift station. Approximately 6,300 wastewater accounts are served by the CVWD's collection system. While the District is not responsible for private laterals connecting into the system, CVWD emergency response teams are ready and available to help customers manage sewer spill emergencies as outlined in *Section 6.4.1*.

6.3.2 Wastewater Personnel

The Maintenance Crew is comprised of a Construction Supervisor and two maintenance workers. Also, the Engineering Department provides support to the Wastewater Department. Reporting of all spill events is managed by the Regulatory and Public Affairs Manager and Senior Engineer.

Adequate staff is placed on standby status to supplement existing staff as needed in response to an emergency after hours. During an SSO emergency, including after hours spill response, additional personnel can be used from the potable water crews to assist in spill containment and flow reinstatement. All members of the Wastewater Department should be contacted at the time an emergency is declared. Contact information can be found in *Section 2.2.3* of this SSMP.

6.4 Response, Restoration and Recovery

6.4.1 Spills in the Public Right-of-Way – General Procedures

Prior to addressing an SSO, crews shall take care in setting up traffic delineations. All crew members have been provided a copy of the most recent release of the WATCH traffic control handbook and all necessary equipment to set up proper delineation. Crews should make certain to follow these traffic control guidelines. While setting up traffic control and beginning preparation to contain the spill, crew members shall take time to inform any members of the public that may have gathered around the scene about the situation. If there is need for more traffic control, current traffic control is overburdening the flow of traffic, or a large crowd has formed impeding emergency response, the California Highway Patrol shall be contacted for further assistance, (626) 296-8100.

If a spill occurs on a public right of way, use the following as a guideline to the actions taken in response:

- Prevent wastewater from entering into nearby storm drains or drainage channels.
- Correct the cause of the spill (blockage, pump station failure).
- Clean-up the overflow site.
- Clean-up of the site requires three steps:
    1. Thorough cleaning of site and removal of debris.
    2. Disinfecting of site.
    3. Determination of size of spill (estimated volume of flow & affected area).

All problem sewers shall be inspected as soon as possible by CCTV inspection, a minimum of 48 hours after the initial occurrence of an overflow, to identify any necessary repairs or special

maintenance needs. A sewage stoppage report and line inspection form will be generated by the Wastewater Department to document all work done, *Appendix 4-B*. Proper notification will also be given to California Office of Emergency Services (COES), and all appropriate data will be submitted to SWRCB online via the California Integrated Water Quality System (CIWQS).

6.4.1.1 Normal Operating Hours

Upon receipt of an emergency response situation occurring Monday through Friday between 7:00 A.M. and 4:30 P.M., holidays excluded, the following procedures shall be used when responding to all sewer overflow emergencies during normal working hours:

A. Emergency call received at the main office (if the emergency is noticed by personnel in the field, employees should notify the District's main office immediately).

B. Senior Engineer, in his or her absence the Regulatory and Public Affairs Manager or District Engineer is to notify all appropriate regulatory agencies that recovery phase is underway and contact Construction Supervisor.

C. Construction Supervisor is notified/dispatched to the site of the emergency. In the absence of the Construction Supervisor, contact the Operations and Maintenance Manager.

D. Construction Supervisor to notify Maintenance Crew of the emergency. A communication flow chart is provided in *Appendix 2-B* to help make communication easier in case of an emergency.

E. Maintenance Crew action

1.) Evaluate the situation and determine what resources are needed to resolve it (i.e. crew, cleaning truck, traffic control, emergency response trailer etc.).

2.) Determine the cause of the Overflow:

a. Determine if the overflow emergency is a main line that the District is responsible for maintaining or if it is a private lateral overflow.

b. A private overflow is defined as a sewer spill that is COMPLETELY contained on private property with no threat of entering into a U.S. Water Way or into the public right of way. See *Section 6.4.2*.

3.) Commence preliminary steps (i.e. contact any additional responders, deploy the vactor truck and emergency response trailer, set up traffic control measures etc...) to mitigate the overflow as outlined in the emergency action plans in *Appendix 6-C*.

4.) Take steps to protect the health and safety of the public and everyone involved in the emergency response.

5.) Use the Spill Estimation guide, *Appendix 6-A*, to estimate the amount of sewage that overflowed.

6.) Determine the cause of the overflow. This may require the use of CCTV equipment. Inspection equipment should only be utilized after the spill has been contained.

7.) Take pictures of the sewer overflow site.

F. CCTV inspect as soon as possible without hampering emergency response.

6.4.1.2 After Hours

These procedures pertain to sewer overflow emergencies occurring after hours between 4:30 P.M. – 7:00 A.M. After hours procedures shall also be employed on holidays and weekends (any time the main office and Glenwood Operations Facility are closed).

The following procedures are to be followed when responding to all sewer overflow emergencies that occur after normal business hours:

A. Emergency call received by standby duty employee.

B. Construction Supervisor is notified/dispatched to the site of the emergency. In the absence of the Construction Supervisor contact the Operations and Maintenance Manager.

C. Construction Supervisor to contact Maintenance Crew, Regulatory and Public Affairs Manager and Senior Engineer as outlined in *Appendix 2-B* on the Emergency Response Organization Chart.

D. Regulatory and Public Affairs Manager or Senior Engineer to notify all appropriate regulatory agencies that recovery phase is underway and assist Maintenance Crew if possible.

E. Maintenance Crew action

1.) Evaluate the situation and determine what resources are needed to resolve it (i.e. crew, cleaning truck, traffic control, emergency response trailer etc.).

2.) Determine the cause of the overflow.

a. Determine if the overflow emergency is a private lateral overflow or if it is a main line that the District is responsible for maintaining.

b. A private overflow is defined as a sewer spill that is COMPLETELY contained on private property with no threat to spill into a U.S. Water Way or into the public right of way. See *Section 6.4.2*.

3.) Commence preliminary steps (i.e. contact any additional responders, deploy the vactor truck and emergency response trailer etc…) to mitigate the overflow as outlined in the emergency action plans *in Appendix 6-C*.

4.) Take steps to protect the health and safety of the public and everyone involved in the emergency response.

5.) Use the Spill Estimation guide, *Appendix 6-A*, to estimate the amount of sewage that overflowed.

6.) Determine the cause of the overflow. If inspection equipment is necessary to make an accurate determination, then inspection shall be performed the following day during normal work hours.

7.) Take pictures of the sewer overflow site.

F. CCTV inspect as soon as possible without hampering emergency response.

6.4.2 Private Lateral Spills

The following is a summary of actions to be taken in the event that a private lateral spill has taken place in the District:

A. Emergency call received by standby duty employee.

B. Construction Supervisor is notified/dispatched to the site of the emergency. In the absence of the Construction Supervisor contact the Operations and Maintenance Manager.

C. Construction Supervisor to contact Maintenance Crew, Regulatory and Public Affairs Manager and Senior Engineer as outlined in *Appendix 2-B* on the Emergency Response Organization Chart.

D. Notify the Property Owner of the incident.

E. Determine the cause of the overflow. This may require the use of CCTV equipment. Inspection equipment should only be utilized after the spill has been contained.

F. If the spill is found to be caused by a blockage in the publicly owned sewer line.

1.) Sewer System Overflows can occur at any time of day. Spill response activities for responding to a spill during normal operating hours or after hours can be found above in *Sections 6.4.1.1* and *6.4.1.2*

2.) Disinfect the spill area, after approval from the Director of Engineering and Operations or General Manager. Contact private contractor to restore the area at the numbers provided below.

a. Clean Nest Restoration Company: Office: (818) 352-6203

b. 911 Restoration: Office: (877) 997-7118

3.) Make proper notifications as outlined in *Table 6-1*.

G. If the spill is found to be caused by a blockage in the private lateral or on the owner's property:

1.) CVWD to notify property owner that the property owner needs to call a plumber and remedy the situation as soon as possible. Assist customer in contacting a plumber.

2.) If the spill is not stopped within an hour CVWD staff shall shutdown the water supply to the property to prevent the hazardous conditions as per *CVRR Section 8.06.B*.

3.) CVWD to inform the property owner of the proper clean-up procedures (i.e., DO NOT hose down into the public right of way).

4.) Staff shall remain on site to **make sure the spill causes no additional damage to the property and all sewage remains out of the public right of way and any drainage channels.** The Maintenance Crew shall use the berms and sand bags provided in the emergency trailer, if necessary.

5.) Make proper notifications as outlined in *Table 6-1*.

Private laterals may become blocked with roots or grease if the property owner does not properly attend to the service laterals. It is the property owners' responsibility to maintain their own

private lateral. The portion of the sewer that is considered privately owned is described in *Section 3.2* of the SSMP.

When the District notices an issue such as root intrusion in a resident's private lateral, a letter is sent to the property owner informing them of the problem within thirty (30) calendar days. It is the responsibility of the owner to act on the information. Sending of this letter in no way obligates the District to repair the customer's lateral problem. Nor does it in any way signify the acceptance of any obligation or responsibility on the part of the District should an overflow occur. Sample private lateral issue letters are provided in *Appendix 6-B*.

6.4.3 Emergency Action Plans

CVWD's Action Plans (AP) is a set of outlines for specific emergency scenarios. A list of potential emergency response scenarios is provided in *Appendix 6-C*. These AP's are meant to be removed from the SSMP and used by personnel as a reference guide. This will help facilitate fast action and more effective communication during an emergency.

6.4.4 Additional Measures for Large Volume SSOs

For discharges of 50,000 gallons or greater of sewage spilled into a storm drain or drainage channel staff shall perform water quality sampling no later than 48 hours after the spill. Please see *Appendix 6-F* for more details regarding where to take samples. Staff shall compile a technical report that summarizes the spill and includes all response steps and water quality analysis results.

6.4.4.1 Technical Reporting

The technical report shall include a completed Spill Response Report, as found in *Appendix 6-E*, as well as photos of the spill response. The flow estimate must be performed by engineering staff based on estimates of the discharge using the spill estimation sheet found in *Appendix 6-A*. Water quality sampling results shall also be included in the technical report. See *Section 6.4.4.2* for information regarding water quality sampling. Additional details, if requested by a regulating agency, shall be included in the report. Staff has a total of forty-five (45) calendar days to finalize the report and submit it to the SWRCB website (see *Table 6-1*).

6.4.4.2 Water Quality Sampling Plan

The District will perform water quality sampling and analysis within forty-eight (48) hours of a large volume discharge into storm drains or drainage channels, See *Appendix 6-F*. The District will carry out sampling in accordance with the requirements included in the Waste Discharge Requirements issued by the Regional Water Quality Control Board, Region 4, visit https://www.waterboards.ca.gov/losangeles/water_issues/programs/tmdl/ for additional details. Temperature, turbidity, dissolved oxygen, bacteria enumeration and pH data will be measured after grab samples are taken. These samples shall be taken, if the area is deemed safe to work in, from one point a minimum of 100 feet up stream from the discharge point and another point between 25 and 100 feet downstream of the discharge point. These samples will then be promptly driven to BSK Associates, (559) 497-2888 extension 210, located at 687 N. Laverne Ave, Fresno, CA 93727, for analysis. Chain of Custodies and sampling results will be provided in the technical report.

6.4.5 Procedure for Contracting Emergency Repair Work

The District maintains a list of pre-qualified on-call contractors who can provide specific equipment, materials, and crews to the District in emergency operations. Any contractors wanting to be placed on the preapproved list must contact CVWD and submit a minimum of three verifiable references as well as all applicable insurance and license documents. All contractors must comply with applicable state, federal and local safety regulations as well as provide all employees with a prevailing wage rate for services rendered.

Appendix 6-D is a sample contract that can be filled out by CVWD authorizing contractors to perform emergency sewer repair work on failed sewer lines in case District crews are unable to respond to or handle an emergency situation. If it is necessary to use a contractor that is not on the pre-qualified list, CVWD will verify that the contractor has all applicable contractor licenses and insurance, as described in *Sections 5.4.1* and *5.5.1*, to perform work on the sewer collection system. Copies of applicable action plans, *Appendix 6-C*, and the CVWD Design Manual, *Appendix 5-A*, shall be provided to the contractor in order to communicate District procedures in time of an emergency.

6.5 Plan Approval, Update and Training

This SSO emergency response plan is a living document and should be updated and practiced on a regular basis. After any major incident, the general response plan and the specific action plan (if used) will be reviewed and adjusted to fix any apparent deficiencies.

6.5.1 Plans Update

This emergency response plan shall be reevaluated and edited where necessary according to the following schedule:

- Annually after feedback from Tabletop exercises.
- After any emergency response activity.
- After any emergency situations where the action plan was employed.

6.5.2 Plan Approval

A summary of revisions to this Document shall be recorded in *Appendix 10-A*. A copy of all previous versions of the SSMP is kept with the Engineering Department.

7 Fats, Oils & Grease (FOG) Control Program

7.1 Legal Authority to Prohibit Discharges of FOG

CVWD's legal authority to prevent non-compliant discharges into the sanitary sewer system is established in *Section 3.3* of this document. The legal authority to limit the discharge of FOG and other debris that may cause blockages in the sewer lines is discussed in *Section 3.3.2*. CVWD owns and operates a collection system in the unincorporated portion of Los Angeles County and the City of La Canada-Flintridge.

Los Angeles County, Department of Public Works (LADPW) Industrial Waste Management Department (IWMD) currently oversees the FOG maintenance program in the unincorporated regions of Los Angeles County such as the area within CVWD's sewer district boundaries. Additionally, several incorporated cities throughout the area contract with LADPW to operate their FOG maintenance programs.

CVWD could exercise its legal authority to operate its own FOG maintenance program, however, business owners within the District would be required to pay permit and maintenance fees to both LADPW and CVWD. In order to put such a permitting program in place, a majority vote from the Board of Directors approving of a revision to CVWD's Rules & Regulations is required. In order to prevent undue financial burden on commercial wastewater customers, CVWD will assist LADPW in enforcement of LADPW's FOG program. Inspection reports and customer complaints reported to CVWD are forwarded to staff at LADPW who in turn investigate and issue Notices to Comply or Notices of Violation, if necessary.

However, CVWD still maintains the legal authority to inspect, fine or disconnect any of the commercial establishments in the area as described in *Section 3.5* of this document titled Access to Publicly Owned Treatment Works.

7.2 Steps to Prevent Excessive FOG Discharges

Outside of LADPW's routine inspection program, staff will contact the IWMD should they observe any evidence of illicit or excessive FOG discharges while performing inspections. When CVWD experiences FOG issues in local sewer lines, staff shall file a complaint with IWMD's environmental inspections supervisor, Elvira Delgadillo, at 626-458-3559 or the Public Counter at 626-458-3517, or the Los Angeles County Environmental Resources Hotline at 888-253-2652.

7.3 Disposal Methods for FOG Generated

Solidified fats found in the collection system during cleaning operations are trapped, collected, and taken to a collection area at the District's Glenwood Operations Facility. These and other debris collected from the sewer system are taken to the proper Los Angeles County Sanitation District site for disposal.

7.4 Public Education Outreach Program

CVWD realizes that proactive outreach to its customers about the FOG program is necessary. Information on proper disposal of FOG and other SSO prevention measures, including installation of backflow valves, house lateral maintenance, etc., are available at www.cvwd.com. Articles educating the public on the deleterious effect that FOG has on a collection system, and tips to help minimize this burden are published annually in the local newspaper, the CV Weekly.

In tandem with LADPW's educational outreach program, both programs have been effective at informing the public about FOG. CVWD will continuously seek additional avenues to communicate with the public and continue to field questions from customers in person, over the phone, or via e-mail.

7.5 Installation Requirements

Pretreatment devices are required for FOG generating facilities, including restaurants and other food establishments. Devices are required to be designed in accordance with the latest edition of the County of Los Angeles Plumbing Code and approved, installed, and operated in a manner to control discharges of FOG into the sanitary sewer system. These devices also ensure that the facilities do not create nuisances, menaces to the public peace, health or safety hazards, or adverse impacts on the public sewer system, soil, underground, and/or surface waters.

7.6 Industrial Waste Permit Requirements

If there is a FOG-related problem associated with an industrial waste permit, LADPW will take enforcement action against the permittee, or where applicable, refer the problem to the contract City for enforcement action.

7.7 Domestic Sewage Disposal

CVWD and LADPW do not issue permits or inspect domestic sewage disposal to the sanitary sewer system. However, Los Angeles County Ordinance *Section 20.36.010* prohibits the discharge of "any material, which may create a public nuisance, or menace to the public health or safety, or which may pollute underground or surface waters, or which may cause damage to any storm drain channel or public or private property"

If during inspection of the District's sewer system, the District's Wastewater Department determines that a FOG-related problem exists and is traceable to a domestic sewage source of such character that is not satisfactory, under the Los Angeles County Ordinance *Section 20.20.100*, a pretreatment system could be required or the District may require that the discharge be eliminated from the sewer system. Domestic waste containing FOG can lead to SSOs which are public nuisances. In addition, the California Health and Safety Code Division 5, Part 3, Chapter 6, Article 2 can also be used to impose appropriate domestic sewage discharge requirements.

7.8 Cleaning Schedule for Identified FOG Prone Sewer Segments

The District's experience is that FOG greatly increases the chance that an overflow will occur. Where District staff records a large amount of FOG at a point in the collection system, that sewer main will be placed on the enhanced maintenance list as described in *Section 4.3.4* of this document. The line will remain categorized as an enhanced maintenance area until the District and LADPW investigate possible sources and LADPW has had the opportunity to enforce all necessary compliance measures with the FOG contributor.

8 System Evaluation and Capacity Assurance Plan

8.1 Purpose

In order to better predict future capital improvement projects and better assess the condition of the collection system, the District employs a hydraulic database analysis of the flow within the wastewater collection system. This is accomplished by using data collected from the aggregate flow coming out of the District, which is closely monitored, along with estimations of flows from homes and businesses. Using this estimation and District flow monitoring data, CVWD staff is able to calculate whether the collection system in a given area is sized properly to handle current and future demand.

8.2 Elk Street Flow Monitoring Station

The District owns one (1) monitoring station located on the Sewer Interceptor line which is within the City of Glendale at the intersection of Pacific Ave. and Elk St. flows and depth of flow are constantly being monitored and are recorded in 15-minute intervals. Water quality samples of wastewater are also collected. All of this data is provided monthly to CVWD and the City of Los Angeles by ADS Environmental Services, LLC. Based on the information provided, the District has built a database to record and maintain flow data, including average depth of flow and maximum daily flow. This data allows the District to approximate the general health of the collection system.

8.2.1 Inflow and Infiltration (I/I) Determination

One of the goals of the SSMP and Waste Discharge Requirements is to determine how much non-sewer flow is allowed into the collection system (i.e. caused by street runoff or infiltration from groundwater through crack and gaps in sewer mains during wet weather conditions). This is called Inflow and Infiltration (I/I) and it increases the District's cost for wastewater treatment by increasing wastewater treatment plant operating expenses. All water, sewer or storm water (non-sewer) entering a wastewater treatment facility must be treated as wastewater causing an increase in operating costs proportional to the amount of clean water entering the sanitary sewer system due to inflow and infiltration.

There are methods to reduce I/I such as an inspection program and smoke testing devices to determine cracks or gaps in the sewer main. There is no way to eliminate I/I altogether and attempting to do so can prove very costly, the goal would be to gradually reduce the amount of I/I treated each year in a practical manner.

The following describes how CVWD determines the I/I influence on its sewer collection system. The first step will be to estimate an I/I rate and in order to do that several variables need to be discerned from available data.

8.2.1.1 Average Dry Weather Flow

Average dry weather flow (ADWF) for the collection system is determined based on actual data taken at the flow monitoring station on Elk St. from the months of June, July, and August. These months were selected based on the lowest average monthly rainfall totals from CVWD's rainfall data and from CVWD's sewer flow data from 1982 to the present.

8.2.1.2 Peak Wet Weather Flow

The peak wet weather flow (PWWF) is important when determining how large of an effect wet weather has on a collection system. PWWF is determined in much the same way as ADWF. The average flow from the wettest three (3) months (January, February, and March) of the year are determined by the average monthly rainfall totals from CVWD's rainfall data and from CVWD's flow monitoring data from 1982 to the present. The flow from the months of January, February, and March were averaged to compare against the ADWF.

8.2.1.3 Infiltration Calculation

To determine infiltration, the following information was analyzed:

- Wastewater flow meter data: examined to identify periods of dry weather (generally at least three to five days without a storm event). During selected dry weather periods, nighttime minimum flows will be analyzed to estimate "peak", "minimum", and "annual average" infiltration rates. Infiltration rates are reported in gallons per day (gpd).
- High (or "peak") groundwater conditions: peak groundwater conditions within the District occur during the same months which were used to derive the PWWF, as described in *Section 8.2.1.2*. During this period, the minimum nighttime flows will be at their highest level. The peak infiltration rate is quantified by taking the average daytime flows over several days during dry weather conditions.
- Low (or "minimum") groundwater conditions: usually occurs within the District during the same months which were used to derive the ADWF, when the minimum nighttime flows will be at their lowest level. During this period, the minimum infiltration rate is quantified by taking the average minimum nighttime flows over several days during the drier months of the year.

The annual average infiltration rate can be calculated directly by analyzing metered flow data for an entire year. However, if metered flow data exists for only a portion of the year, it may be estimated by calculating a weighted average of peak infiltration and minimum infiltration.

8.2.1.4 Inflow Calculation

Flow meter data during the wet weather period (PWWF) should be compared to flow meter data during a selected dry weather period (ADWF). Currently the District calculates a simple percent difference between these flow rates. When real time flow monitoring and weather gauges are added to the District monitoring system, storm events can be more closely monitored to see flow spikes (high and low) caused by these storm events.

8.2.2 Capacity Analysis

This data is also useful in monitoring the overall health of the collection system and the maximum capacity that the existing system can handle without SSO or upgrading the piping system.

If the ADWF for two consecutive months is above 60% of the design capacity, then action will be taken to repair deficiencies. Inspection of the line shall be performed as soon as possible. If inspection videos reveal poor conditions, the area will be added to the EMA list and CVWD's maintenance crews will clean the sewer line on a regular basis. If inspection uncovers an issue

that cannot be resolved via regular maintenance activity, CVWD's Engineering Department will prepare plans for a private contractor to perform the repair.

The highest value of flow measured, with measurements taken at 15 minute intervals, during any given month are documented as the peak flow. If the PWWF in any consecutive months surpasses 80% of design pipe capacity, depending on the amount of rain during the month, repair measures will begin, including maintenance activities and if necessary contracting with a third party.

8.3 Hydraulic Model

8.3.1 Design Flow Calculations

All design flows for major transmission lines and tributary lines are calculated using Manning's equation:

$$Q = \left(\frac{1.49}{n}\right) A R^{2/3} \sqrt{S}$$

Where: Q = Flow rate in cubic feet per second, A = the cross-sectional area of the flow in the pipe in square feet, n = the roughness coefficient of the pipe and is not less than .013 for all pipe materials, R = Hydraulic radius in feet, and s = slope of the pipe. Design flows for all lines in the District are kept in an excel spreadsheet on the District's network.

8.3.2 Population Estimation

The population contributing to any line is determined by how many homes and businesses are connected directly to and upstream from the sewer line. The parcels within the District have a wide variety of sizes with many different land uses. The City of Los Angeles' daily sewage generation rates, which are periodically updated, are used to correlate the volume of daily sewage flow generated by a parcel to variables of land use and lot size. Also, for future unique land development flow estimations (i.e. high rise condos or heavy industrial facilities) and design capacity information shall be provided to the District by the property owner/contractor.

8.3.3 Average Dry Weather Flow Estimation

The average dry weather flow in tributary lines is useful in making certain that the collection system has adequate slope to prevent sewage buildup in the system.

Using the dwelling unit totals, wastewater generation values can be computed for each residence based on the number of bedrooms in each residence, assuming that number of bedrooms in a household houses approximately 1.2 people and a sewage generation factor of 90 gallons per person per day. For multiple family residential units, a lower contribution of 75 gallons per person per day will be used, to recognize the expected lower unit population, and lower use of water demanding plumbing fixtures.

8.3.4 Peak Flow Factors

Peak flow factors for the District are derived from rain data recorded at the District's Main Office and flow monitoring data taken from Elk St. station. The method for calculating the average seasonal contribution from I/I is described in *Section 8.2.1*. In 2018, five-year average of inflow and infiltration rate was 2.41%, with a majority of the wet weather flow increase being attributed to increased precipitation.

Sewer system flow is generally expected to exhibit a diurnal flow pattern which, typically, is reproduced each weekday and may exhibit a somewhat different flow pattern on weekends. This pattern is discerned using data obtained from the Elk St. flow monitoring station. After all data is analyzed, the average flow is compared to the peak flow. The percent difference between these two numbers will also be applied to the ADWF estimation.

8.3.5 Analysis

Once all peaking factors are applied to the ADWF, the number is redefined as the "Peak Flow." The peak flow, based on population estimation, is then compared to the design flow. If this peak flow factors are higher than two-thirds (2/3) of the design standard, then the line will be placed on the Enhanced Maintenance Area list until they are able to be repaired. This Analysis is performed during each SSMP self-audit and re-certification as well as at the end of each fiscal year.

8.4 Enhanced Maintenance Area Effects on Flow Monitoring

Sites are often placed on the Enhanced Maintenance List, as provided in *Appendix 4-E*, because they are experiencing capacity issues. This list should also be referenced when determining future capacity enhancement projects. This list will often highlight deficient lines that the hydraulic model may have missed because it is compiled through visual observation and operations and maintenance experience.

8.5 Inflow & Infiltration and Flow Monitoring Goals

Currently, CVWD uses an aggregate analysis tool to determine system wide inflow. In the future, as more monitoring stations are installed, the District will be obtaining a more detailed idea of where I/I is being generated. In order to achieve this, the District will establish a real time flow monitoring program. This entails placing flow monitors at prime locations spaced approximately every ten miles of pipe. CVWD plans to install up to seven (7) flow monitoring stations over the next several years. Once all CCTV footage has been compiled, the District shall review critical locations and determine where to place flow monitors.

8.6 Capital Improvement Program

The sewer lines that are performing the farthest outside of design parameters will be added to the capital improvements projects list for the upcoming years, and the cost will be spread out over a five-year period. Underperforming sewer lines can only be determined after all lines have been inspected and the hydraulic analysis of the system has been generated.

Currently, according to data acquired by CVWD's flow monitoring station, the collection system is operating well within design limits, and no capacity improvement projects have been scheduled. Tributary flow analysis will reveal new capacity issues within the District. These projects will be scheduled and included in upcoming budget years. Projections for capacity improvement projects will be included in the wastewater budget, which is submitted to the Board of Directors annually for approval. Currently, there is $100,000 available for capital improvement projects in FY 20/21 and $100,000 each year for the next five (5) years, see *Appendix 8-A*.

9 Monitoring and Program Modifications

9.1 Purpose

When servicing a collection system, it is important to keep track of all maintenance and capital improvement work that has been completed and to prioritize all remaining work. Collection system maintenance and operation is a continuous effort and without proper tracking of observations, work performed by CVWD crew members or contractors, and all work remaining, important trends and observations may be overlooked. In accordance with the Wastewater Discharge Requirement (WDR), the District works to:

- Maintain relevant information that can be used to establish and prioritize appropriate SSMP activities.
- Monitor the implementation and, where appropriate, measure the effectiveness of each section of the SSMP.
- Assess the success of the preventative maintenance program.
- Update program elements, as appropriate, based on monitoring and/or performance evaluations.
- Identify and illustrate SSO trends, including: frequency, location, and volume.

Prioritizing capital improvement projects is also very critical, as explained in *Section 4.5* titled Rehabilitation and Replacement Plan. The District currently tracks projects with a paper based work order system which is in the process of being upgraded to a computer-based maintenance and management system. Larger engineering projects have a separate contracting and monitoring program.

9.2 Project Records

9.2.1 Sewer Engineering Jobs (S-Jobs)

All improvements on the collection system are processed as engineering jobs (S-jobs) and are given a unique S-job tracking and account number to accurately track job expenses. All project documents are updated with pertinent information from the work being performed. Any change orders, quantity adjustments, overtime worked, material tests, and shop drawings, etc. are documented and placed in the S-job file which is located in the Engineering Department file room. All S-job information is also stored electronically on the District's network.

Throughout an S-job, progress payments are made to the contractor hired to perform the job with the original signed documents kept as record of payment. Progress payments are paid out to compensate the contractor for the amount of work completed as of the date of the progress payment. The amount of work completed to date is determined through collaboration between CVWD's onsite inspector and the contractor, and is represented as a percentage.

Upon completion of work, all change orders and adjustments are included along with the final progress payment. Five percent (5%) of this final payment is held as retention for thirty days to allow time to ensure that all project contract agreements have been carried out to the satisfaction of the District.

9.2.2 Development Jobs Monitoring (D-Jobs)

CVWD has an ongoing development plan check process to analyze and record existing and new housing developments for the Los Angeles County unincorporated area of La Crescenta. Owners and contractors planning new developments or alterations to existing structures must submit a set of plans to CVWD's Engineering Department for approval and sewer connection fee assessment. In the approval process, CWVD assess the impacts to the District's sewer system to ensure there is enough capacity available for the project.

After plans are reviewed and assessed, a sewer connection fee is generated and must be paid in full before the developer is issued a building permit by the County of Los Angeles Department of Building and Safety. The fee schedule for connection is described in *Section 9.08* of the *CVRR*. The District's development plan check process was implemented to assure the District is capable of maintaining sewer capacity as the area increases in population.

9.2.3 Operations and Maintenance Work

Certain projects carried out by CVWD are too small to be processed as S-jobs. These jobs usually consist of manhole raising and paving projects. Projects under the amount of $10,000 are processed using a standard contract after soliciting bids from at least three (3) contractors.

The costs for these projects are paid out in accordance with the *CVRR*. The type of work being done dictates the expense account the project costs will be charged to. The District will assign these costs to the appropriate budget categories.

9.2.4 City of Glendale, City of Los Angeles, City of La Canada-Flintridge & County of Los Angeles Project Work

The City of Glendale, City of Los Angeles, the City of La Canada Flintridge and the County of Los Angeles Department of Public Works send notification mailings in advance of large projects to inform the public and neighboring utility companies of upcoming construction projects. When such a project (i.e. street paving or infrastructure development) is performed over District wastewater infrastructure, the pipe section shall be videotaped prior to work beginning to document the pipeline's condition.

If the City of Glendale, City of Los Angeles or the City of La Canada-Flintridge were to perform work that would directly affect CVWD infrastructure (i.e. street resurfacing that would require manhole adjustments) a cost sharing agreement shall be drafted and agreed upon by both agencies. The District shall have an inspector onsite at all times when a neighboring City project is being carried out in the vicinity of District infrastructure.

9.3 Inspection and Cleaning Records

Inspection and cleaning records are maintained by the Wastewater Department. All inspection reports are kept on file at the Glenwood Operations Facility. The inspection videos are all stored on board the CCTV inspection truck with a backup drive, which is maintained by the Construction Supervisor and updated as needed.

Deficiencies are recorded on a 5 tiered defect coding system as defined in *Appendix 4-G* of this document. The physical condition and criticality of the infrastructure are then reported back to the Engineering Department. Once received, it is compiled into the database as described in *Section 4.5*. Those documents are stored electronically and graphed on an excel spreadsheet.

9.4 Emergency Response Records

At the resolution of an emergency response, a report is compiled recording response time, equipment and personnel involved, and other pertinent information. These records are kept as electronic files as well as in hard copy by the Wastewater Department.

Sewer System Overflow (SSO) frequency and location are also tracked on an excel spreadsheet and after the Geographic Information System (GIS) is completed, the data will be stored in a GIS database. Whenever an SSO occurs, unless the physical condition would be compromised further, the line is placed on the enhanced maintenance list as described in *Section 4.3.4* of this document.

9.4.1 SSO Mapping

Currently SSO's are mapped on the Wastewater System Map maintained by the Engineering Department. This map is color coded by cause (i.e. FOG or Mainline Blockage). With this information, areas with multiple SSO's with similar origins can be targeted for replacement or repair. After the District's GIS system is finalized, these SSO's will be displayed in the same color coded fashion within the GIS database.

The State of California also maintains a mapping program that is available to the public for viewing. This mapping system uses reports submitted by agencies after an SSO and compiles the data with reports from all agencies in Southern California. The map is available to the public online at www.waterboards.ca.gov/water_issues/programs/sso/ sso_map/sso_pub.shtml.

9.5 Safety Training Records

CVWD maintains a safety program to ensure its employees meet OSHA and other agencies' requirements for safety. Sign in sheets are kept from every emergency response training session. These sign-in sheets are used as a record of personnel available for standby emergency response support. Personnel that were not in attendance shall only be contacted for response activities in certain circumstances. Attendance Records are maintained and recorded by the Operations and Maintenance Manager.

9.6 Regularly Updated Material

The following table (*Table 9-1*) is a breakdown of all wastewater program parameters that require immediate attention when changes in protocol occur.

Table 9-1

Program Modification Parameters

SSMP Section	Purpose of Element	Items That Require Tracking
Chapter 1 – Goals	Establish priorities for the District to help focus efforts in collection system management	Bi-Annual audit is sufficient
Chapter 2 – Organization	Documents the chain of communication and command during operation and emergency response	Personnel changes, promotions, responsibilities, and contact information (update flow charts).
Chapter 3 – Legal Authority	Establishes the District's legal authority to maintain and operate the collection system according to the WDR	Changes to the WDR or the Crescenta Valley Water District's Rules and Regulations.
Chapter 4 – Operations & Maintenance	Minimize blockages and SSOs by properly maintaining the system and keeping the system in good condition	• Number of Pipe failures • Number of Pump Station Failures • Update EMA list • Cleaning and Inspection Reports
Chapter 5 – Design and Construction	Ensure new facilities are properly designed and constructed	• As-Built and GIS Updates • Inspection Procedures and Forms
Chapter 6 – Emergency Response Plan	Organizes efforts in response to emergencies that occur in the District	• Total number and volume of overflows • Emergency Action Plans • Average and maximum response time • Percent of total overflow volume contained or returned to sewer • Overflow locations (used to update EMA list) • Emergency Response forms
Chapter 7 – Fats, Oils, and Grease	Defines program to minimize blockages and overflows due to FOG	• Number of blockages due to FOG • Number of overflows due to FOG • Update FSE list
Chapter 8 – Capacity Management	Prioritize capital improvement and assist in planning	Bi-Annual audit is sufficient
Chapter 9 – Monitoring, Measurement, & Program Modifications	Minimize SSOs due to insufficient capacity by evaluating system capacity and implementing necessary projects	• Number of SSOs in a Calendar Year • Miles of Pipe Cleaned • Miles of Pipe CCTV'd
Chapter 10– Program Audits		Document completed annual audit to track changes in the SSMP

9.7 Monitoring Summary and Measurement

As described above, the District currently has many tracking logs that monitor CVWD's progress in capital improvements as well as operations and maintenance. However, it may be difficult to use all of these pieces of data to determine the effectiveness of the SSMP. Therefore, the District has selected several simple criteria to measure and compare on an annual basis in order to gauge the SSMP's effectiveness.

Below is a list of criteria that CVWD plans to use to track the SSMP's success:

- Average and maximum response time.
- Total number of SSO's.
- Number of SSO's caused by main line failure (including debris blockage).
- Number of SSO's caused by capacity failure.
- Number of SSO's caused by FOG.
- Total SSO volume.
- Percent of total overflow volume contained or returned to sewer.
- Miles of pipe cleaned and CCTV inspected.

Please refer to *Appendix 9-A* for an up-to-date effectiveness summary. Comparing statistics from the current year to data from the previous year and a five year running average will give the District an idea as to where improvements need to be made to the SSMP in years to come.

10 Audit Plan

In accordance with the WDR, CVWD will perform audits of the SSMP once every two (2) years. These audits shall focus on the following:

- Analyzing effectiveness of current schedules of operations and maintenance.
- Correcting any noted deficiencies and updating special monitoring needs.
- Review of monitoring and measurement activities as per *Section 9.*
- Update data in *Section 8* and make any necessary changes to the hydraulic model.
- Identify successful applications of the SSMP elements and needed improvements.
- Determining whether documents are readily available and easy to use.
- Update description of system improvements during the past year.
- Update description of system improvements planned for the upcoming year, with an estimated schedule and cost for implementation.
- Review all emergency response activities and applicable action plans during the past year and revise as necessary.
- Incorporate any appropriate public requests and suggestions.

These internal audits shall be tracked in *Appendix 10-A*, titled "Completed SSMP Audits." After the first biennial audit is completed, if there are any urgent or unforeseen changes that need to be made outside of this regular audit period, the changes shall be brought to the Board of Directors for action. Otherwise these audits are performed internally by staff.

In addition, every five years the SSMP shall be resubmitted to the Board of Directors for approval and re-certification. In this revision to the SSMP, targets and objectives are reassessed and new capacity enhancement plans shall be presented.

Both hard copies and electronic copies of these certifications are maintained at the District's Main Office with back-up copies located at the Glenwood Operations Facility.

11 Communication Program

This section highlights the communications and outreach plan the District has put in place for the Sewer System Management Plan (SSMP). CVWD primarily provides service to residential and commercial customers within the La Crescenta area of the unincorporated area of Los Angeles County. In addition, the City of La Canada-Flintridge has several private sewer laterals that connect to CVWD's collection system.

11.1 Communications with the City of Los Angeles

The City of Los Angeles and CVWD entered into a treatment and conveyance agreement for the disposal of CVWD's wastewater. CVWD is part of the City of Los Angeles' Contract Agencies group that meet annually to review the project scope for the amalgamated sewer system. Agencies also discuss opportunities for joint action and the responsibility of agencies to control their effluent. Notes from these meetings are kept on file at the District's main office.

11.2 Communications with City of La Canada-Flintridge and the City of Glendale

CVWD owns and maintains a wastewater transmission line called the "interceptor line" that runs through the City of Glendale and outlets to the LA-Glendale Water Reclamation plant. The operations and maintenance of this line are discussed in *Section 4.3.3*. Communication and monitoring of this line are discussed in *Section 9.2.4*. CVWD maintains open communication with the City of Glendale and meets with the Public Works Department on an as-need basis to discuss any sewer issues. Contact information for emergency response aid and customer satisfaction support is provided in *Table 6-1*.

The City of La Canada-Flintridge (LCF) sewer collection system is conveyed to two different agencies – Los Angeles County Sanitation District and the City of Los Angeles. The portion of the sewer that LCF conveys to the City of Los Angeles uses CVWD's collection system to transport the sewer to LA. LCF contracts with the Los Angeles County Department of Public Works for performance of LCF's collection system operations and maintenance. The City of La Canada-Flintridge is required to develop their own SSMP plan and meet contractual requirements specified in their agreement with the City of Los Angeles. The District and LCF meet as-needed to discuss current issues and updates to the SSMP.

11.3 Communications with and Outreach to Residential, Industrial and Commercial Customers and the General Public

The District includes a link on the District's website to the Design and Construction Standards, FOG Control section, and any other section of the SSMP that has a bearing on the responsibility of the public. A short list of emergency contact numbers will also be included on the website to make SSO reporting easier for residents and business owners. An e-mail link will be available for customers to provide feedback and comments on the SSMP. CVWD's website also has links to the District's outreach efforts (i.e., Consumer Confidence Report mailer, FOG mailers). The SSMP webpage will be updated as new information is available, such as revised procedures or new policies are developed or new regulatory information is received. Future modifications to the webpage include a public comments section.

Residential education will also include private visits to explain standards and FOG restrictions as they arise. The District also contracts with Los Angeles County Department of Public Works (LADPW) to perform inspections on food service establishments within the District. During the

initial permitting process and subsequent inspections, LADPW personnel provide customer education through one-on-one contact and literature.

Applicable SSMP policies and procedures will also be passed along through day to day District operations. For example, contractors will be informed of SSMP elements that may affect the scope of work during the bidding and plan check phases of construction. Other promotional opportunities include District's attendance at community events such as the Hometown Fair, Arbor Day, and Sherriff's Open House allow for District staff to answer any questions members of the community might have.

11.4 Communications with and Outreach to Land Developers, Consultant Engineers and Contractors

Any new development or reconstruction of existing residences in which a sewer "will serve" letter is required from the District will be accompanied by notification to the applicant of the SSMP and applicable design and construction requirements.

11.5 Outreach to Plumbers and Building Contractors

Plumbers and sewer contractors have access to all available District Standard Plans, specifications and standard details. This information will be provided at the beginning of the plan checking process and posted on the CVWD website.

11.6 Communications with the Board of Directors

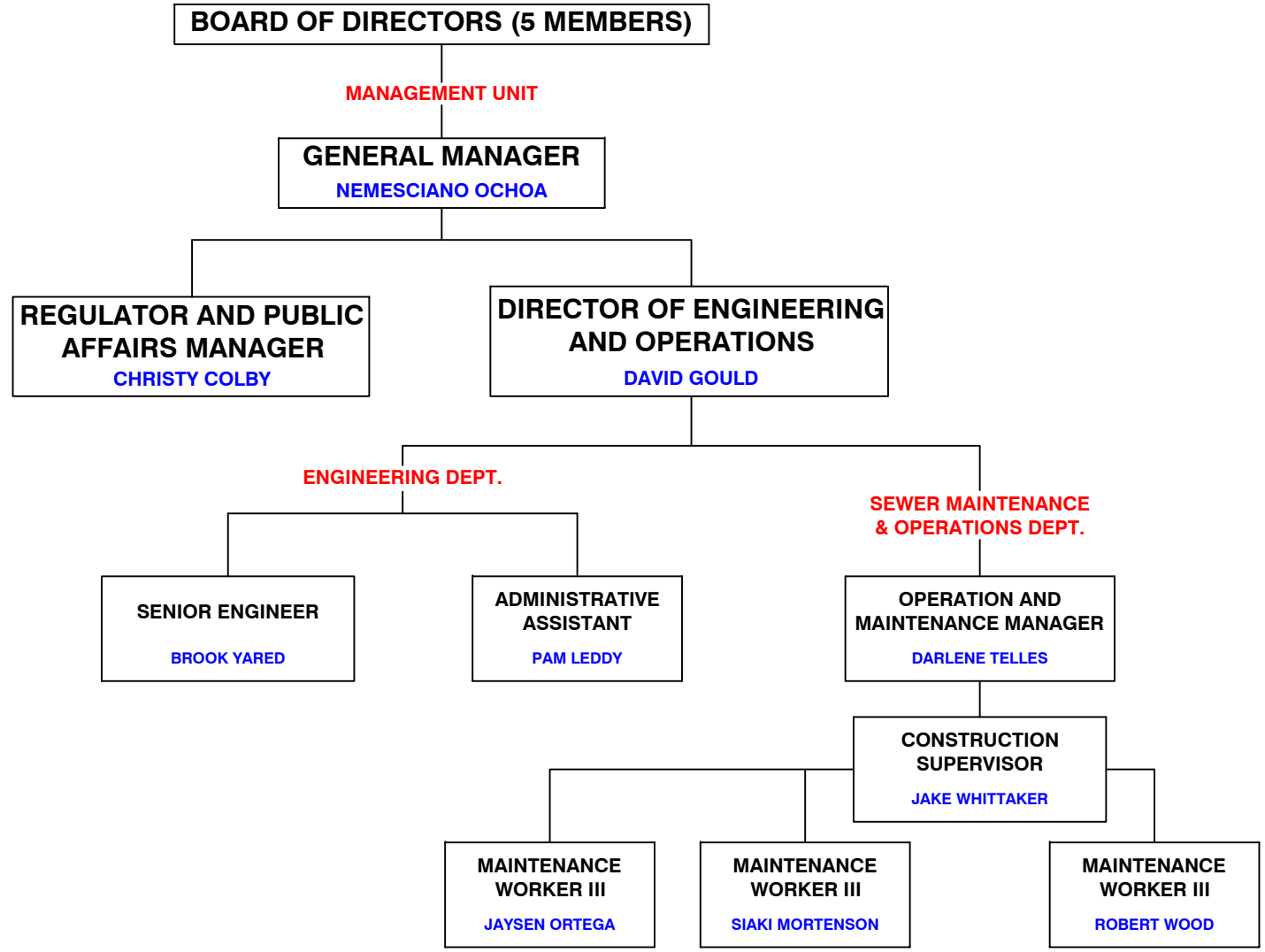
The District's Board of Directors has been advised of the SSMP progress throughout its development. The SSMP Development Plan and Schedule was approved by the Board of Directors in October, 2007. The first revision of the SSMP was approved by the Board of Directors on July 21, 2009. The second revision was recertified by CVWD's Board of Directors on July 23, 2014. Audits were performed in 2012 and 2016. Recertification of the SSMP is required every five (5) years. The SSMP shall be audited by August 2, 2021 in order to remain in compliance with the WDR.

List of Appendices

APPENDIX 2-A

WASTEWATER DEPARTMENT ORGANIZATION CHART

CRESCENTA VALLEY WATER DISTRICT WASTEWATER DEPARTMENT ORGANIZATION CHART

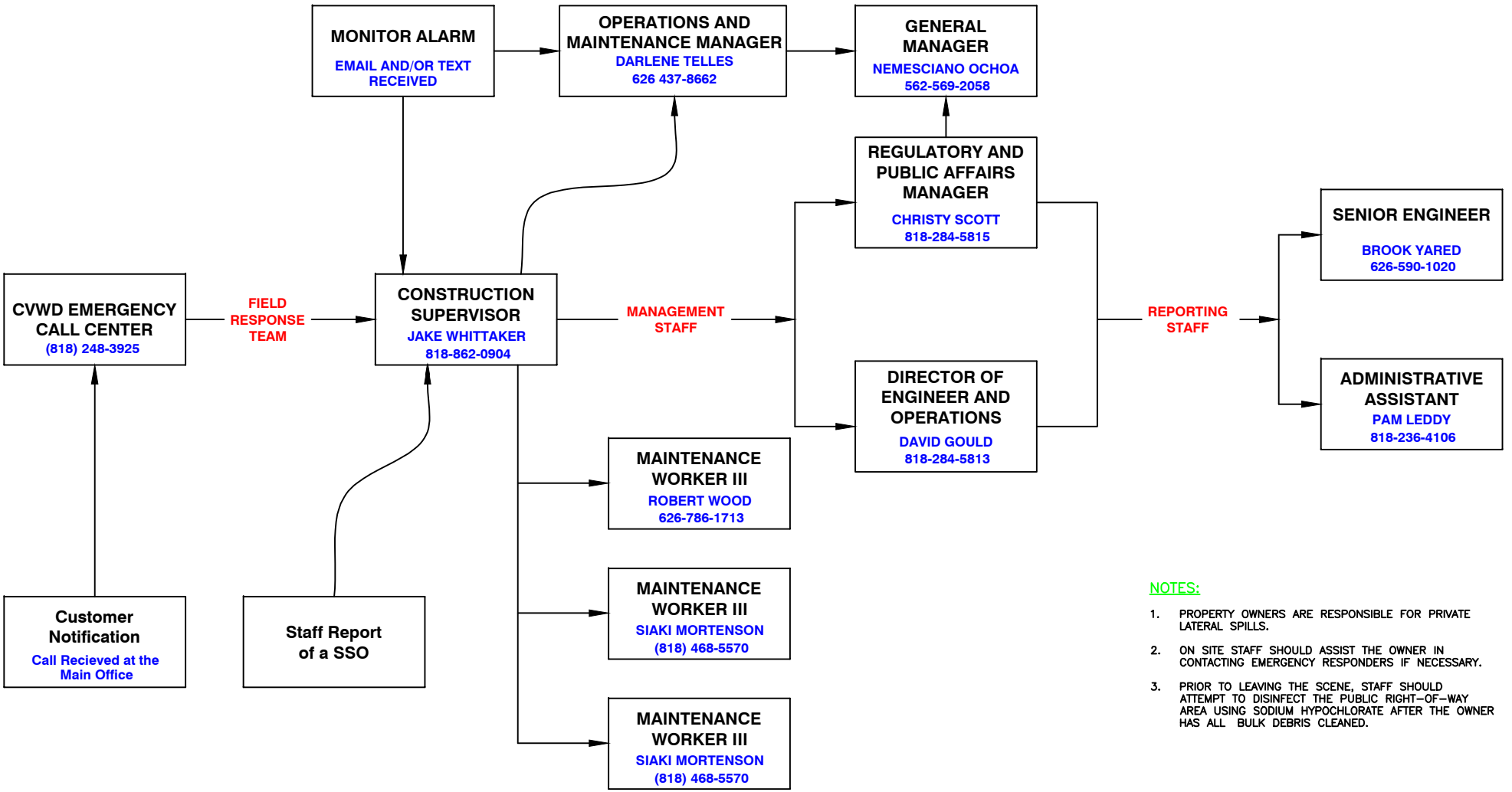


REV. 8/2/21

APPENDIX 2-B

SSO EMERGENCY RESPONSE COMMUNICATION CHART

CRESCENTA VALLEY WATER DISTRICT
WASTEWATER DEPARTMENT
SEWER SYSTEM OVERFLOW RESPONSE - NORMAL HOURS 7:00 A.M. - 4:30 P.M.

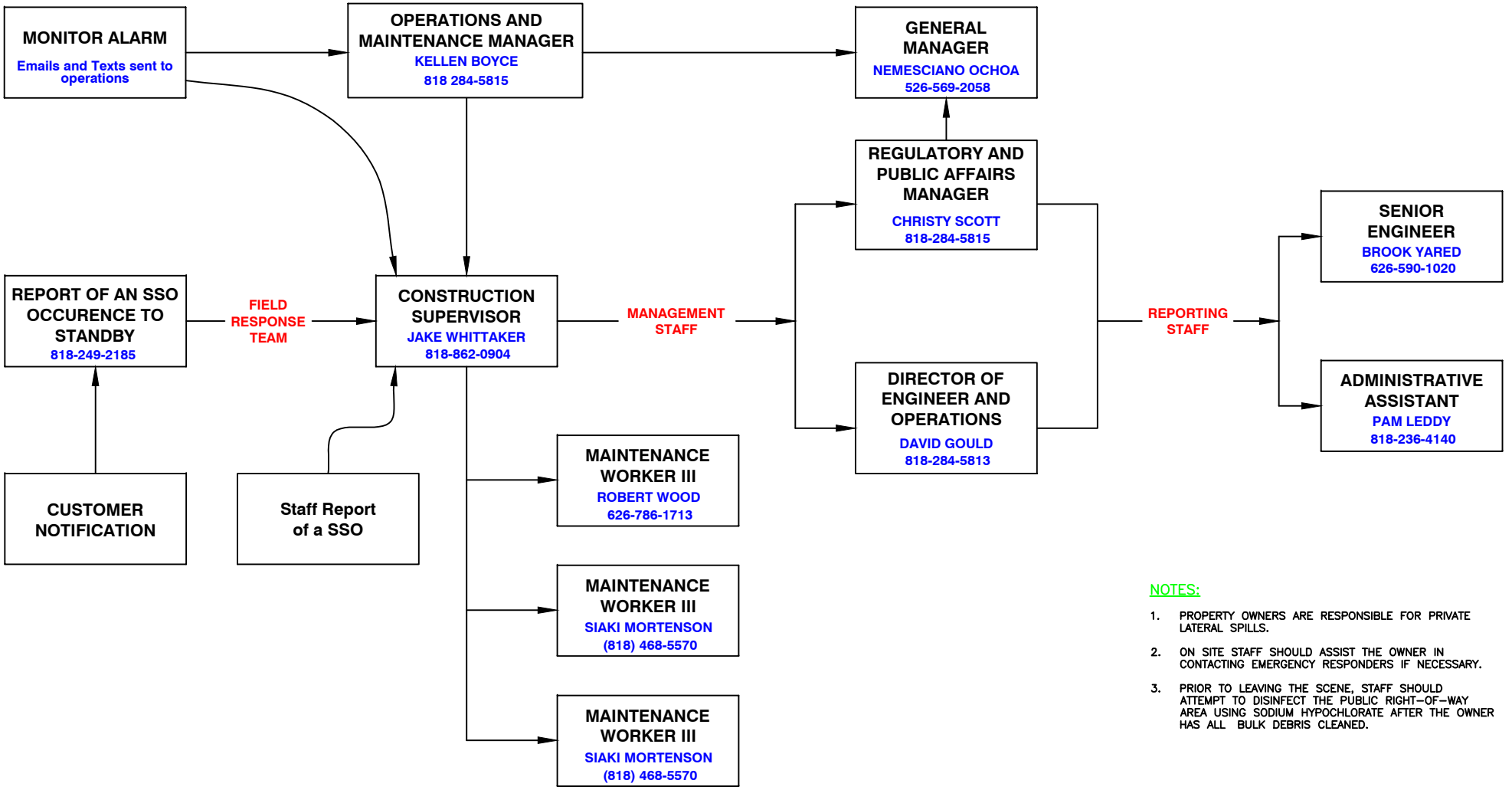


NOTES:

1. PROPERTY OWNERS ARE RESPONSIBLE FOR PRIVATE LATERAL SPILLS.
2. ON SITE STAFF SHOULD ASSIST THE OWNER IN CONTACTING EMERGENCY RESPONDERS IF NECESSARY.
3. PRIOR TO LEAVING THE SCENE, STAFF SHOULD ATTEMPT TO DISINFECT THE PUBLIC RIGHT-OF-WAY AREA USING SODIUM HYPOCHLORATE AFTER THE OWNER HAS ALL BULK DEBRIS CLEANED.

REV. 8/2/21

CRESCENTA VALLEY WATER DISTRICT
WASTEWATER DEPARTMENT
SEWER SYSTEM OVERFLOW RESPONSE & REPORTING ORGANIZATION CHART
AFTER HOURS - 4:30 P.M. - 7:00 A.M.



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3. PRIOR TO LEAVING THE SCENE, STAFF SHOULD ATTEMPT TO DISINFECT THE PUBLIC RIGHT-OF-WAY AREA USING SODIUM HYPOCHLORATE AFTER THE OWNER HAS ALL BULK DEBRIS CLEANED.

REV. 8/2/21

APPENDIX 3-A

INDUSTRIAL WASTE DISCHARGER PERMIT

APPLICATION FOR INDUSTRIAL WASTE DISPOSAL PERMIT

LOS ANGELES COUNTY PUBLIC WORKS
Environmental Programs Division
900 South Fremont Avenue, 3rd Floor Annex Building
Alhambra, CA 91803-1331
Telephone: (626) 458-3517 Fax: (626) 458-3569
http://www.CleanLA.com

TO BE COMPLETED BY PW ONLY

SITE _____ FILE _____

APP NO. _____ AREA _____

PERMIT TYPE & NO. _____ / _____

CHECK ONE: ☐ New Permit ☐ Permit Revision ☐ Non-Use Permit ☐ Change of Ownership (Effective Date: _____)

BUSINESS NAME _____ Tel. _____

LEGAL COMPANY NAME _____

☐ Corporation / LLC ☐ Partnership ☐ Individual ☐ Government Agency

LOCATION ADDRESS _____
Street Unit City ZIP+4

MAILING ADDRESS _____
Street Unit City State ZIP+4

TYPE OF INDUSTRY _____
General Description Federal SIC Number(s) NAICS Number(s)

PROPERTY OWNER NAME _____ Tel: _____

PROPERTY OWNER ADDRESS _____

ASSESSOR'S PARCEL IDENTIFICATION: Map Book _____ Page _____ Parcel # _____ (From tax bill)

GENERAL DESCRIPTION: Describe each disposal method. Multiple disposal methods may require separate permits.

Method of disposal: ☐ Sanitary sewer ☐ Private underground disposal system ☐ Haul to legal disposal point

☐ Surface waters, stream or storm drain (provide NPDES Permit, if required) ☐ Rain Diversion System (RDS)

Subject to stormwater treatment BMP approval? ☐ Yes ☐ No Type(s) of BMPs: _____

Raw materials used (attach MSDS's, where appropriate): _____

Products produced: _____

Wastewater producing operations (describe): _____

Constituents of waste discharge: _____

Hours of operation: _____ to _____ Days per week (Check days): ☐ M ☐ T ☐ W ☐ Th ☐ F ☐ Sa ☐ Su

Average daily wastewater flow rate (gal per day): _____ Time of discharge: _____ to _____

Estimated five-minute peak wastewater flow rate (gal per min): _____ ☐ Trade secret

PERSON RESPONSIBLE FOR INDUSTRIAL WASTE DISCHARGE:

AS A CONDITION OF THE ISSUANCE OF THE PERMIT HEREIN APPLIED FOR, THE APPLICANT AGREES TO SUBMIT ADDITIONAL INFORMATION AS MAY BE REQUIRED BY THE DIRECTOR OF PUBLIC WORKS. PERMITS MAY BE SUBJECT TO ADDITIONAL CONDITIONS AND LIMITATIONS. AN ANNUAL FEE MAY BE REQUIRED UPON PERMIT ISSUANCE.
I AFFIRM THAT ALL INFORMATION FURNISHED IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE.

NAME (Please print) _____ TITLE _____

SIGNATURE _____ DATE _____ TEL. _____

E-mail: _____

RETURN THIS APPLICATION, REQUIRED PLANS, SUPPORTING INFORMATION, AND AN APPLICATION/PLAN REVIEW FEE (CHECK FOR FEE AMOUNT) OF: $_____	*PAYABLE TO:* **LOS ANGELES COUNTY PUBLIC WORKS**

Complete Certification of Compliance with Los Angeles County Lobbyist Ordinance on the back of this form

Items to consider when applying for Industrial Waste Disposal Permit in Los Angeles County:

Application Form:

- The Permit application must be completely filled out and signed by the person responsible for the waste discharge. Since this is an operating permit application, the signature of the consultant is **NOT** acceptable.
- Alternatively, the responsible party can give their consent through a letter of authorization to another person such as a contractor or an architect. The authorization letter needs to be provided to us and must contain contact information of person responsible for the permit.
- Any proposed permit application may be subject to joint permit with County Sanitation District.

Plan Requirements:

- Two (2) sets of plans for Domestic Waste Clearance (i.e. sanitary waste only)
- Four (4) sets of plans for Public Works Industrial Waste:
  - All plans shall be to scale with minimum size of 11" x 17" and preferably 24" x 36"
  - Site plan shows location of existing buildings on the property with the proposed pre-treatment system(s) indicated, address, property line, sanitary sewer and sewer connections where applies, parking spaces, occupancies of all adjoining suites, the direction North, etc.
  - Architectural floor plan identifying each area in the building by its use, i.e., food preparation, car wash, plating, laboratory, storage, office, restrooms, etc.
  - Plumbing plan showing all drains including floor drains, floor sinks, trench drains, service sinks, and supply/waste lines and facilities handling industrial wastewater from the point of origin to the connection to the point of disposal, i.e. public sewer, private disposal system, and/or holding facility for offsite disposal. All equipment or facilities generating industrial wastewater must be identified on the plans
  - Detail drawings of all pretreatment systems with dimensions and manufacturer's specifications

Rain Diversion System Guidelines:

- To obtain guidelines for the discharge of rainwater, please refer to County Sanitation District's website:
  - http://www.lacsd.org/wastewater/industrialwaste/iwpolicies/waterdischarges.asp

Fees:

- A permit processing fee and a plan check fee will be determined based on the type of industry and the facility location. Please contact this office for further information.

References:

- Obtaining SIC Codes: https://www.osha.gov/p1s/imis/sicsearch.html
- North American Industry Classification System (NAICS): http://www.census.gov/eos/www/naics/
- LA County Sanitation District (LACSD): http://www.lacsd.org/
- LA County - Los Angeles County Office of the Assessor: http://assessor.lacounty.gov/

CERTIFICATION OF COMPLIANCE WITH LOS ANGELES COUNTY LOBBYIST ORDINANCE

This is to certify that I, as permit applicant, for the project located at _____ CA

LOCATION ADDRESS

am familiar with the requirements of Los Angeles County Code Chapter 2.160 et seq., (relating to the Los Angeles County Lobbyist Ordinance) and that all persons acting on behalf of myself have complied and will continue to comply therewith through the application process.

APPLICANT (PRINT NAME)	APPLICANT SIGNATURE
COMPANY NAME (If employed by an entity/agency)	DATE

If you suspect fraud or wrongdoing by a County employee, please report it to the County Fraud Hotline at 1-800-544-6861 or www.lacountyfraud.org. You may remain anonymous.

APPENDIX 3-B

CUSTOMER REQUEST TO EXTEND PUBLICLY OWNED COLLECTION SYSTEM

[DATE]

[Customer Name]
[Address]
[City, CA Zip]

Subject: New Sewer Service for [Address], Project [District Project Number]

Dear Mr./Ms. [customer's name]:

The District has reviewed and approved the owner's request to incorporate sewer service for the subject property into Crescenta Valley Water District. Here is a list of requirements that will assist you in finalizing the project:

1. Prior to issuance of the "Will-Serve", CVWD requires payment of $XXXX for the Sewer Connection Fee, The City of Los Angeles also requires $XXXX as payment for conveyance through the amalgamated sewage system, and $XXX for the Sewer Connection Surcharge (if applicable) for a total cost of $XXXX. These charges are considered reimbursement for capacity and capital costs paid by District customers for initial and ongoing contributions to the City of Los Angeles wastewater treatment and disposal system.
2. CVWD will also require a sewer permit for the installation of the new sewer lateral. The new sewer connection shall be installed by a licensed contractor and will be inspected by District personnel. The permit fee will be $XXX the fee must be paid before CVWD will issue a sewer permit.
3. The private contractor will also be required to obtain an encroachment/excavation permit from Los Angeles County and/or City of La Canada Flintridge for the work within the public right-of-way before construction.
4. It will be the property owner's responsibility to maintain the sewer lateral from the sewer main to the house.
5. CVWD will also require a copy of Los Angeles County or City of La Canada Flintridge Sewer Permit for the subject property.
6. CVWD will also require the owner to install a sewer clean out at the property line per CVWD Standard Cleanout 30-S. (see attachment).
7. Certain homes are at higher risk of having an SSO due to their location in relation to the public sewer main. All homes require a backwater valve to prevent SSOs from damaging private property. Please contact CVWD to see if this regulation is applicable to your property.

CVWD will provide a "Will-Serve" letter that states that sewer service will be available from after all above steps are complete. If you have any questions or would like to set up a meeting, please contact me at (818) 248-3925.

Sincerely,
CRESCENTA VALLEY WATER DISTRICT
[Authorized Staff Signature]

[Date]

CVWD Board of Directors
2700 Foothill Blvd.
La Crescenta CA 91214

From: [Customer Name]
[Address]
[City, CA Zip]

We are the owners of the above property and we require assistance to connect our property to CVWD's sewer collection system. We have submitted plans for your review and approved prior to the start of our project.

We have contacted our neighbors as well as all other property owners that our service lateral will impact. We are working together to establish recorded easements to be able to run sewer line from our property to sewer main in the street. We are aware of and prepared to pay for the local District and county sewer connection fees.

Please review the request of sewer service outside the District. We look forward to hearing from you.

Regards,

[Customer Signature]

APPENDIX 3-D

SAMPLE MUTUAL AID AGREEMENT

MUTUAL AID AGREEMENT

THIS AGREEMENT is by and between Crescenta Valley Water District and the Regional Contracting Agencies consisting of Cities of Glendale, Los Angeles, Pasadena, and La Canada-Flintridge.

RECITALS

Whereas, Crescenta Valley Water District and the Regional Contracting Agencies are public agencies and each has certain equipment and personnel under its management and control; and

Whereas, the equipment and personnel may be available to assist each agency in the event of a disruption which would affect the water service, sewer service or sewage treatment service provided by each agency to its customers; and

Whereas, neither party should be placed in a position of depleting unreasonably its own resources, facilities, or services in providing such mutual aid; and

Whereas, Crescenta Valley Water District and the Regional Contracting Agencies desire to cooperate in providing and sharing available equipment upon request of the other agency under the terms of this Agreement.

NOW, THEREFORE, the undersigned parties hereto agree as follows:

1.

A. In the event of any disruption or damage to the ability of either the Crescenta Valley Water District or the Regional Contracting Agencies to continue to serve the public or its customers with water service, sewage service or sewage treatment service, the other party will cooperate to a maximum extent possible, as determined in its discretion, to provide mutual aid assistance as requested.

B. Each party's obligation hereunder shall be expressly contingent upon its manpower and equipment availability, as determined by the responding party in its sole and absolute discretion. Each party's response within the jurisdictional limits of the other party may not interfere with the responding party's responsibility or ability to respond to emergencies or other calls within its own jurisdictional area. Each party shall endeavor to notify the other party in advance when it knows that its equipment or manpower will not be available to respond within the jurisdictional limits of the other party.

C. In the context of this Agreement, "natural or man-made disaster" shall mean a situation or set of circumstances in which property damage or personal injury has occurred or is likely to occur, the occurrence of which will disrupt the services provided by the Crescenta Valley Water District and the Regional Contracting Agencies.

2.

A. Each party to this Agreement shall provide the name(s), address(es), telephone

number(s), and title(s) of the responsible employee(s) authorized to request or respond to requests for mutual aid assistance on or before thirty (30) days have elapsed from the date of approval of this Agreement by the last party to approve this Agreement. Only employees of each respective party are eligible. No contract workers shall be assigned.

B. The requesting party agrees to pay as allowed by applicable law, all direct, indirect, administrative and contracted costs of assisting the requesting party incurred by the responding party as a result of providing assistance pursuant to this Agreement, based upon responding party's internal rates or charges for material, equipment, and personnel. Payment shall be made within sixty (60) days after receipt of a detailed invoice. The detailed invoice shall include personnel assigned, classification, dates and hours worked, hourly billing rate and equipment used. The requesting party shall not assume any liability for the direct payment of any salary or wages to any officer or employee of the responding party. The rates, charges and costs referenced herein shall be set forth in exhibits 1 through 8 attached hereto and incorporated herein. Said exhibits may be updated from time to time as needed. If the changes in the exhibits are greater than 10 percent of the previously stated rates, the said changes need to be agreed to by the parties.

C. The party requesting assistance shall specify the type and duration of assistance required.

D. The party responding to the request shall designate the person responsible for the direction and supervision of the personnel and equipment provided to the requesting party, and the requesting party shall direct the disposition and utilization of personnel, equipment and materials furnished in response to such request only through the person so designated.

E. The personnel, equipment, and materials furnished in response to the request for mutual aid shall be released by the requesting party when no longer needed or when the responding party requires return or as required by law.

3. The responsible managing employees of each of the parties to this Agreement shall consult with each other at least one (1) time each calendar year to update the equipment and personnel list, and revise any procedures for requesting and obtaining mutual aid assistance. The equipment and personnel list for each party shall be attached to this agreement as Exhibits 1 through 8.

4. It is agreed by the parties hereto that protection, maintenance, and repair of their own systems and facilities will receive priority in responding to any request for mutual aid assistance.

A. Each party to this Agreement shall maintain in full force and effect workers compensation insurance without cost to the other party which covers the personnel involved in a response to provide mutual assistance, and therefore each party to this Agreement waives all claims against the other for compensation for any loss, damage, personal injury, or death occurring as a consequence of the performance of this Agreement to the extent that such liability is caused by the other party or its employees, directors commissioners, officials, officers, agents, and volunteers. Failure to provide adequate workers compensation

insurance by a party shall obligate that party for any and all liabilities that may arise. Each party shall defend, indemnify and hold harmless, pursuant to Section 6 (b) below, the other party with respect to workers' compensation claims filed by their own employees.

B. The requesting party shall hold harmless, indemnify, and defend the responding party, its elected officials, officers, agents employees, contractors, volunteers and agencies, against all liability, claims, losses, demands or actions for injury to, or death of, a person or persons, or damages to property arising out of, or alleged to arise out of or in consequence of, this Agreement, except to the extent that such liability is caused by the negligence or willful misconduct of the responding party, its elected officials, officers, agents, employees, contractors or volunteers.

C. The requesting party will pay for any damage to the equipment and material provided by the responding party that occurs during the requested assistance period.

5. No provision of this Agreement and no action taken or personnel, equipment or material furnished pursuant to any such provision shall be construed to make the officer, employee, or agent of either party to this Agreement, the officer, employee or agent of the other party to this Agreement. Furthermore, the parties shall pay all wages, salaries, and other amounts due to their own personnel in connection with any and all services under the Agreement, as well as that which may be required by law. Each party shall be responsible for all reports and obligations respecting their own personnel, including, but not limited to, social security taxes, income tax withholding, unemployment insurance, benefits and workers' compensation insurance. Employees or agents of one party shall not be deemed employees of the other for any purpose.

6. This Agreement shall be effective as of the date all parties have executed the Agreement and shall continue to be in force with respect to all parties signing hereunder, unless terminated by consent of all the parties. Notwithstanding the foregoing, any party may terminate its participation in this agreement upon sixty (60) days written notice of termination to the remaining parties. Termination by any party or parties shall not affect the rights and obligations of any of the remaining parties under this agreement.

7. All notices permitted or required under this Agreement shall be given to the respective parties at the following address, or at such other address as the respective parties may provide in writing for this purpose:

CRESCENTA VALLEY WATER DISTRICT
Crescenta Valley Water District
2700 Foothill Blvd.
La Crescenta, CA 91214
Attn: Nemesciano Ochoa, General Manager

CITY OF GLENDALE
City of Glendale
663 E. Broadway,
Glendale, CA 91206

CITY OF LA CANADA-FLINTRIDGE
City of La Canada-Flintrdige – Public Works Department
1327 Foothill Blvd.
La Canada-Flintridge, CA 91011

CITY OF LOS ANGELES
City of Los Angeles – Bureau of Sanitation
1149 S Broadway
Los Angeles, CA 90015

CITY OF PASADENA
City of Pasadena – Public Works Department
100 Garfield Ave, room N306
Pasadena, CA 91101

Any notice required to be given hereunder to either party shall be given by personal delivery or by depositing such notice in the US Mail to the address listed with first class postage pre-paid. Such notice shall be deemed made when personally delivered or when mailed. Actual notice shall be deemed adequate notice on the date actual notice occurred, regardless of the method of service.

8. Crescenta Valley Water District and the Regional Contracting Agencies agree that the provisions of this Agreement are not intended to create or clarify any rights in third parties not a party to this Agreement. In addition, no third party shall have the right of action hereunder. This Agreement shall not be enforceable by any parties other than Crescenta Valley Water District and the Regional Contracting Agencies.

9. All privileges and immunities of Crescenta Valley Water District and the Regional Contracting Agencies provided by state or federal law shall remain in full force and effect.

10. If either party commences an action against the other party, either legal, administrative or otherwise, arising out of or in connection with this Agreement, the prevailing party in such litigation shall be entitled to have and recover from the losing party reasonable attorney's fees and all other costs of such action.

11. This Agreement contains the entire Agreement of the parties with respect to the subject matter hereof, and supersedes all prior negotiations, understandings or agreements. This Agreement may only be modified by a writing signed by both parties.

12. This Agreement shall be governed by the laws of the State of California. Venue shall be in San Bernardino County.

13. This Agreement shall be binding on the successors and assigns of the parties, and shall not be assigned by either party without the prior written consent of the other.

14. This Agreement may be executed in counterparts, each of which shall constitute an original.

15. In the event that any provision or portion of this Agreement is determined by a court of competent jurisdiction to be invalid, illegal or unenforceable for any reason, such provision or portion shall be severable from this Agreement. Such invalidity, legality or unenforceability shall not be construed to have any effect on the validity, legality or enforceability of the remaining provisions or portions of this Agreement.

WHEREFORE, the parties hereto have caused this Agreement to be executed on the dates indicated.

CRESCENTA VALLEY WATER DISTRICT

I HEREBY CERTIFY that the foregoing agreement was du1y executed pursuant to authorization by the Crescenta Valley Water District Board of Directors, at a regular meeting thereof held on the [Insert Date].

APPENDIX 4-A

INVENTORY OF EQUIPMENT, MATERIAL, AND SPARE PARTS

CVWD Wastewater Inventory 2021				
Location	Item Description	Size	Quantity	Comments
Glenwood Operations Facility				
	Gas Detector		2	
	MH Ring and Cover	6"& 8"	40'	
	PAM Flip Lid Ring and Cover	24"	5	
	Grading Rings	24" x 6" -thick	8	
	Easement Cleaning Machine		1	
Emergency Response Trailer		**Date Revised:**		**5/25/2023**
	Goodwin Trash Pump	2 in.	3	
	Honda Trash Pumps (gas)	3in.	1	
	Honda Generator	2000 W	1	
	6500 Watt Generator	6500 W	1	
	Flat Hose	2"	700'	
	Wet Vac	20 gal	1	
	Hudson Sprayer		2	
	Sewer Main Plug	6" - 10"	1	
	Sewer Main Plug	10" -14"	1	
	Air Canister Sewer Main Plugs		1	
	Portable Lighting	1000 W	1 set	
	Sand Bags		15	
	Rubber Berm	3ft	1	
	Portable Eye Wash Station		1	
Vactor Truck		**Date Revised:**		**5/25/2023**
	Cleaning Nozzles	various	11	
	Debris Basket	8"	1	
	Debris Basket	10"	1	
	Vaccum Hose Tubes	6"	6	
	Extension Poles	5'	7	
CCTV Van		**Date Revised:**		**5/25/2023**
	Camera		1	
	Extension Cable	1000'	1	
	Invert Roller		1	
	Manhole Roller		1	
	Rope	50'	1	
	Sanitary Gloves		2boxes	
Glenwood Storage Bin		**Date Revised:**		**5/25/2023**
	VCP Fittings (Rubber Couplings)	4-8" fittings	10	
	PVC Fittings	4-8" fittings	10	
	Tri-pod, Winch, and Harness		1	
	Gas Detector		2	
	Blower	6"	1	
	Debris Basket	10" +	3	
	18' Ladder		1	
	Misc. Tools (Wrenches etc...)			
Encinal: General Storage		**Date Revised:**		**5/25/2023**
	VCP Pipe	6"	15'	
	VCP Pipe	8"	50'	
	VCP Pipe	10"	20'	
	VCP Pipe	18"	12'	

APPENDIX 4-B

SEWER MANHOLE INSPECTION REPORT

APPENDIX 4-B

SEWER LINE MAINTENANCE AND INSPECTION

☐ Stoppage

Map No.: _____

Date: _____ Time: _____A.M/P.M Location: _____
Block # Street

Line Size

Nozzle Type

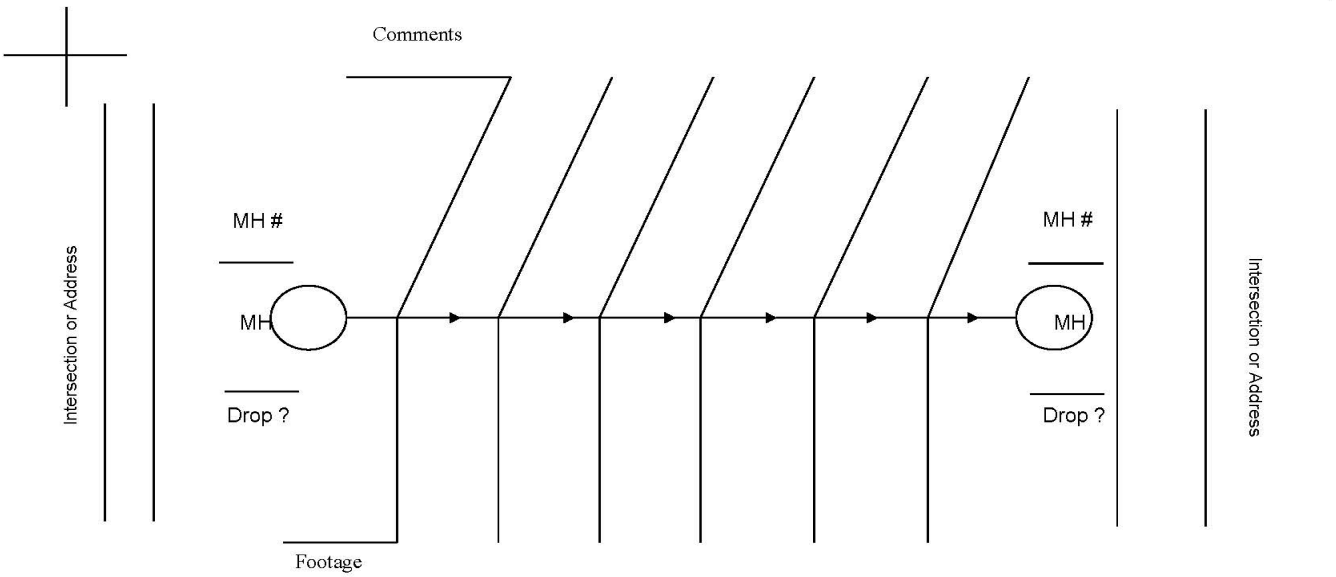
Regular	JPX (Mini Blue Thunder)
Other	

MH Condition

	MH #:	MH #:	MH #:	MH #:	MH #:
Cover					
Ring					
Brick/Facing					
Inverts/Drops					
Flow					
Rungs					

Legend	Good: G	Fair: F	Poor: P

Comments: _____



Approximate MH to MH footage: _____

APPENDIX 4-B

Are Any of the Following Evident?

	Yes	No	Inconclusive
Flooding	☐	☐	☐
Vectors	☐	☐	☐
Low Spot	☐	☐	☐
*Other	☐	☐	☐

* Explain other: _____

_____

Record Flow Level in M.H.

☐ Quarter Full ☐ Half Full ☐ Full ☐ Surging *

* If surging contact office and wastewater crew leader immediately
Office - (818) 248-3925
Crew Leader - (818) 445-1721

Type of Material Found

	Heavy	Medium	Light
Rocks	☐	☐	☐
Sand	☐	☐	☐
Roots	☐	☐	☐
Grease	☐	☐	☐
Garbage Disposal	☐	☐	☐
None	☐		
Other	☐	☐	☐

Explain _____

_____

In the event of an overflow, Diagram this sewer line in relation to the intersection, addresses or landmarks. Show if line is on a Parkway, R/W, etc. Show any suspected intruding tree or structure. Give any observation concerning this line.

Employee Names: _____ _____

Entered By Other member Present

APPENDIX 4-E

ENHANCED MAINTENANCE AREA LIST

Crescenta Valley Water District
Appendix 4-E
Enhanced Maintenance Areas

Note: EMA's will be cleaned twice a year.

EMA No.	Location (Drawing Number)	Upstream Manhole No.	Downstream Manhole No.	Date of T.V. Inspection	or	Date cleaned	Type of material found. Grease, GD, Sand, Rocks	Degree - (L), (M), (H)	Notes
1	Rosemont & Pineglen								
2	La Crescenta & Orange								
3	Briggs & Foothill (76 station)								
4	On Foothill between Sunset & Briggs. North side of Foothill								
5	2000 Blk Hilldale								
6	On Waltonia between Hilldale & Montrose								
7	Canalda from flush tank to Ocean View								
8	On Prospect between Sunset & Rosemont								
9	On Community between Ramsdell & Glenwood Ave								
10	Mountain Pine and Timberlake								

APPENDIX 4-F

LIFT STATION MAINTENANCE & INSPECTION CHECKLIST

CRESCENTA VALLEY WATER DISTRICT
LIFT STATION PREVENTIVE MAINTENANCE FORM
APPENDIX 4-F

TITLE: La Granada Lift Station - Quarterly Inspection Check List

Perform the _____ **[insert date of inspection]** inspection for the equipment listed below using the standard job steps for that equipment. If additional work is required to repair the equipment, other than preventive maintenance, initiate a separate work order for that equipment. Complete all Preventive Maintenance tasks first before attempting any repairs. If you find additional steps are necessary to complete the preventive maintenance, write the steps in the comment section and alert your supervisor of the additional steps.

DAY THE WEEK: _____ ESTIMATED HOURS: _____

TITLE: _____ NUMBER OF PERSONNEL: _____

JOB STEPS:

VISUALLY INSPECT EQUIPMENT AND AREA AND NOTE ANY PROBLEMS

☐ Unlock and open all cabinets and pit covers

Check Telemetry:

☐ _____

☐ _____

This means that the telemetry system is working

☐ Power supply LED light should be on.

☐ If there is a fault in the telemetry panel, phone the engineering department for Telemetry resetting.

See telemetry panel reset job aide.

Check Control Cabinet:

☐ Test any "push to test" lights.

☐ Ensure all breakers are on.

If a breaker is not on, investigate panel to try to determine why the breaker tripped. If there is no obvious reason to explain why the breaker tripped, reset the breaker. If the reset breaker trips again, contact the Engineering Department (818)248-3925.If there is an obvious reason to explain why the breaker tripped, contact the District's electrical technician. If repairs cannot be made, contact the Engineering Department.

☐ Visually inspect control panel wiring for obvious signs of electrical problems, such as, burned wiring, wire off terminal, and bum spots on cabinet.

If this is observe1 investigate reason. Call an electrician, if necessary.

☐ Operate each pump in manual mode.

☐ Check wet well for turbulence, unusual noise and inspect the check valve to see if it has moved.

☐ After the pump has been tested, turn off pump and place back in AUTO mode.

☐ Check wet well for grease and debris.

☐ Tilt and hold the high level float upside down for 30 seconds. Then lower the float to normal position.

Readings:

Record Pump #1 hours _____

Record Pump #2 hours _____

Record Pump #1 voltage _____

Record Pump #2 voltage _____

Record Pump #l amps _____

Record Pump #2 amps _____

Record motor #1 Megger reading X ____ Y ____ Z, ____

Record motor #2 Megger reading X ____ Y ____ Z, ____

Record Pump #1 flow, gpm _____

Record Pump #2 flow, gpm _____

Structure:

☐ Inspect station for paint needs.
Write WOs for paint needs.

Housekeeping:

☐ Clean up in and around the site.

☐ Wipe down station as needed.

☐ Pick up any litter found at the site.

Leaving pump station:

☐ Ensure that all switches, controls and valves are in the correct position.

☐ Ensure the pumps are in AUTO mode.

☐ Record results of inspection in the logbook.
Note any problems found. If no problems were found, note that no problems were found.

☐ Record run times in the logbook.

☐ Ensure all cabinets and pits are closed.

☐ Ensure all locks are in place.

☐ Ensure the enclosure is locked.

Consult Construction Supervisor if there are any questions regarding any section of this form.

APPENDIX 4-G

CONDITION ASSESSMENT/DEFECT CODING PROTOCOL

PERFORMANCE DATA WEIGHING & DEFECT CODING PROTOCOL
APPENDIX 4-G

In order to develop an overall performance rating system, Crescenta Valley Water District used collection system performance criteria that would help to quantify the likelihood and consequence of the failure of any portion of CVWD's collection system. This system allows district staff to effectively prioritize repairs. The consequence rating system is defined by the following characteristics:

- Health and Safety
- Regulatory Compliance
- Environmental Impact
- Financial Impact

The likelihood that a portion of infrastructure will fail is largely dependant on:

- Physical Condition
- Remaining Capacity
- Redundancy
- Nuisance
- Maintenance History
- Effectiveness of O&M Protocols

Several of the likelihood parameters are difficult to assess because they are often based on visual inspection which can be very subjective. In order to remove some of the variance between different operators' assessments of the severity of pipe damage, a 5 level defect coding system is also provided in this appendix. This coding system uses references to supply operators with a general reference for rating.

The performance measures described above are compiled on an excel spread sheet along with located on CVWD's computer network at ConsequenceLikelihood_ff.xls

Wastewater Defect Coding System

The present manual includes standard definitions, pictures, and drawings for the purpose of describing observations of sewer systems provided by visual inspection. The overall objective is to describe how these inspections can be performed on an identical level throughout the District.

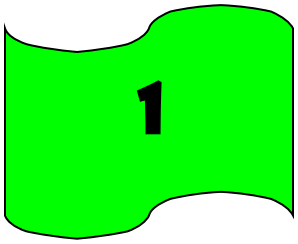
Condition Rating System

1 - Good Condition, operating at 90-100% of design capacity/condition, no visible damage. (Ideal condition for a pipe)
2 - Minor Damage, 75-90% original capacity/condition, minor visible damage or debris
3 - Moderate Damage, 50-75% original capacity/condition, moderate visible damage or debris
4 - Significant Damage, 20-40% original capacity/condition, significant visible damage or debris
5 - Critical Damage, 0-20% original capacity/condition, infrastructure failure or collapse

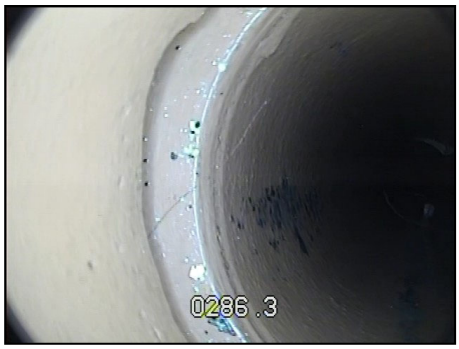
Keep in mind that these are just guidelines to assist operators in coding defects in a uniform manner – as much as is possible with the subjective nature of visual rating. Also, as you critique these guidelines, you may find that your comfort level with this rating system may be different than others, or simply your circumstance may be different and you may wish to be more (or less) conservative. This document will not be able to cover all scenarios that are encountered in a collection system. Please use personal judgment on scenarios that are not covered in this document and consult the Construction Supervisor if necessary to get the most appropriate code.

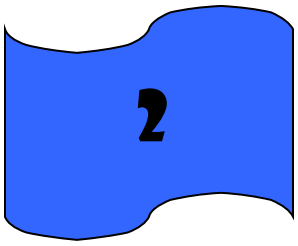
Remember, sewer lines within the District are usually cleaned prior to videotaping. This is likely to be the best condition that pipe will be in unless a repair operation is undertaken. Be careful, while most lines are taped after cleaning it is sometimes necessary that we tape lines prior to cleaning to investigate its natural condition. We still consider a 4-rated root. Please attempt to scale accordingly between these two scenarios.

Cracks:

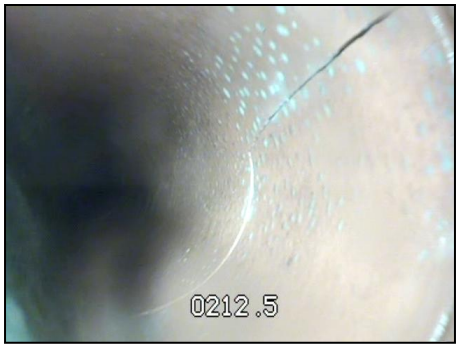


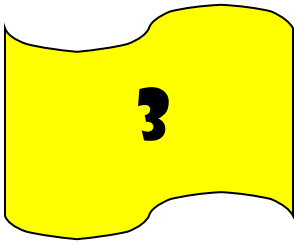
Good Condition – very light damage



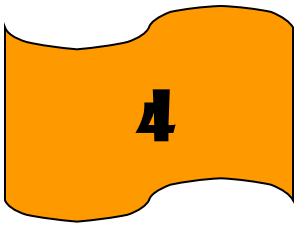


Minor Damage – minor visible damage

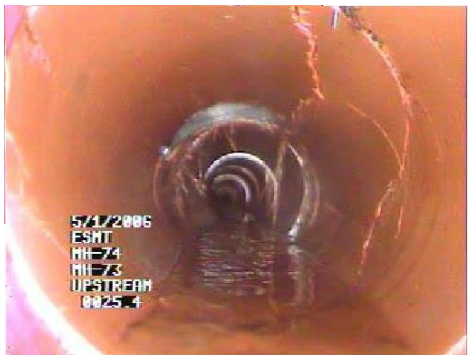


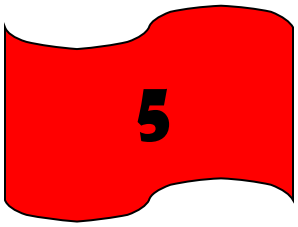


Moderate Damage – clearly visible crack that may lead to flow problems. Small holes in the pipe.



Significant Damage – major visible damage or debris. Possibly causing I&I. Cleaning may erode soil and cause further damage. Good sized hole in pipe.



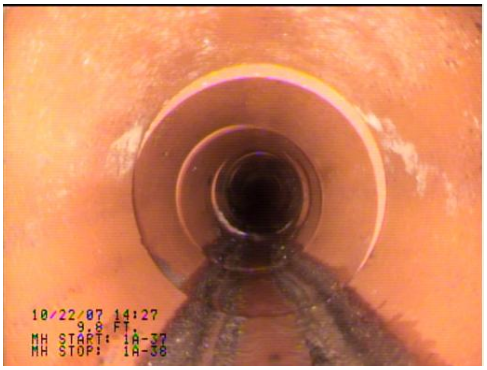


Critical Damage – failure or collapse. Repair ASAP

Offset Joint:

1

Good Condition – very light visible offset



2

Minor Damage – Slight offset

3

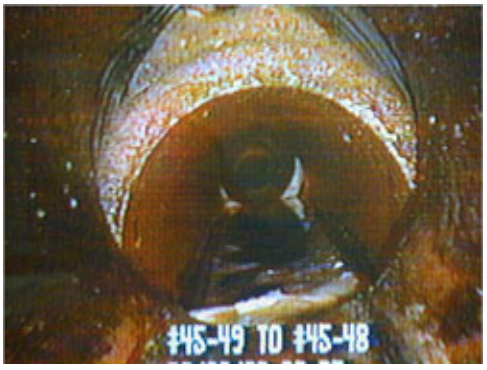
Moderate Damage – large offset that may lead to flow problems. Joint still in tact

4

Significant Damage – major visible offset debris collects easily on offset. Joint integrity unknown.

5

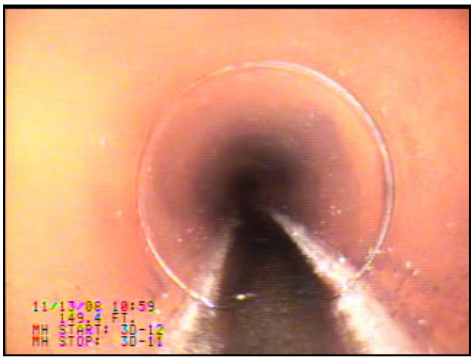
Critical Damage – failure or collapse



Grease:

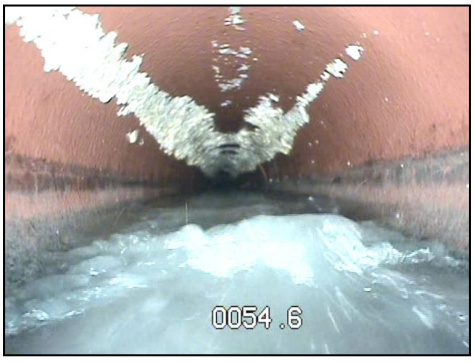
1

Good Condition – Insignificant grease



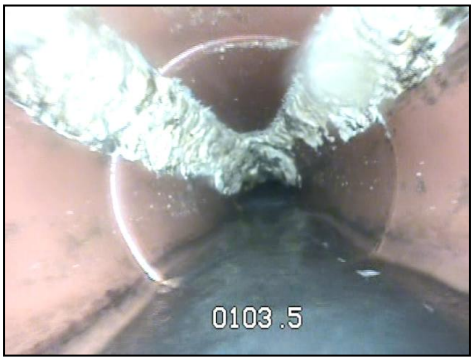
2

Minor Damage – very little visible grease



3

Moderate Damage – clearly visible grease that may lead to flow problems

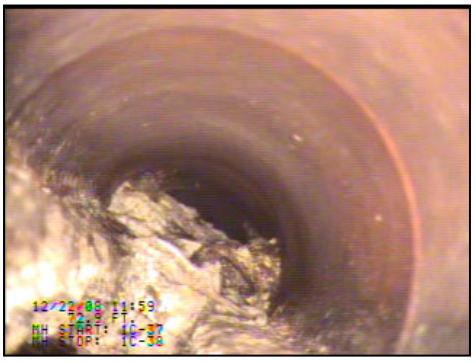


4

Significant Damage – major visible grease (Consider Area for Enhanced Maintenance Schedule)

5

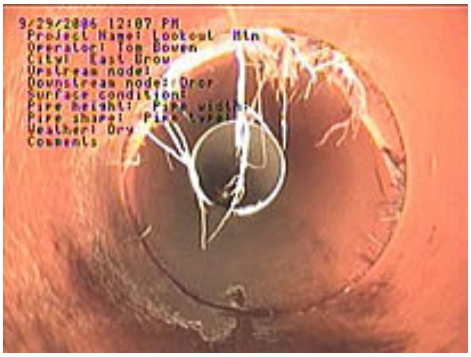
Critical Damage – approaching failure



Root Intrusion:

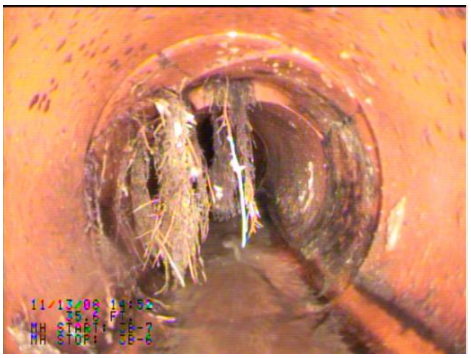
1

Good Condition – Insignificant root intrusion



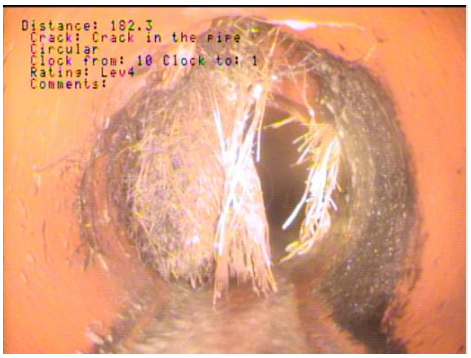
2

Minor Damage – Light root intrusion



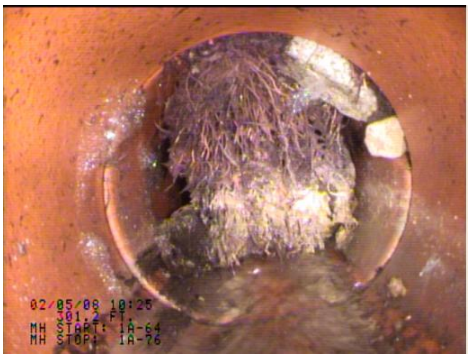
3

Moderate Damage – Some flow line blockage. Roots may catch debris.



4

Significant Damage – Major root intrusion. Pipe losing capacity and greatly increased chance of blockage



5

Critical Damage – Critical intrusion pipe blockage/ failure is imminent

APPENDIX 4-H

COLLECTION SYSTEM SERVICE AREA MAP

Crescenta Valley Water District

Appendix 4-H
Collection System Service Area Map

N

July 2021

APPENDIX 5-A

CONSTRUCTION MANUAL

Wastewater Construction Manual

1. Introduction

All sanitary sewers shall be designed in accordance with this Design and Construction manual as well as the Standards Specifications for Public Works Construction and any technical or special provisions called out in a Board approved contract.

2. Excavation, Backfill and Trench Shoring

A detailed plan showing the design of shoring, bracing, sloping, or other provisions to be made for worker protection from the hazard of caving ground during excavation of any trench or trenches five (5) feet or more in depth are required. A registered civil or structural engineer licensed in the State of California shall prepare the plans for any excavation greater than fifteen (15) feet in depth. As a part of the plan, a note shall be included stating that the registered engineer certifies that the plan complies with the CAL/OSHA Construction Safety Orders, or that the registered civil or structural engineer certifies that the plan is not less effective than the shoring, bracing, sloping, or other provisions of the Safety Orders.

The detailed plan showing the design of shoring, etc., which the Contractor is required to submit to the District for acceptance in advance of excavation will not be accepted by the District if the plan is based on subsurface conditions which are more favorable than those revealed by the investigations made by the District or their sub-consultants; nor will the plan be accepted if it is based on soils related design criteria which is less restrictive than the criteria set forth in the report on the aforesaid investigations of subsurface conditions. The detailed plan showing the design of shoring, etc. shall include surcharge loads for nearby embankments and structures, for spoil banks, and for construction equipment and other construction loading. The plan shall indicate for all trench conditions the minimum horizontal distances from side of the trench at its top to the near side of surcharge loads.

The Contractor shall perform all excavation, trenching, compaction, and backfilling necessary or required for the construction of the pipelines, service laterals, and appurtenances, as shown on the drawings. Excavations shall include the removal and disposal of all materials of whatever nature encountered, including all obstructions of every nature that would interfere with the proper construction and completion of the work. The Contractor will encounter rocks of various sizes within the trench and will be required to remove the material to an approved location.

The maximum length of open trench shall not be greater than fifty (50) feet or the distance to accommodate the amount of pipe installed in a single day, whichever is less. The distance is the collective length at any location, including open excavation, appurtenance construction, pipe laying, backfill which has not been temporarily repaved, and necessary repairs to existing utilities that may have been damaged by the Contractor during construction of the pipeline.

The work shall include all pumping, ditching, and other required measures for the removal or exclusion of wastewater from all excavations. It shall be the responsibility of the Contractor to dispose of all water released from the District's mains, including wastewater released from District sewer mains. The Contractor shall also take care of drainage water from the construction operations, and of storm water and wastewater reaching the right of way from any source, so that no damage will be done to the trench, pipe, and/or other structures.

The Contractor shall be responsible for any damage to persons or property on or off the right of way due to such drainage water, or to the interruption or diversion of such storm or wastewater on account of the Contractor's operations.

All earthwork including materials, excavation, and backfill will conform to SSPWC, Sections 200, 207, 211, 300, 302, 306, or any other relevant section.

Nothing contained in this article shall be construed as relieving the Contractor of the full responsibility for providing shoring, bracing, sloping or other provisions, which are adequate for worker protection.

A. Excavation

This section includes materials, testing and installation for trench excavation, backfill, and compaction of piping, and manholes.

All excavation work, including any required shoring or other provisions for worker protection, shall be performed in accordance with these Technical Provisions, the applicable provisions of Section 306-1.1 of the SSPWC, the "Construction Safety Orders" issued by the State of California Division of Industrial Safety, and the County of Los Angeles Excavation Permit.

Excavation for the pipelines, service laterals, and appurtenances shall be in open-cut trenches with vertical sides and shall be excavated to a depth of six (6) inches below an established grade line based on the outside diameter of the pipe.

Should the contractor elect to tunnel or jack any portion of the pipeline, laterals, or other appurtenances, he shall first obtain approval from the District, obtain any necessary permits, and pay any associated cost.

If it becomes necessary to excavate more than six (6) inches below the established grade line in order to remove rock, hardpan, shale, other interfering objects or due to Contractor error, the void shall be filled with pipe bedding material and compacted in accordance with SSPWC, Section 306-1.2.1 and these Special Provisions at no additional cost to the District.

The Contractor shall sawcut the existing AC pavement or concrete. Pavement breakers or stompers shall not be allowed. Contractor shall vacuum or remove AC or concrete cuttings during the sawcutting operation and shall not be allowed to wash AC or concrete cuttings into the storm drain system per County of Los Angeles permit requirements.

All native material excavated from the proposed pipe trench shall become the property of the Contractor and shall be disposed of by him/her outside the limits of work in accordance with the applicable ordinances and regulations of governmental agencies having jurisdiction. Costs of said disposal shall be the sole responsibility of the Contractor and no additional compensation shall be made therefore. It shall be the responsibility of the Contractor to locate suitable disposal sites, and obtain permits or other required authorizations.

The Contractor shall remove and dispose of all structures, debris, or other obstructions of any character necessary to accommodate the Work. Where such obstructions consist of improvements required by law, they shall be removed, maintained, and permanently replaced by the Contractor at the Contractor's expense except as otherwise specifically provided in the Contract Documents.

B. Trench Shoring

The Contractor shall submit to the District for acceptance, in advance of excavation, a detailed plan showing the design of shoring, bracing, sloping, or other provisions to be made for worker protection from the hazard of caving ground during the excavation of any trench or trenches 5 feet or more in depth. A registered civil or structural engineer licensed in the State of California shall prepare the plan or table for any shoring that is fifteen (15) feet or greater. As a part of the plan, a note shall be included stating that the registered engineer certifies that the plan complies with the CAL/OSHA Construction Safety Orders, or that the registered civil or structural

engineer certifies that the plan is not less effective than the shoring, bracing, sloping, or other provisions of the Safety Orders.

Trench shoring shall be constructed and installed in accordance with Sections 7-10.4.1 and 306-1.1.6 of the SSPWC.

C. Pipe Bedding

Pipe bedding shall be defined as that material supporting, surrounding, and extending from 6 inches below the bottom, to twelve (12) inches above the top of pipe. Bedding material shall be 1/2" crushed rock and be free from clay and organic materials in accordance with, Section 200-1.2 of the SSPWC and CVWD std. drawing 40-S.

A sample of pipe bedding material shall be submitted to the District for approval before construction. If sand is used, The District will perform a sieve analysis in accordance with ASTM C136 to determine if the pipe bedding material meets the requirements defined above.

D. Manhole Bedding

Manhole base sections shall be placed on graded and firmly tamped granular bedding. The bedding shall be at least six (6) inches thick and extend at least 12 inches beyond the limits of the base section. The bedding must be graded to ensure uniform contact and support of the manhole in a true vertical position.

E. Pipe Backfill

Backfill shall be considered as starting twelve (12) inches above the pipe or conduit to the street sub-grade or finished ground. Backfilling operations shall conform to the applicable provisions of SSPWC, Section 306-1.3.

Backfill material shall be imported Crushed Aggregate Base (CAB) or Processed Miscellaneous Base material (PMB), Crushed Miscellaneous Base (CMB), or One Sac-Slurry (OSS) and contain no rocks or stones greater than two (2) inches in any dimension. Broken pavement or similar materials shall not be allowed. Backfill material shall be imported and approved by the District prior to placement of backfill.

Backfill within the pipe trench shall be compacted to ninety percent (90%) of relative compaction from the bedding material to the street subgrade or finished ground. Hand-directed mechanical tamping or other similar approved methods shall be permitted when cover over the top of pipe is greater than twelve (12) inches.

Backfill materials shall be compacted in maximum lift thickness of eight (8) inches. Use of equipment, which compacts by impact, vibration, or rolling, will not be permitted until cover over the pipe is in excess of twelve (12) inches. The depth of the compacted material on each side of the pipe shall be approximately the same during the entire backfilling operation.

The moisture content of the soil as determined by the required soil density shall be uniformly distributed throughout each layer. All backfill above the pipe bedding shall be mechanically compacted in accordance with SSPWC, Section 306-1.3.2.

Compaction of trench backfill by ponding or jetting will be permitted when, as determined by the District or the District's representative, the backfill material is of such character that it will be self-draining when compacted and that foundation materials will not soften or be otherwise damaged by the applied water and no damage from hydrostatic pressure will result. Ponding and jetting methods shall be conducted in accordance with SSPWC, Section 306-1.3.3. Water jetting

may be supplemented by the use of vibratory or other compaction equipment when necessary to obtain the required compaction.

Where supports of any nature are used in the trench, said supports shall all be removed unless otherwise approved by the District. Where tight sheeting is used, it shall be removed systematically as soon as practicable after backfilling by pulling alternate pieces along each side of trench, alternating also from one side of trench to the other.

All surplus excavated material not used in the compacted backfill of the pipe trench shall be disposed of by the Contractor at his own expense. It shall be the responsibility of the Contractor to locate such suitable disposal sites, and obtain permits or other required authorizations.

A sample of backfill material shall be submitted to the District before construction. The District will perform a sieve analysis in accordance with ASTM C136 to determine if the pipe backfill material meets the requirements defined above unless one-sac slurry is used.

3. Pipe Replacement

A. Materials

Unless otherwise approved by the District Engineer, sewer pipe shall be limited to Vitrified Clay Pipe (VCP).

All VCP and fittings shall conform to the requirements of ASTM C700 as it applies to extra strength, unglazed VCP. Each section of pipe shall be clearly stamped with either the words "Extra Strength" or the letters "ES" designating the strength class. VCP joints shall either be plain end to plain end or bell and spigot conforming to ASTM C425. Plain end to plain end joints shall consist of steel banded rubber or elastomeric polyvinyl chloride couplings with corrosion resistant Type 316 stainless steel clamps and Type 305 bolts.

All manholes shall be constructed of pre-cast reinforced concrete eccentric cone sections with a minimum access opening of twenty-four (24) inches. Concentric cones may be used upon specific approval by the District Engineer. Any deviation from these material specifications must be approved by the District Engineer.

B. Pipe Installation

When an existing sewer is to be relieved, and also retained as part of the system, the relief method should maintain a velocity of three feet per second of possible, but not less than the minimum velocity for which the sewer was originally designed. Sufficient flow should remain in the existing sewer to maintain that original designed velocity. Overflow relief may be one way to satisfy the minimum velocity requirement. The total combined capacity of the new sewer and the existing sewer, (whether rehabilitated or not), when both are flowing full, (d/D = 1.0), shall equal twice the estimated PDWF as projected to the end of the designed period as shown in Table 250

The Contractor shall furnish the VCP and coordinate the time and location of delivery of the pipe from the pipe manufacturer to the jobsite. The District must approve the storage location for pipe at the jobsite. During loading, transporting, and unloading, every precaution shall be taken to prevent damage to the pipe.

Pipe laying and joining shall be done in conformance with SSPWC, Section 306-1.2.2 and 306-1.2.3 and all applicable ASTM standards.

In placing pipe in the trench, the pipe shall be held by a sling at the balancing point of the section. It shall not be dragged in the bottom of the trench or bumped, but shall be supported by

the sling while being fitted into the adjacent pipe section. The Contractor shall excavate bell holes in the trench as required.

At all times when the work of installing pipe is not in progress all openings into the pipe and the ends of the pipe in the trenches or structure shall be kept tightly closed to prevent entrance of animals and foreign materials. All foreign matter, which may have entered the pipe, shall be removed from each length of pipe before it is jointed in place.

The Contractor shall maintain the inside of the pipe free from foreign materials and in a clean and sanitary condition until its acceptance by the District.

The Contractor shall take all necessary precautions to prevent the pipe from floating due to water entering the trench from any source. The Contractor shall assume full responsibility for any damage resulting from water entering the trench and shall at his own expense, restore and replace the pipe to its specified condition and grade if it is displaced due to floating.

Inspection of the pipe by way of closed circuit television and visual inspection shall be performed by the District to ensure that there are no deficiencies in the joining and laying of the pipe. Any deficiencies will be corrected at the Contractors expense before bedding and backfill are allowed.

C. Disposal of Damaged Material

All abandoned material removed from the proposed project site shall become the property of the Contractor and shall be disposed of by him/her outside the limits of work in accordance with the applicable ordinances and regulations of governmental agencies having jurisdiction. Costs of said disposal shall be the sole responsibility of the Contractor and no additional compensation shall be made therefore. It shall be the responsibility of the Contractor to locate suitable disposal sites, and obtain permits or other required authorizations.

D. Existing Facilities

The Contractor shall provide all temporary sewer system bypasses. The Contractor shall submit the details of the proposed control operations to be used for the bypass and the proposed schedule of activities to the District for approval. The District shall have approval responsibility for the procedures to be used and the schedule. If any emergency should arise during the bypass activities, the Wastewater Collection Systems Division should be contacted at (818) 445-1721 or (818) 249-2185.

Any existing sewer line to be intercepted by a new sewer line shall be maintained-in-service or bypassed until authority to connect to the new sewer line is granted by the District. Such authority is contingent upon final inspection and acceptance of all new sewer system construction downstream from the required point of connection.

Throat grade rings may be used to raise manhole frame castings to a maximum of 18 inches from top of cone to bottom of castings. If the height is greater than 18 inches, for raising castings, then the cone shall be removed and manhole rebuilt accordingly.

When frames, covers, and grates of existing manholes, inlets or other facilities are removed, a traffic rated plate shall be placed over the opening. The traffic plate shall be of a design that the possibility of dislodgement is non-existent. The required use of a traffic plate will be waived if the work of raising frames, covers or grates is accomplished the same day.

The Contractor shall exercise care in removing manhole covers and frames and install cover plates for manhole to preclude the possibility of any rubble or debris from entering the sewer pipe. Should any rubble or debris fall into the manhole, the manhole shall be immediately

cleaned of any and all rubble and debris. At the discretion of the Engineer, the sewer main shall be flushed and cleaned downstream from the point of entry of any rubble and debris. The cost of flushing and cleaning of sewer mains as a result of rubble and debris entering into the mains shall be the sole responsibility of the Contractor and no additional compensation will be provided. Should the Contractor fail to flush and clean the sewer main, the Engineer shall order the work done by others and deduct the cost from any monies due the Contractor.

If the manhole cover is unstable under traffic, the manhole ring and cover shall be removed and replaced with a stable ring and cover.

All connections to the existing publicly owned treatment works must be made using a manufactured wye fitting. Saddling or other tapping methods shall not be allowed.

Sanitary sewer laterals encountered in the work that obstructs or otherwise interferes with other planned improvements shall be adjusted or relocated in accordance with appropriate provisions of these specifications.

4. Manhole Construction

A. Materials

Precast concrete manhole components shall be in accordance with ASTM C 478 and CVWD Std. Dwg. 20-S. Manhole components shall be designed for H-20 highway wheel loading and specific site conditions. H-20 refers to loading resulting from the passage of trucks having a gross weight of 20 tons, 80% of which is on the rear axle, with axle spacing of 14 ft., center to center, and a wheel gauge of six (6) ft., each rear wheel carrying one half this load or 8 tons each without impact.

Manhole sections shall be pre-cast concrete, forty-eight (48) inches in inside diameter, conforming to the requirements of ASTM Designation C478 except as amended herein. Pre-cast sections shall be of the size and dimensions required to fabricate finished manholes conforming to the CVWD Std. Dwg. 20-S. Standard pre-cast cones shall provide an eccentric reduction from forty-eight (48) inches to twenty-four (24) inches and shall not be less than eighteen (18) inches in height.

Manhole bases shall be cast-in-place, as appropriate for the application, with a formed recess shaped to match the first precast shaft section. Precast bases may be used if the District deems it appropriate for the application, with a formed recess shaped to match the first precast shaft section. All channels in the manhole shall be formed in accordance with Sections 303-1.3 and 303-1.4 of the SSPWC and CVWD Std. Dwg. S-20. The manhole base shall extend nine (9) inches below the bottom of the lowest pipe and six (6) inches above the top of the largest pipe.

All frames and covers shall conform to CVWD Std. Dwg. 22-S, except that there shall be one cast in hand hold for lifting. The Contractor shall construct manholes so as to provide adjustment space for setting cover casting to a finished. Manhole ring and covers shall be adjusted to the finished elevations prior to final acceptance of the work.

Pipe penetrations for sewer applications shall incorporate a watertight flexible pipe connector or ring-type seal according to the method of manhole construction. Precast manholes shall utilize either an integrally cast embedded pipe connector, or a boot-type connector installed in a circular block out opening in accordance with ASTM C 923.

Manhole steps and ladders shall conform to the dimensions shown on CVWD Std. Dwg 20-S. Steps shall be 1-inch diameter galvanized deformed bar conforming to ASTM A615.

B. Adding a Manhole to an Existing Line

Advise Engineer of system for diverting flow and obtain authorization before starting. The Contractor shall be totally responsible for maintaining adequate capacity for flow at all time and adequately protecting new and existing work. Construct manholes over existing operating lines at locations shown. Perform necessary excavation and construct new manholes in conformance with applicable requirements in Section 1.

Construct manholes as shown on the Plans or Standard Drawings. Densify the concrete base by vibrating or working as approved and screed to provide a level, uniform bearing for precast sections.

Place the first precast section of manhole in concrete base before concrete has set and deposit sufficient mortar on the base to assure a watertight seal between the base and the manhole wall. First section shall be properly located and plumb. Stacking additional precast manhole section shall be prohibited until the concrete has cured a sufficient amount to support the additional weight in moist conditions.

After pouring concrete base, remove the top section of the existing pipe to the full width of pipe and diameter of the manhole. Cover exposed edges of pipe completely with mortar. Trowel all mortar surfaces smooth.

Prevent broken material or debris from entering sewer flow. Maintain flow through existing lines at all times. Protect new concrete and mortar for a period of 7 days after placing.

C. Connection to Existing Manholes, Inlets and Concrete Structures

In regards to bypass and handling of existing sewer facilities, the Contractor /Property Owner shall be totally responsible for:

- Maintaining adequate capacity for flow
- Sufficiently protecting new and existing infrastructure.
- Provide all diversion facilities and perform all work necessary to maintain flow in existing lines during connection.

5. No-Dig Rehabilitation

A. Sewer Main Lining

Prior to the installation of CIPP lining materials, Contractor shall thoroughly clean the interior of the sewer line. Contractor shall remove all loose material, grease, scum, rust, mineral deposits, etc. using high pressure water, sandblast, acid wash or other approved method as necessary to secure a clean surface. Active infiltration shall be eliminated prior to placement of CIPP liner installation. Prior to the installation of CIPP, Contractor shall document the condition of the existing sewer structure. Past closed circuit television (CCTV) inspection reports for all lines involved in this project are provided in the in Appendix 4-D. Any damage done to the infrastructure during any lining operations shall be repaired at the expense of Contractor.

Contractor shall submit plans for review and approval detailing how Contractor plans to maintain flow in the collection system during installation of the CIPP. Contractor shall provide plugs as necessary to block flow that might hamper liner installation. The Contractor shall plug upstream laterals as necessary. Mainline flows that cannot be temporarily plugged without causing a sewage backup must be bypassed by the Contractor. A bypass plan shall be submitted to the District discussing the method and equipment to be used during the bypass for review and approval.

The length of the CIPP shall be that deemed necessary by the Contractor to effectively carry out the lining insertion. When cured, the CIPP shall extend from end to end of the sewer segment being lined forming continuous tight fitting, watertight liner. Contractor shall size CIPP as necessary to ensure the layers which constitute the pipe wall are such that when the resin cures, the total wall thickness must be homogeneous with no internal layer of plastic which might weaken the pipe wall and allow internal shear. When cured, the CIPP shall form a mechanical bond with the pipeline. The finished opening shall have a minimum diameter large enough to accommodate District cleaning and inspection equipment. No additional payment will be made for excavations for the purpose of rehabilitating these sections of pipe and the Contractor will be responsible for all costs and liability associated with such excavation and restoration work.

The curing method will be selected by the Contractor to best suit the CIPP material being used. Curing methods, test results (utilizing ASTM D790 method), and material samples shall be supplied to the District prior to any work beginning. Work will only be allowed to proceed upon approval of the material samples by the District.

The finished CIPP shall be continuous over the entire length of an insertion run and be as free from visual defects, such as foreign inclusions, dry spots, pinholes, and delamination. The CIPP shall be impervious and free of any leakage from the pipe to the surrounding ground or from the ground to the inside of the CIPP. If the CIPP fails to make a tight seal at any access point or terminating point, the Contractor shall repair seal with a resin mixture compatible with the CIPP. Connections to manholes and insertion through manholes shall be properly sealed by plugging any visible annular space with resin used to impregnate the liner creating a watertight seal. Any defects that will affect, in the foreseeable future, or warranty period, the integrity or strength of the CIPP, shall be repaired at the Contractor's expense.

After lining is complete, lateral connections to existing structures shall be reopened without excavation. The Contractor shall submit certification that they have the equipment necessary to reestablish lateral connections prior to work beginning for review and approval by the District. Unless otherwise directed by an authorized representative from the District, all laterals will be reinstated. No additional payment will be made for excavations for the purpose of reopening connections and the Contractor will be responsible for all costs and liability associated with such excavation and restoration work.

After all work is completed, the Contractor shall perform a post lining CCTV inspection to ensure an adequate quality of work. The liner shall be free of sags, folds, lifts or other irregularities that indicate improper fit or inadequately cured zones. The liner shall have no leakage or infiltration through the wall liner. Cut ends and lateral reinstatements shall provide a solid homogenous wall section without separations or delaminating

The basis of payment for providing the work for bid Items 2-11 shall be done on a unit price per linear foot basis per completed installation in accordance with the unit prices contained in its proposal. Payment shall include all flow control, safety, labor, equipment, material, installation, testing, site restoration and all other work specified or not which is reasonably required to provide a completed installation. Any item not specified shall be considered incidental to the work. Contractor shall include all incidental cost in the unit price for the installation of cast-in-place liner.

B. Manhole Relining

This specification covers concrete surfaces of manholes and lift station wet wells that require resistance to deterioration due to hydrogen sulfite (H_2S), root intrusion and/or other elements that lead to visible shelf damage.

Contractor shall, prior to manhole coating all surfaces of the manhole, remove all debris from the manhole walls and shelf using high pressure water spray (minimum 1,200 psi). Loose and protruding brick, mortar and concrete shall be removed using a masons hammer and chisel. All non-leaking voids shall be filled with a non-shrink cement-based material containing hydraulic cement, as approved by the District at least 1 hour prior to application of the first coat of liner. Prior to the application of the sewer lining material, Contractor shall document the condition of the existing sewer structure.

Manholes shall either be lined with an epoxy coating or a fiberglass material. Coatings shall be applied in accordance with the manufacturer's recommendations, including surface preparation as specified.

For fiberglass lining, the inner surface exposed to the chemical environment shall be a resin-rich layer of 0.010 to 0.020-inch thick. The inner surface layer exposed to the corrosive environment shall be followed with a minimum of two passes of chopped roving of minimum length 0.5-inch (13 mm) to maximum length of 2.0-inch (50.8 mm) and shall be applied uniformly to an equivalent weight of 3 oz/ft. Each pass of chopped roving shall be well rolled prior to the application of additional reinforcement. The combined thickness of the inner surface and interior layer shall not be less than 0.10-inch (2.5 mm). After the inner layer has been applied the manhole wall shall be constructed with chop and continuous strand filament wound manufacturing process, which insures continuous reinforcement and uniform strength and composition. The cone section, if produced separately, shall be affixed to the barrel section at the factory with resin-glass reinforced joint resulting in a one-piece unit. Seams shall be fiberglassed on the inside and the outside using the same glass-resin jointing procedure.

After application of the fiberglass material, flow access points shall be cut in place to prevent the blockage of any drop manhole connections. The liner shall be cured a minimum of 4 hours before being exposed to flow. All applied fiberglass lining materials must conform to ASTM D 3753.

For epoxy lining, Surface to receive lining shall be saturated but free of water drops. Liner shall be sprayed on following manufacturer's recommendations. Spray material to a minimum 1.0-inch uniform thickness to ensure that all voids and crevices are filled and a smooth surface remains after troweling. Trowel to compact material into voids and crevices and to "set" the bond on the manhole surface. Below 12 feet, minimum liner thickness shall be 1.5-inch (28 mm). Top limit of the liner shall be a minimum of 1.0-inch (25 mm) up onto the casting. The shelf shall receive a single coat of a minimum 0.5-inch (7.5 mm) thickness at the invert and shall increase in thickness in the direction of the wall so as to provide the required minimum slope. The entire bench shall be coated to the edge of the invert channel. The shelf/wall intersection shall receive a radiused fillet.

For polyurethane coatings, the surface prior to spraying shall be damp without noticeable free water droplets or running water. Material shall be spray applied to a minimum uniform thickness to insure that all voids and crevices are filled and a smooth surface remains after troweling for cement-based mix. The troweling of the cement-based mix shall compact material into voids and crevices and "set" the bond on the manhole surface (brick, tile, block or concrete).

After the first application has taken an initial set, but not over 72 hours, a second coat shall be spray applied to assure a minimum total thickness of ½ inches and trowel to a smooth finish for cement-based mix and a minimum total thickness of 1/8 inches for urethane-based material. Following the second application to the walls for the cement-based mix method, the wooden bench covers shall be removed and the bench sprayed from walls to the invert in a method to

produce a bench having a gradual slope from the walls to the invert with the wall/bench intersection built up and rounded to a uniform radius the circumference of the intersection. In addition, the thickness of the bench shall be no less than 1/2 inch at the invert and shall increase in the direction of the wall to provide the required slope. For the urethane-based material, the manhole wall and bottom thicknesses shall be stipulated by ground water pressure as recommended by manufacturer.

No application shall be made when ambient temperatures are less than 40°F and when freezing is expected within 24 hours unless specific recommendations are made by the manufacturer. Ambient temperatures of the mixture shall not exceed 90°F.

The final application shall have a minimum of 4 hours cure time before being subjected to active flow.

All Manhole lining shall comply with Standard Specifications for Public Works Constructions (SSPWC) specification 500-2.

After all work is completed, the Contractor shall perform a post-lining CCTV inspection to ensure an adequate quality of work. The liner shall be free of sags, folds, lifts or other irregularities that indicate improper fit or inadequately cured zones. The liner shall have no leakage or infiltration through the wall liner. any flow lines that may have been blocked by the application shall be reopened. The liner shall be cured a minimum of 4 hours before being exposed to flow. All applied epoxy lining materials shall conform to ASTM D 4787.

Inverts with visible damage or infiltration shall be repaired. Contractor shall block flow and clean invert. Patch material shall be applied a minimum of 0.5-inch thick over the entire invert and shall extend onto the bench sufficiently to tie to subsequent liner placement.

The basis of payment for providing all work necessary the manhole rehabilitation required by the project including, but not limited liner installation, manhole preparation, confined space access, and any incidentals will be paid on a vertical foot basis to the nearest foot, measured from the bottom of the frame to the top of the shelf and should be included as part of Bid Sheet Item No. 12-13 – Manhole Rehabilitation. The Vertical foot price shall constitute full compensation for all materials, labor, equipment, tools, and incidentals needed to complete the work.

6. Testing and Inspection Standards

A. General

As a final measure required for acceptance, the Contractor shall clean and televise all sanitary sewer mains. Then the Contractor shall televise the entire sewer main and all service connections. The process shall begin at the upstream manhole for each segment, and proceed to the downstream manhole for that same segment. Connections shall be televised from the cleanout to the main. The District will not accept video that is more than 90 days old.

The camera used for inspection shall be one specifically designed and constructed for sanitary sewer pipeline inspection. Lighting for the camera shall be suitable to provide a clear color picture of the entire periphery of the pipe. The television system shall be equipped to indicate the camera travel distance in feet by display on the video viewing screen. All television equipment (camera, monitor, etc.) must be capable of producing picture quality which is satisfactory to the District.

B. Cleaning and Video Inspection

Prior to video inspection, the sewer mains will be cleaned with a high velocity water jet. All debris shall be collected in the downstream manhole and removed. Debris shall not be released into the existing sewer system. During the entire video process, the distance counter must be set at zero at the upstream manhole for each segment (i.e. reset the counter to zero at each manhole). The Contractor will be required to pan and tilt at each manhole. Each manhole must be marked on the interior with paint or some other legible identifier. The Contractor will also be required to pan and tilt when any potential problems or abnormalities are noticed or suspected. Maximum travel speed for the camera will be 30 feet per minute.

C. Reporting

For CVWD crew standards of operations, the following video screen data will be required:

- Project name and project number
- Date of inspection
- Travel distance and time
- Depth of start and end manholes
- Size of main
- Type of pipe

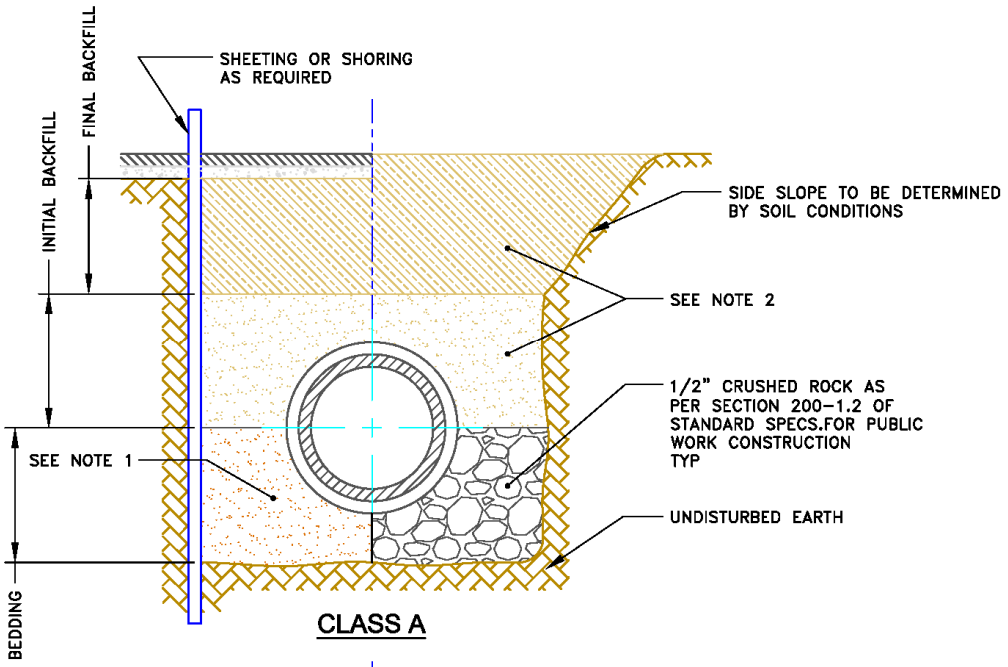
All above data shall be shown at the start and end manholes. While the camera is moving through the pipe, distance shall be the only data shown on the screen.

The entire video inspection shall be submitted to the Engineer on DVD (2 copies) and formatted with software compatible and readable by the District. The District shall not be responsible for purchasing additional software necessary to view the DVD.

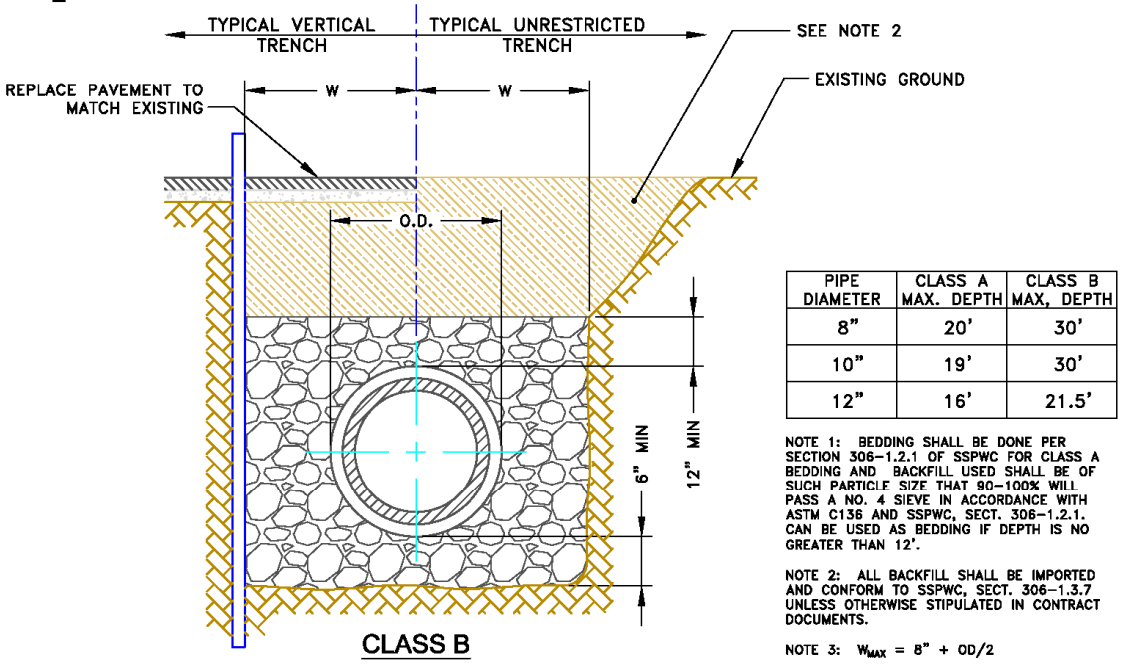
Any video that does not clearly show the pipe and service connections will be rejected. In the event that repairs are made, the segment receiving the repairs shall be televised again. A District representative must oversee the entire cleaning and televising process. Prior to beginning the process, a 24-hour notice must be given by the Contractor to the Engineer.

APPENDIX 5-B

STANDARD DRAWINGS



CLASS A



CLASS B

PIPE DIAMETER	CLASS A MAX. DEPTH	CLASS B MAX, DEPTH
8"	20'	30'
10"	19'	30'
12"	16'	21.5'

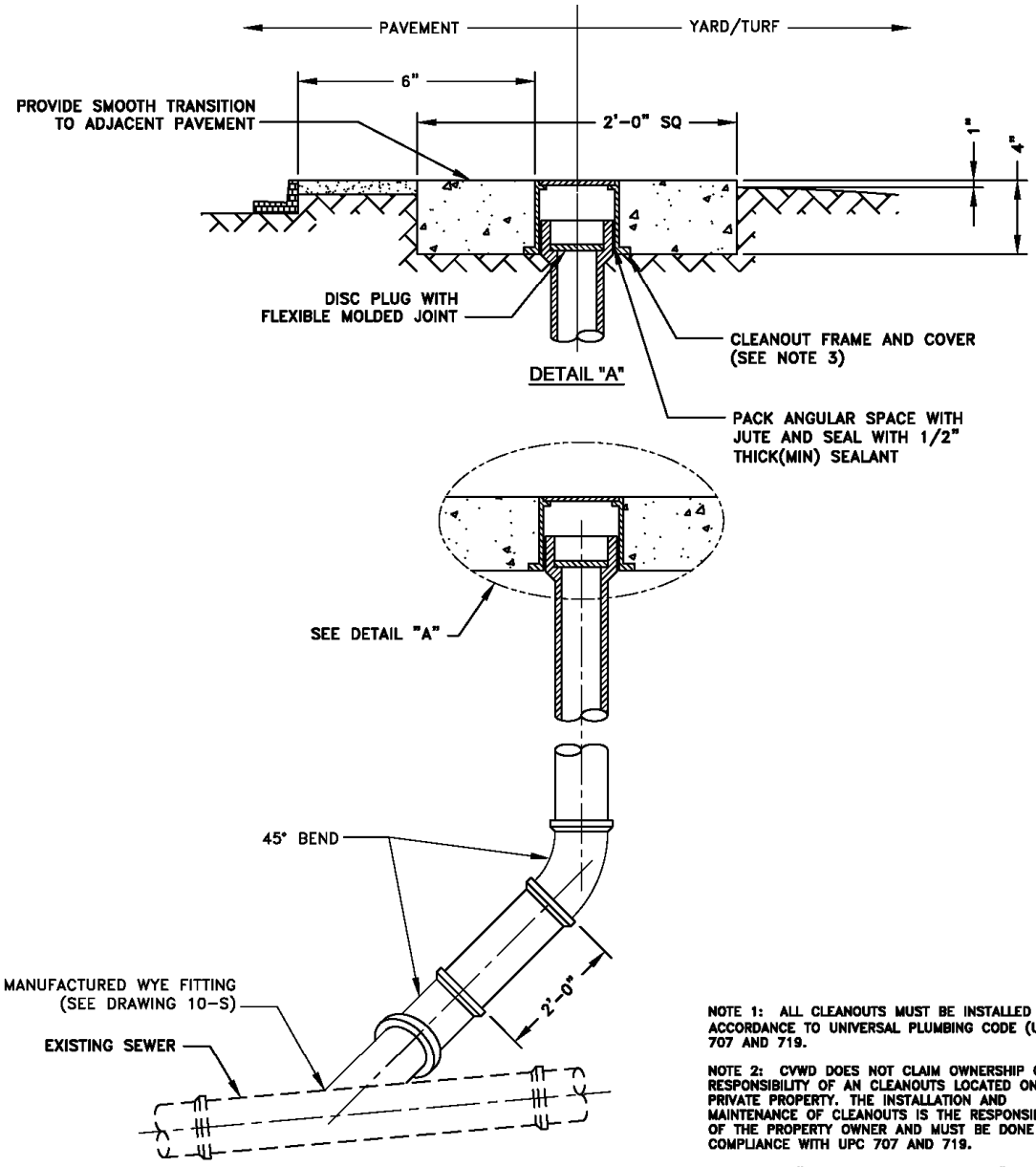
NOTE 1: BEDDING SHALL BE DONE PER SECTION 306-1.2.1 OF SSPWC FOR CLASS A BEDDING AND BACKFILL USED SHALL BE OF SUCH PARTICLE SIZE THAT 90-100% WILL PASS A NO. 4 SIEVE IN ACCORDANCE WITH ASTM C136 AND SSPWC, SECT. 306-1.2.1. CAN BE USED AS BEDDING IF DEPTH IS NO GREATER THAN 12'.

NOTE 2: ALL BACKFILL SHALL BE IMPORTED AND CONFORM TO SSPWC, SECT. 306-1.3.7 UNLESS OTHERWISE STIPULATED IN CONTRACT DOCUMENTS.

NOTE 3: W_{MAX} = 8" + OD/2

CRESCENTA VALLEY WATER DISTRICT CVWD

SCALE: NTS	TRENCH AND BACKFILL STANDARD	DATE: 03/14/2008	
DRAWN BY: B. YARED		JOB NO. -	DWG NO. 40-S
APP'VD BY: D. GOULD			



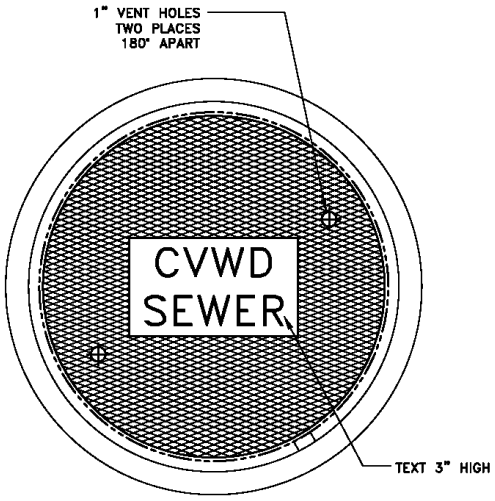
NOTE 1: ALL CLEANOUTS MUST BE INSTALLED IN ACCORDANCE TO UNIVERSAL PLUMBING CODE (UPC) 707 AND 719.

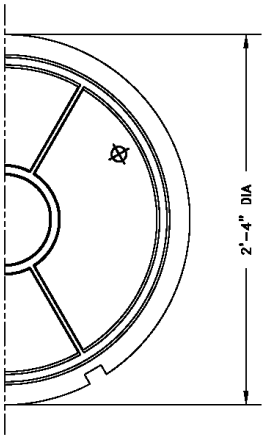
NOTE 2: CVWD DOES NOT CLAIM OWNERSHIP OR RESPONSIBILITY OF AN CLEANOUTS LOCATED ON PRIVATE PROPERTY. THE INSTALLATION AND MAINTENANCE OF CLEANOUTS IS THE RESPONSIBLITY OF THE PROPERTY OWNER AND MUST BE DONE IN COMPLIANCE WITH UPC 707 AND 719.

NOTE 3: 10" DIA CLEAR OPENING FOR 4" ID PIPE
12" DIA CLEAR OPENING FOR 6" ID PIPE
14" DIA CLEAR OPENING FOR 8" ID PIPE

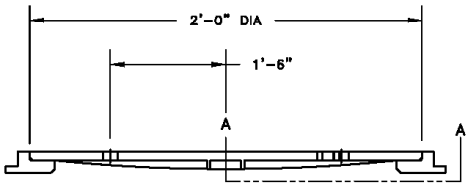
CRESCENTA VALLEY WATER DISTRICT CVWD

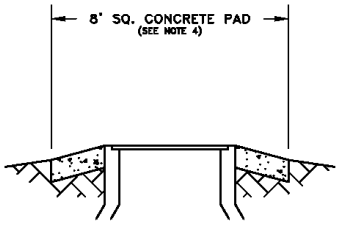
SCALE: NTS	STANDARD CLEANOUT	DATE: 04/18/2008	
DRAWN BY: B YARED		JOB NO.	DWG NO.
APP'VD BY: D GOULD		-	30-S





SECTION A–A





TOP OF MANHOLE IN
UNIMPROVED AREA

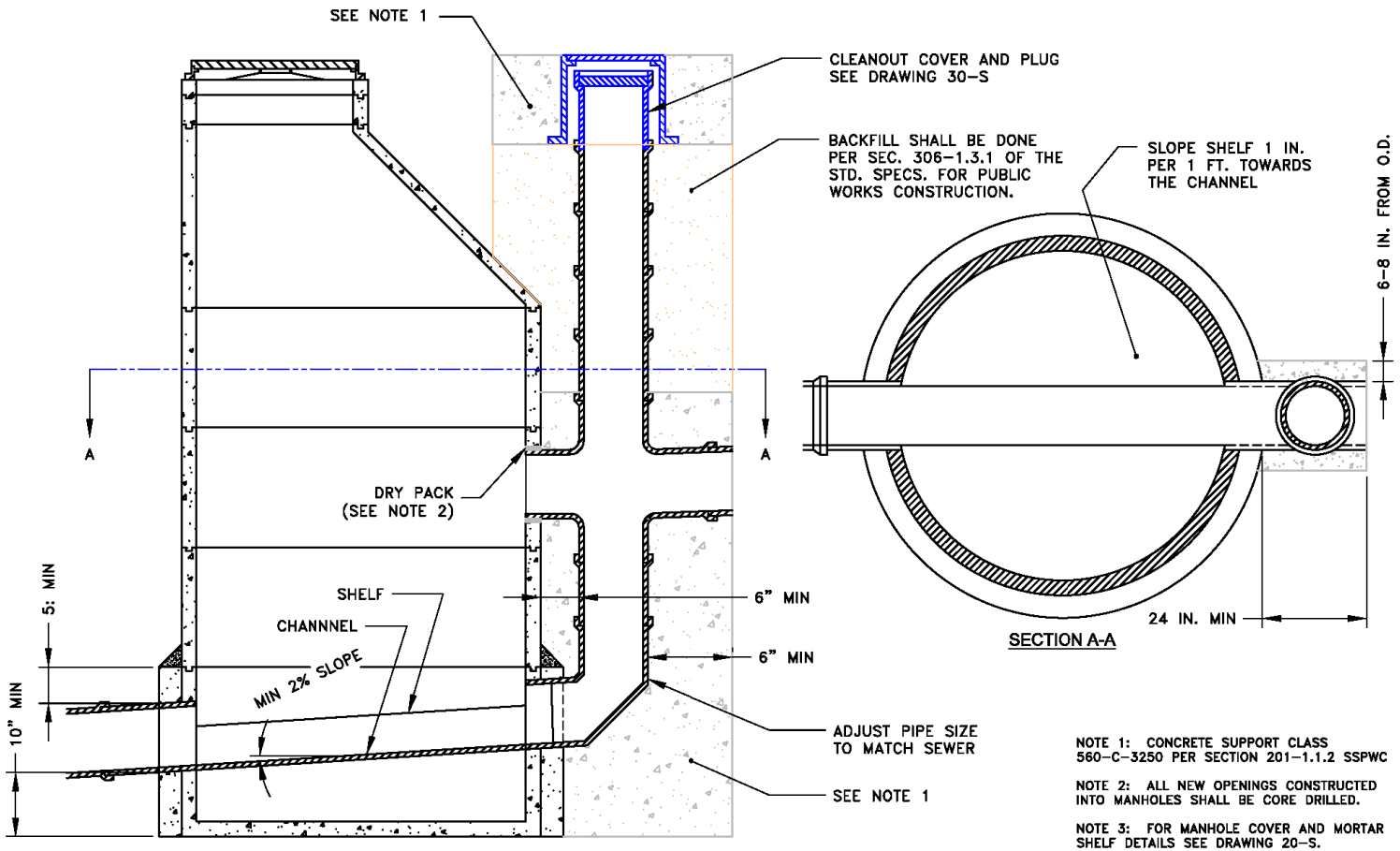
NOTE 1: MANHOLE LIDS TO BE MADE FROM CAST IRON AND CONFORM WITH ASTM A–48 CLASS 35B.

NOTE 2: MANHOLE MUST WEIGH A MINNIMUM OF 260 LBS.

NOTE 3: MANHOLE COVER AND RING SHALL BE LOCKING TYPE CAPABLE OF WITHSTANDING H–20 HIGH LOADING.

NOTE 4: FOR MANHOLES IN UNPAVED AREAS USE OF A PAM MANHOLE COVER IS REQUIRED.

CRESCENTA VALLEY WATER DISTRICT CVWD			
SCALE: NTS	STANDARD RING AND COVER	DATE: 03/14/2008	
DRAWN BY: B. YARED		JOB NO.	DWG NO.
APP'VD BY: D. GOULD		–	22–S



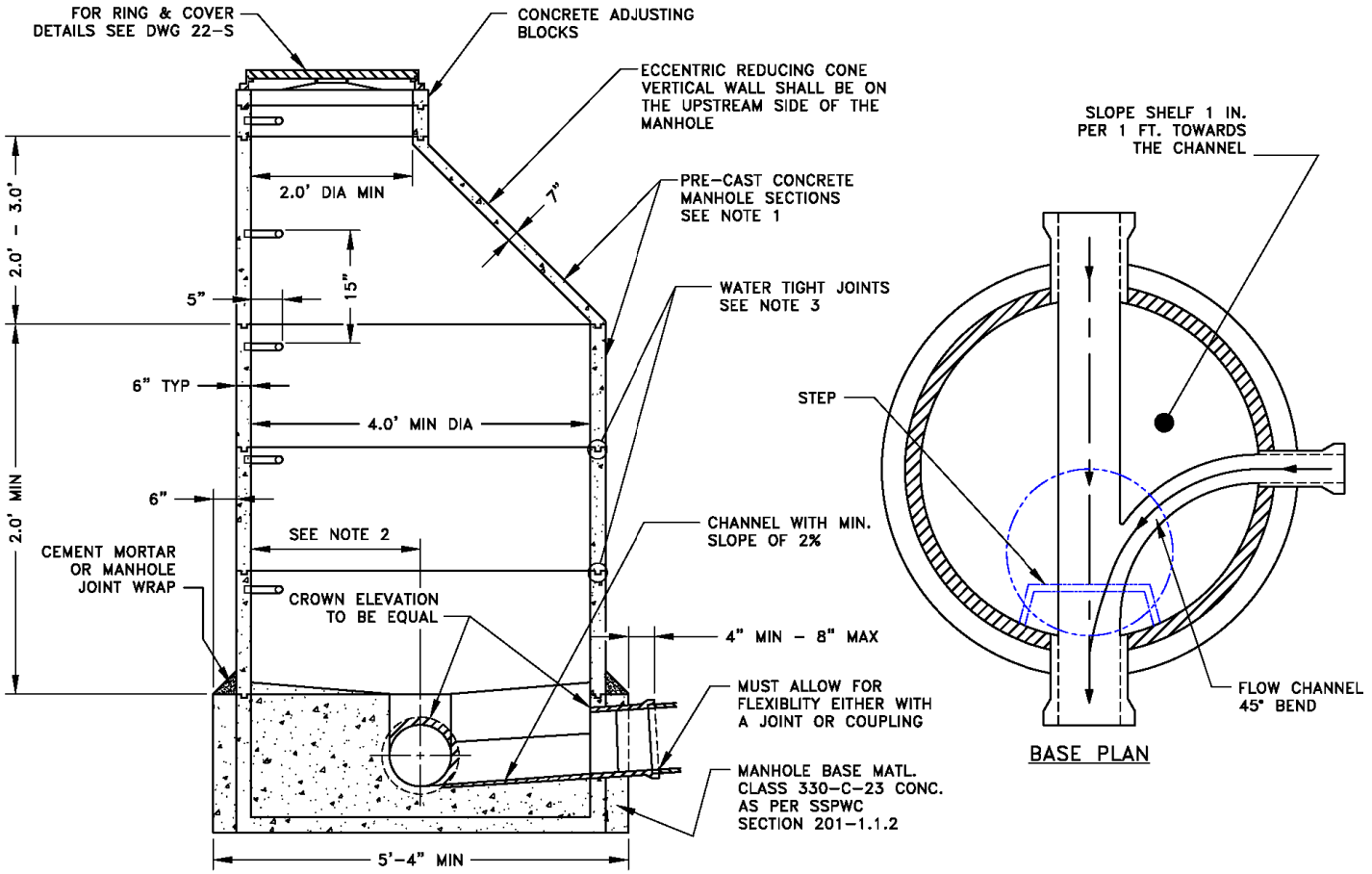
NOTE 1: CONCRETE SUPPORT CLASS 560-C-3250 PER SECTION 201-1.1.2 SSPWC

NOTE 2: ALL NEW OPENINGS CONSTRUCTED INTO MANHOLES SHALL BE CORE DRILLED.

NOTE 3: FOR MANHOLE COVER AND MORTAR SHELF DETAILS SEE DRAWING 20-S.

NOTE 4: DROP MANHOLES ONLY ALLOWED WITH SPECIAL CONSIDERATION BY THE DISTRICT.

CRESCENTA VALLEY WATER DISTRICT CVWD			
SCALE: NTS	STANDARD DROP MANHOLE	DATE: 04/09/2008	
DRAWN BY: B YARED		JOB NO.	DWG NO.
APP'VD BY: D GOULD		-	21-S



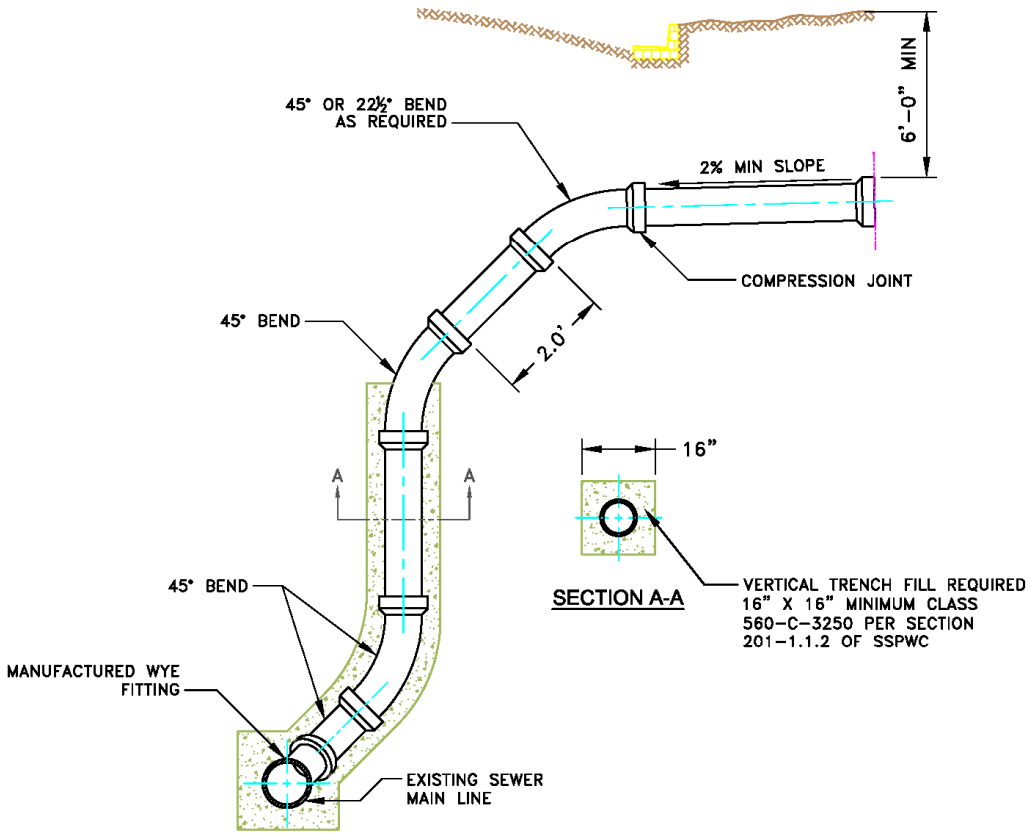
NOTE 1: NON-REINFORCED PRE-CAST MH'S SHALL BE CLASS 560-C-3250 AS PER SECT. 201-1 OF THE SSPWC. REINFORCED PRE- CAST MH'S SHALL MEET ASTM C-478 SPECS.

NOTE 2: FOR OFFSET MH'S THIS DIMENSION SHALL BE 1'-6".

NOTE 3: SUFFICIENT MORTAR SHALL BE APPLIED TO PROVIDE FOR A WATER TIGHT SEAL AROUND THE FULL CIRC. OF THE JOINT.

CRESCENTA VALLEY WATER DISTRICT CVWD

SCALE: NTS	STANDARD 48" MANHOLE	DATE: 03/13/2008	
DRAWN BY: B. YARED		JOB NO. -	DWG NO. 20-S
APP'VD BY: D. GOULD			



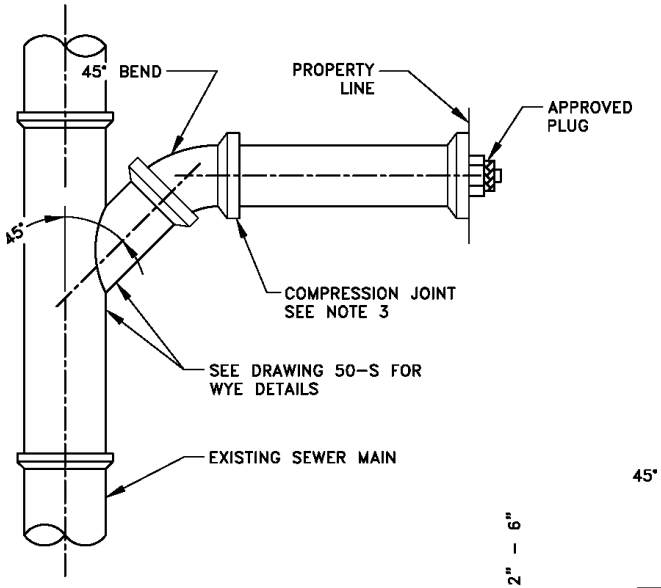
NOTE 1: CHIMNEY SERVICE LATERALS SHALL BE INSTALLED ON ALL LINES 15' DEEP OR GREATER

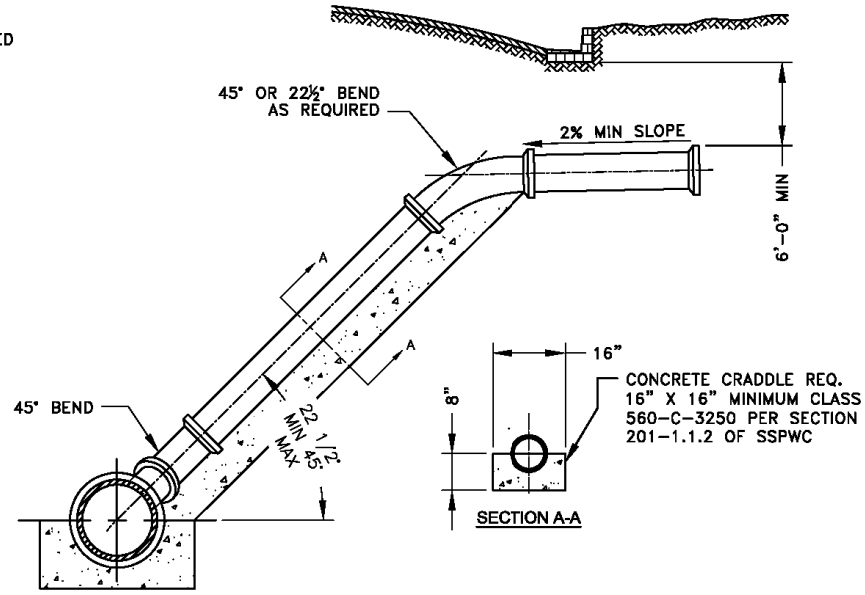
NOTE 2: COMPRESSION JOINTS FOR VCP SHALL MEET ASTM C-425

NOTE 3: SUITABLE TOILET FACILITIES, IN COMPLIANCE WITH THE UNIFORM PLUMBING CODE, MUST BE INSTALLED, AT THE OWNERS EXPENSE, IN ANY PROPERTY THAT CONNECTS TO THE PUBLICLY OWNED SEWER

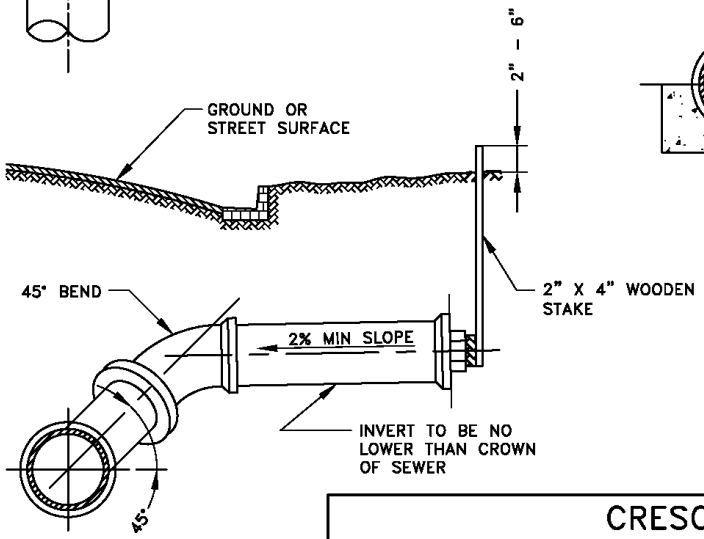
NOTE 4: ALL WORK DONE MUST BE INSPECTED AND APPROVED BY CVWD

CRESCENTA VALLEY WATER DISTRICT CVWD			
SCALE: NTS	STANDARD CHIMNEY LATERAL	DATE: 03/14/2008	
DRAWN BY: B. YARED		JOB NO. –	DWG NO. 11-S
APP'VD BY: D. GOULD			





DEEP LATERAL



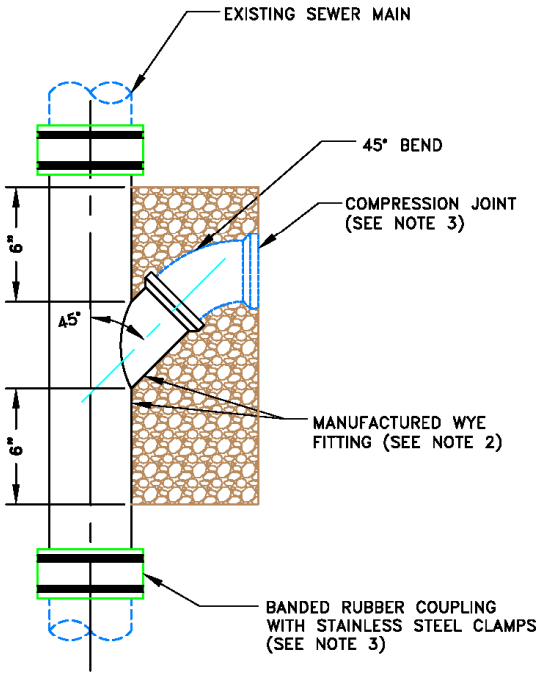
NOTE 1: FOR BEDDING DETAILS SEE DRAWING 40-S

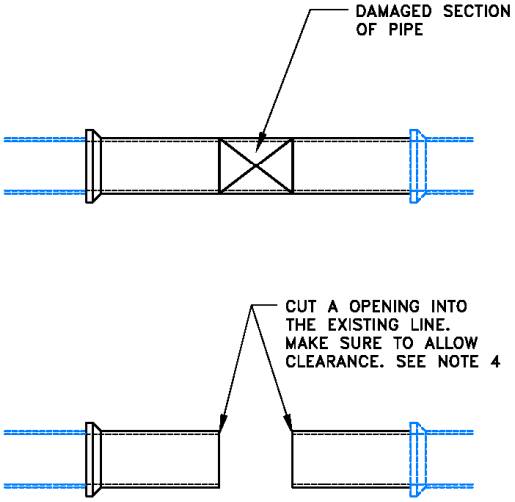
NOTE 2: COMPRESSION JOINTS FOR VCP SHALL MEET ASTM C-425

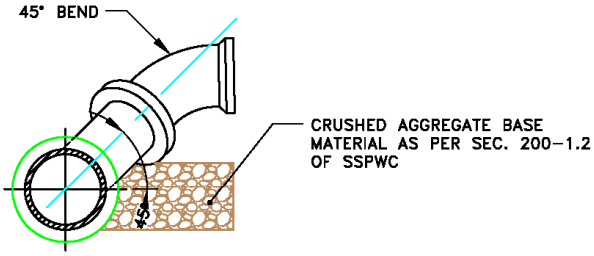
NOTE 3: SUITABLE TOILET FACILITIES, IN COMPLIANCE WITH THE UNIFORM PLUMBING CODE, MUST BE INSTALLED, AT THE OWNERS EXPENSE, IN ANY PROPERTY THAT CONNECT TO THE PUBLICLY OWNED SEWER.

NOTE 4: ALL WORK DONE MUST BE INSPECTED AND APPROVED BY CVWD

CRESCENTA VALLEY WATER DISTRICT CVWD			
SCALE: NTS	STANDARD SERVICE CONNECTION	DATE: 04/09/2008	
DRAWN BY: B. YARED		JOB NO.	DWG NO.
APP'VD BY: D. GOULD		-	10-S







NOTE 1: ALL CONNECTIONS TO THE CVWD WASTE WATER COLLECTIONS SYSTEM MUST BE DONE USING A PREFABRICATED WYE FITTING

NOTE 2: WYE PIPE BRANCH FASTENING MATERIAL SUCH AS EPOXY RESIN OR OTHER ACCEPTED MATERIAL SHALL HAVE STRENGTH EQUAL TO THE PIPE MATERIAL

NOTE 3: COMPRESSION JOINTS AND COUPLINGS FOR VCP SHALL MEET ASTM C425

NOTE 4: REMOVED PIPING SECTION MUST BE CUT CLEANLY AND ALL MATERIAL MUST BE DISPOSED OF PROPERLY

NOTE 5: ALL WORK DONE MUST BE INSPECTED AND APPROVED BY CVWD

CRESCENTA VALLEY WATER DISTRICT

CVWD

SCALE: NTS	STANDARD CONNECTION INTO EXISTING SEWER	DATE: 4/18/2008	
DRAWN BY: B YARED		JOB NO. –	DWG NO. 50-S
APP'VD BY: D GOULD			

APPENDIX 6-A

SPILL ESTIMATION TABLE

Attachment D - Sample Templates for SSO Volume Estimation

TABLE 'A'

ESTIMATED SSO FLOW OUT OF M/H WITH COVER IN PLACE

24" COVER

Height of spout above M/H rim H in inches	S S O FLOW Q		Min. Sewer size in which these flows are possible
	in gpm	in MGD	
1/4	1	0.001	
1/2	3	0.004	
3/4	6	0.008	
1	9	0.013	
1 1/4	12	0.018	
1 1/2	16	0.024	
1 3/4	21	0.030	
2	25	0.037	
2 1/4	31	0.045	
2 1/2	38	0.054	
2 3/4	45	0.065	
3	54	0.077	
3 1/4	64	0.092	
3 1/2	75	0.107	
3 3/4	87	0.125	
4	100	0.145	
4 1/4	115	0.166	
4 1/2	131	0.189	
4 3/4	148	0.214	
5	166	0.240	
5 1/4	185	0.266	
5 1/2	204	0.294	
5 3/4	224	0.322	6"
6	244	0.352	
6 1/4	265	0.382	
6 1/2	286	0.412	
6 3/4	308	0.444	
7	331	0.476	
7 1/4	354	0.509	
7 1/2	377	0.543	
7 3/4	401	0.578	8"
8	426	0.613	
8 1/4	451	0.649	
8 1/2	476	0.686	
8 3/4	502	0.723	
9	529	0.761	

36" COVER

Height of spout above M/H rim H in inches	S S O FLOW Q		Min. Sewer size in which these flows are possible
	in gpm	in MGD	
1/4	1	0.002	
1/2	4	0.006	
3/4	8	0.012	
1	13	0.019	
1 1/4	18	0.026	
1 1/2	24	0.035	
1 3/4	31	0.044	
2	37	0.054	
2 1/4	45	0.065	
2 1/2	55	0.079	
2 3/4	66	0.095	
3	78	0.113	
3 1/4	93	0.134	
3 1/2	109	0.157	
3 3/4	127	0.183	
4	147	0.211	
4 1/4	169	0.243	
4 1/2	192	0.276	
4 3/4	217	0.312	6"
5	243	0.350	
5 1/4	270	0.389	
5 1/2	299	0.430	
5 3/4	327	0.471	
6	357	0.514	
6 1/4	387	0.558	8"
6 1/2	419	0.603	
6 3/4	451	0.649	
7	483	0.696	
7 1/4	517	0.744	
7 1/2	551	0.794	
7 3/4	587	0.845	10"
8	622	0.896	
8 1/4	659	0.949	
8 1/2	697	1.003	
8 3/4	734	1.057	
9	773	1.113	

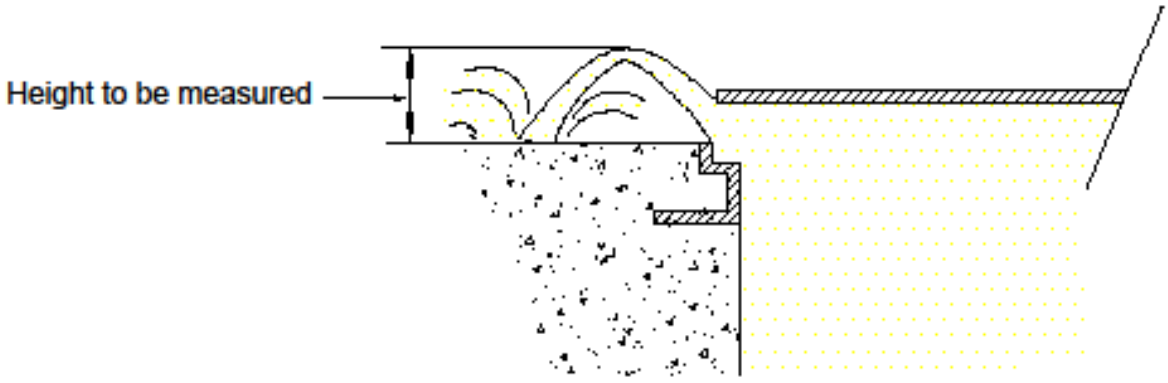
Disclaimer:
This sanitary sewer overflow table was developed by Ed Euyen, Civil Engineer, P.E. No. 33955, California, for County Sanitation District 1. This table is provided as an example. Other Agencies may want to develop their own estimating tables.

The formula used to develop Table A measures the maximum height of the water coming out of the maintenance hole above the rim. The formula was taken from hydraulics and its application by A.H. Gibson (Constable & Co. Limited).

Example Overflow Estimation:

The maintenance hole cover is unseated and slightly elevated on a 24" casting. The maximum height of the discharge above the rim is 5 ¼ inches. According to Table A, these conditions would yield an SSO of 185 gallons per minute.

FLOW OUT OF M/H WITH COVER IN PLACE



This sanitary sewer overflow drawing was developed by Debbie Myers, Principal Engineering Technician, for Ed Euyen, Civil Engineer, P.E. No. 33955, California, of County Sanitation District 1.

Collection System Collaborative Benchmarking Group
Best Practices for Sanitary Sewer Overflow (SSO) Prevention and Response Plan

TABLE 'B'
ESTIMATED SSO FLOW OUT OF M/H WITH COVER REMOVED

24" FRAME

Water Height above M/H frame H in inches	S S O FLOW Q in gpm	in MGD	Min. Sewer size in which these flows are possible
1/8	28	0.04	
1/4	62	0.09	
3/8	111	0.16	
1/2	160	0.23	
5/8	215	0.31	6"
3/4	354	0.51	8"
7/8	569	0.82	10"
1	799	1.15	12"
1 1/8	1,035	1.49	
1 1/4	1,340	1.93	15"
1 3/8	1,660	2.39	
1 1/2	1,986	2.86	
1 5/8	2,396	3.45	18"
1 3/4	2,799	4.03	
1 7/8	3,132	4.51	
2	3,444	4.96	21"
2 1/8	3,750	5.4	
2 1/4	3,986	5.74	
2 3/8	4,215	6.07	
2 1/2	4,437	6.39	
2 5/8	4,569	6.58	24"
2 3/4	4,687	6.75	
2 7/8	4,799	6.91	
3	4,910	7.07	

36" FRAME

Water Height above M/H frame H in inches	S S O FLOW Q in gpm	in MGD	Min. Sewer size in which these flows are possible
1/8	49	0.07	
1/4	111	0.16	
3/8	187	0.27	6"
1/2	271	0.39	
5/8	361	0.52	8"
3/4	458	0.66	
7/8	556	0.8	10"
1	660	0.95	12"
1 1/8	1,035	1.49	
1 1/4	1,486	2.14	15"
1 3/8	1,951	2.81	
1 1/2	2,424	3.49	18"
1 5/8	2,903	4.18	
1 3/4	3,382	4.87	
1 7/8	3,917	5.64	21"
2	4,458	6.42	
2 1/8	5,000	7.2	24"
2 1/4	5,556	8	
2 3/8	6,118	8.81	
2 1/2	6,764	9.74	
2 5/8	7,403	10.66	
2 3/4	7,972	11.48	30"
2 7/8	8,521	12.27	
3	9,062	13.05	
3 1/8	9,604	13.83	
3 1/4	10,139	14.6	
3 3/8	10,625	15.3	36"
3 1/2	11,097	15.98	
3 5/8	11,569	16.66	
3 3/4	12,035	17.33	
3 7/8	12,486	17.98	
4	12,861	18.52	
4 1/8	13,076	18.83	
4 1/4	13,285	19.13	
4 3/8	13,486	19.42	

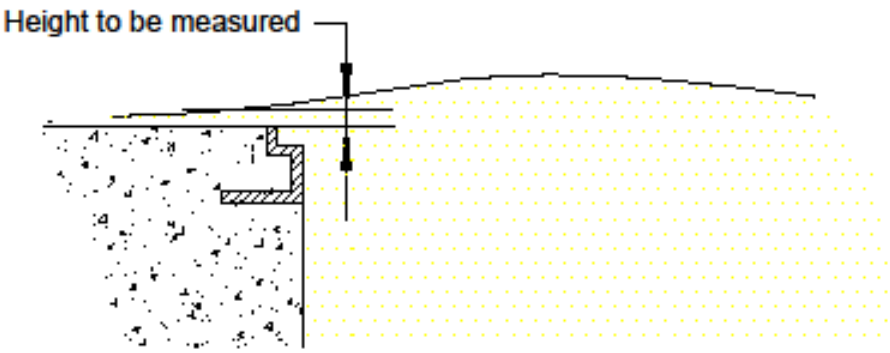
Disclaimer:
This sanitary sewer overflow table was developed by Ed Euyen, Civil Engineer, P.E. No. 33955, California, for County Sanitation District 1. This table is provided as an example. Other Agencies may want to develop their own estimating tables.

The formula used to develop Table B for estimating SSO's out of maintenance holes without covers is based on discharge over curved weir – bell mouth spillways for 2" to 12" diameter pipes. The formula was taken from hydraulics and its application by A.H. Gibson (Constable & Co. Limited).

Example Overflow Estimation:

The maintenance hole cover is off and the flow coming out of a 36" frame maintenance hole at one inch (1") height will be approximately 660 gallons per minute.

FLOW OUT OF M/H WITH COVER REMOVED (TABLE "B")



This sanitary sewer overflow drawing was developed by Debbie Myers, Principal Engineering Technician, for Ed Euyen, Civil Engineer, P.E. No. 33955, California, of County Sanitation District 1.

TABLE 'C'

ESTIMATED SSO FLOW OUT OF M/H PICK HOLE

Height of spout above M/H cover H in Inches	SSO FLOW Q in gpm	Height of spout above M/H cover H in Inches	SSO FLOW Q in gpm	
1/8	1.0	5 1/8	6.2	
1/4	1.4	5 1/4	6.3	
3/8	1.7	5 3/8	6.3	
1/2	1.9	5 1/2	6.4	
5/8	2.2	5 5/8	6.5	
3/4	2.4	5 3/4	6.6	
7/8	2.6	5 7/8	6.6	
1	2.7	6	6.7	
1 1/8	2.9	6 1/8	6.8	
1 1/4	3.1	6 1/4	6.8	
1 3/8	3.2	6 3/8	6.9	
1 1/2	3.4	6 1/2	7.0	Unrestrained M/H cover will start to lift
1 5/8	3.5	6 5/8	7.0	
1 3/4	3.6	6 3/4	7.1	
1 7/8	3.7	6 7/8	7.2	
2	3.9	7	7.2	
2 1/8	4.0	7 1/8	7.3	
2 1/4	4.1	7 1/4	7.4	
2 3/8	4.2	7 3/8	7.4	
2 1/2	4.3	7 1/2	7.5	
2 5/8	4.4	7 5/8	7.6	
2 3/4	4.5	7 3/4	7.6	
2 7/8	4.6	7 7/8	7.7	
3	4.7	8	7.7	
3 1/8	4.8	8 1/8	7.8	
3 1/4	4.9	8 1/4	7.9	
3 3/8	5.0	8 3/8	7.9	
3 1/2	5.1	8 1/2	8.0	
3 5/8	5.2	8 5/8	8.0	
3 3/4	5.3	8 3/4	8.1	
3 7/8	5.4	8 7/8	8.1	
4	5.5	9	8.2	
4 1/8	5.6	9 1/8	8.3	
4 1/4	5.6	9 1/4	8.3	
4 3/8	5.7	9 3/8	8.4	
4 1/2	5.8	9 1/2	8.4	
4 5/8	5.9	9 5/8	8.5	
4 3/4	6.0	9 3/4	8.5	
4 7/8	6.0	9 7/8	8.6	
5	6.1	10	8.7	

Note: This chart is based on a 7/8 inch diameter pick hole

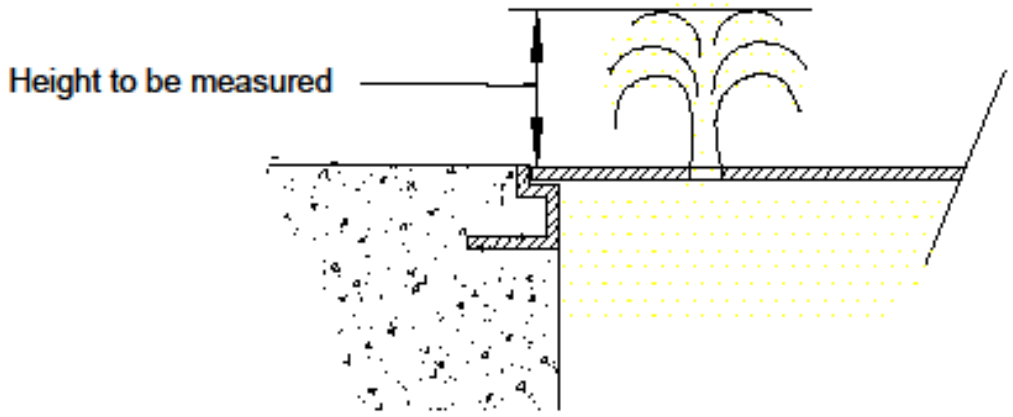
Disclaimer: This sanitary sewer overflow table was developed by Ed Euyen, Civil Engineer, P.E. No. 33955, California, for County Sanitation District 1. This table is provided as an example. Other Agencies may want to develop their own estimating tables.

The formula used to develop Table C is Q=CcVA, where Q is equal to the quantity of the flow in gallons per minute, Cc is equal to the coefficient of contraction (.63), V is equal to the velocity of the overflow, and A is equal to the area of the pick hole.[2] If all units are in feet, the quantity will be calculated in cubic feet per second, which when multiplied by 448.8 will give the answer in gallons per minute. (One cubic foot per second is equal to 448.8 gallons per minute, hence this conversion method).

Example Overflow Estimation:

The maintenance hole cover is in place and the height of water coming out of the pick hole seven-eighths of an inch in diameter (7/8") is 3 inches (3"). This will produce an SSO flow of approximately 4.7 gallons per minute.

FLOW OUT OF VENT OR PICK HOLE (TABLE "C")



This sanitary sewer overflow drawing was developed by Debbie Myers, Principal Engineering Technician, for Ed Euyen, Civil Engineer, P.E. No. 33955, California, of County Sanitation District 1.

[2] Velocity for the purposes of this formula is calculated by using the formula h = v squared / 2G, where h is equal to the height of the overflow, v is equal to velocity, and G is equal to the acceleration of gravity.

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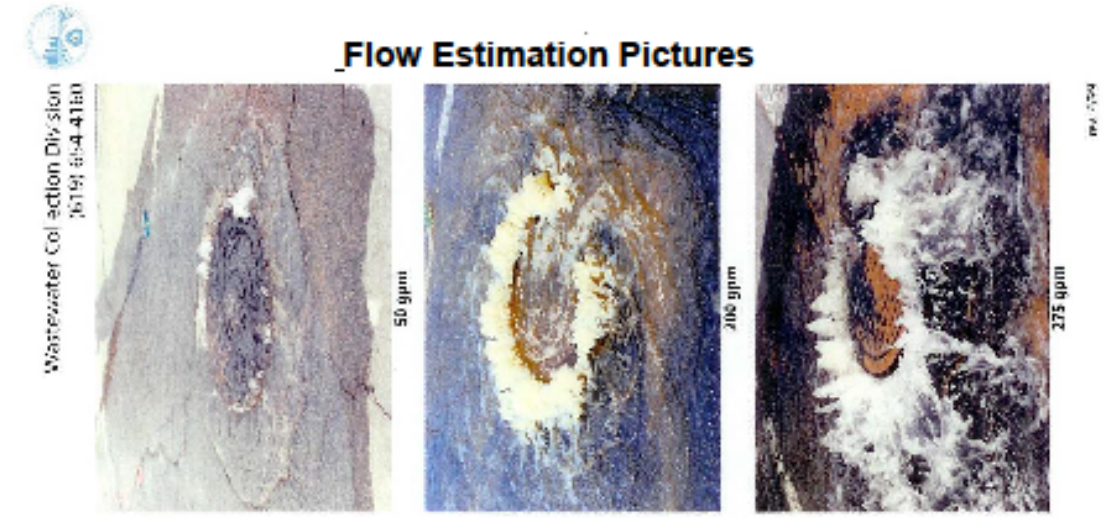
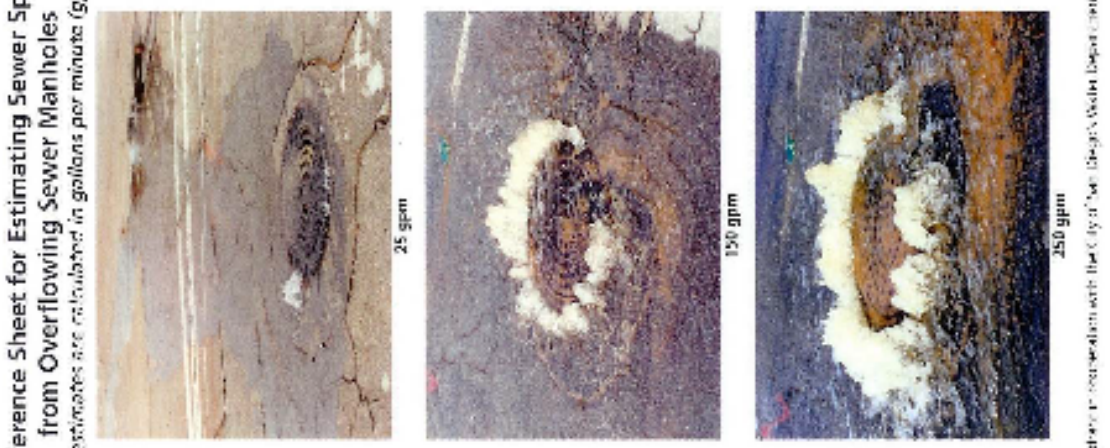
Best Practices for Sanitary Sewer Overflow (SSO) Prevention and Response Plan

Flow Estimation Pictures

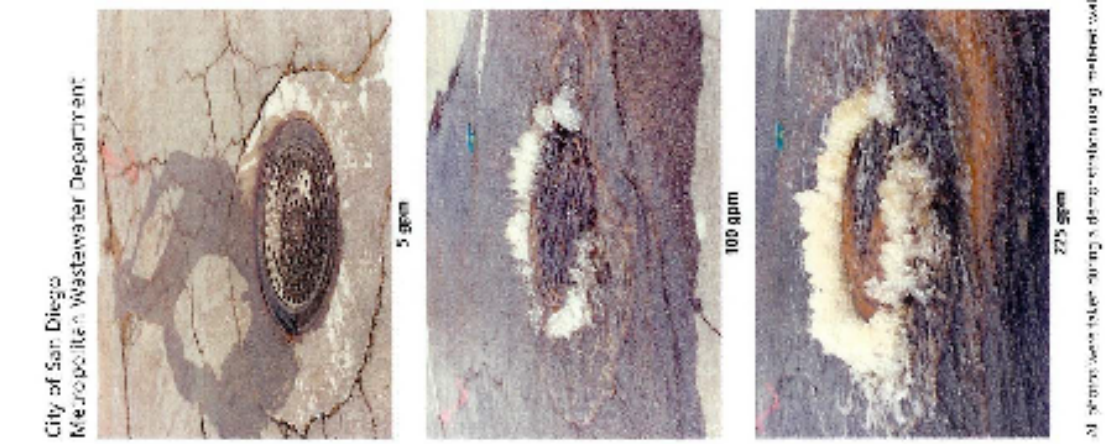


Reference Sheet for Estimating Sewer Spills from Overflowing Sewer Manholes

All estimates are calculated in gallons per minute (gpm)



City of San Diego
Metropolitan Wastewater Department



APPENDIX 6-B

SAMPLE PRIVATE LATERAL ISSUE LETTER

[Date]

[Customer Name]
[Address]
[City, CA **Zip Code]**

Dear **[Customer Name],**

Crescenta Valley Water District's Wastewater Division is dedicated to preventing sewer system overflows in our service area. To maintain the collection system properly, CVWD utilizes a Closed-Circuit Television system, or CCTV, that allows District personnel to visually inspect every sewer line within our service area and take action to make repairs when necessary. The sewer lateral from a home to the sewer main, called a private lateral, is the responsibility of the homeowner.

You are receiving this letter because while reviewing the inspection video of the sewer main adjacent to your home, District staff observed that your sewer lateral was impacted with roots and is in serious need of maintenance. CVWD's Wastewater division is sharing this information with you so you can contact a plumbing professional as soon as possible to address this matter. Roots or any obstruction in your private lateral line can result in a sewage backup in your home.

[Insert Image]

[Insert Image]

A private lateral spill is a serious risk to public health and can cause large amounts of property damage. Private lateral spills are not the responsibility of the District. Damages resulting from sewer overflows caused by a private lateral blockage are solely the homeowner's responsibility.

When you have maintenance done on your private lateral, please contact CVWD 24-hours in advance of the work taking place. The District will schedule crews to be onsite to prevent debris that is removed from your lateral from damaging sewer infrastructure downstream of your connection or possibly causing a sewage overflow. CVWD will place debris baskets in the sewer system to capture any material loosened by your repair activities.

CVWD thanks you for taking care of this important issue. If you have any questions or comments, please contact Jennifer Bautista at (818) 236-4116 or email at jbautista@cvwd.com.

Sincerely,

Brook Yared, M.S., P.E.
Engineering Manager

JB: giw
cc: Tessa Allmon – CVWD
Darlene Telles – CVWD
Jake Whittaker – CVWD

G:\Engineering\Sewers\Private_Lat_ltr-1.doc

APPENDIX 6-C

EMERGENCY RESPONSE ACTION PLANS

(REMOVE PAGES FOR REFERENCE DURING AN EMERGENCY)

Appendix 6-C

Emergency Action Plans

CVWD's Action Plan (AP) is a set of procedures for specific emergency scenarios that can be utilized by District Staff. The following list is a group of potential emergency response scenarios that can used by the Wastewater Department.

1. Earthquake Plan
    a. During Business Hours
    b. After Hours
2. Power Outage at Lift Station
3. Low Flow SSO – Local Residential Street
4. High Flow SSO – At Sewer Main Confluences within CVWD's Collection System
5. High Flow SSO – On Sewer Interceptor
6. High Flow SSO – At Diverter Valve

1a. Earthquake Plan – During Business Hours

CVWD's Wastewater Department's sequence of procedures when an earthquake occurs in the District or within an agency that has a mutual aid agreement with the District:

1. **Sizable Earthquake (5.0 Magnitude or Above) Occurs within the District During Business Hours**.

During the Earthquake

2. Employees should avoid being injured by falling objects or debris:
   A. Seek cover under a sturdy table or desk. Stay away from windows, bookcases, file cabinets, tall furniture, heavy mirrors, hanging plants, and other heavy objects that could fall. Watch out for falling plaster or ceiling tiles. If no table or desk is available, seek cover against an interior wall and protect your head and neck with your arms
   B. Stay under cover until the shaking stops.
   C. Remain in a safe place until the earthquake has passed.
   D. Employees meet at designated meeting area per evacuation plan.

After the Earthquake

3. **General Manager and Management Staff** will assess the situation:
   A. Determine if use of the Emergency Operations Center (EOC) is necessary.
      1. The EOC is located at 3730 Glenwood Ave. at the Glenwood Operations Facility.
   B. Keep staff informed about District actions. Phone numbers are provided in Appendix 2-B. Radios should also be used to keep everyone informed in an emergency.
   C. Assure that all employees are safe and accounted for:

      All employees should take the earliest opportunity to attempt to contact family members and determine if there are any personal emergencies that they need to attend to.
   D. People with injuries or hindered mobility should be evacuated immediately whether by their own means or with a District vehicle to the nearest medical facility.

4. **Customer Service Staff** to contact local emergency response agencies and act as a call center for any customers calling in to report emergencies. If phones are down, attempt to contact local emergency responders via e-mail or radio.

5. **Construction Supervisor** to contact Management staff at the Main Office either by radio, cell phone or land line for direction, while beginning to mobilize Vactor Truck and Emergency Response Trailer.

6. **Sewer System Assessment**
   A. **Construction Supervisor** to dispatch **Maintenance Crew** with Vactor truck and Emergency Response Trailer to lift station.
   B. **Maintenance Crew** to inspect the following at the Lift Station:
      1. Check if electrical service is on or off.

2. Check wastewater level in the wet well.

3. Estimate flow by periodically recording the wet well level throughout the duration of the event.

4. Check pump float system.

5. Check telemetry system.

6. If wet well has a level above 5-feet:
    a. Set up Vactor truck to pump out wet well
    b. Mitigate any spills observed and prevent as much material from entering drainage channels as possible.
    c. Contact Los Angeles County Flood Control Immediately and inform them of a discharge to Channel PD 1644.

C. Contact Construction Supervisor on status of Lift Station and for further directions.

D. If Lift Station working properly, then Maintenance Crew to begin assessment of CVWD's Collection System. If Lift Station is still experiencing issues contact PumpMan, Inc. at (626) 939-0300 for additional assistance.

E. **Construction Supervisor** to visually inspect areas for any overflows beginning with the Sewer Interceptor line and diverter valve in Glendale.

F. **Construction Supervisor** to report status and any SSOs to the EOC.

G. **Construction Supervisor** to contact City of Glendale if additional support is required.

H. **Maintenance Crew** to visually inspect CVWD's collection system while the inspection of the Sewer Interceptor line is completed by the Construction Supervisor.

7. **Senior Engineer** or **Program Specialist** to report SSO's to the California Emergency Management Agency. If further assistance is needed either individual shall contact neighboring agencies or emergency contractors as necessary.

8. **Construction Supervisor and Maintenance Crew** to report to EOC and Operations and Maintenance Manager on status of the sewer system and wait for instructions from the EOC.

9. **Operations and Maintenance Manager** to meet and report to the EOC the condition of the sewer system. EOC to advise Operations and Maintenance Manager on the sewer clean-up priority and direct the Construction Supervisor.

10. **Construction Supervisor** to maintain contact with Operations and Maintenance Manager on status of clean-up.

11. At conclusion of clean-up, Wastewater crews to report back to EOC for further instruction.

12. CVWD to report all SSO incidents per the CVWD protocol.

1b. Earthquake Plan – After Hours

The CVWD's Wastewater Department sequence procedures when an earthquake occurs in the District or within an agency that has a mutual aide agreement with the District:

1. **Sizable Earthquake Occurs within the District After Hours**.

During the Earthquake:

2. Employees should avoid being injured by falling objects or debris:
   A. Duck under a sturdy table or desk. Stay away from windows, bookcases, file cabinets, tall furniture, heavy mirrors, hanging plants, and other heavy objects that could fall. Watch out for falling plaster or ceiling tiles.
   B. Stay under cover until the shaking stops. If no table or desk is available, seek cover against an interior wall and protect your head and neck with your arms.
   C. Remain in a safe place until the earthquake has passed.

After the Earthquake:

3. Assess the situation at home to make sure there are no personal emergencies that need to be attended to immediately.
4. **Construction Supervisor** to contact Management Staff to determine if necessary to report to work.
5. **Maintenance Crews** to contact **Construction Supervisor** or Management Staff to determine if necessary to report to work.
6. **General Manager and Management Staff** will assess the situation:
   A. Determine if employees should report to work and use the Emergency Operations Center (EOC), is necessary.
      1. EOC is located at 3730 Glenwood Ave. at the Glenwood Operations Facility
   D. Keep staff informed about District actions.
7. **Office Staff** to contact local emergency response agencies and act as a call center for any customers calling in to report emergencies.
8. **Wastewater Crew** to report to Glenwood Plant if necessary and begin to mobilize Vactor Truck and Emergency Response Trailer.
9. **Sewer System Assessment**
   A. **Construction Supervisor** to dispatch **Maintenance Crew** with Vactor Truck and Emergency Reponses Trailer to lift station
   B. **Maintenance Crew** to inspect the following at the Lift Station;
      1. Check if electrical service is on or off.
      2. Check wastewater level in the wet well.
      3. Check pump float system.
      4. Check telemetry system.
      5. If wet well is overflowing:

a. Set up Vactor truck to pump out wet well

b. Mitigate any spills observed and prevent as much material from entering drainage channels as possible.

6. Contact Construction Supervisor on status of Lift Station and for further directions.

7. If Lift Station working properly, then Maintenance Crew to begin assessment of CVWD's Collection System.

8. If Lift Station is still experiencing issues contact PumpMan, Inc. at (626) 939-0300 for additional assistance.

E. **Construction Supervisor** to visually inspect areas for any overflows beginning with the sewer interceptor and diverter valve in Glendale.

F. **Construction Supervisor** to report status of any SSOs to the Management staff.

G. **Construction Supervisor** to contact City of Glendale if additional support is required.

H. **Maintenance Crew** to visually inspect CVWD's collection system while the inspection of the Sewer Interceptor line is completed by the Construction Supervisor.

10. **Senior Engineer** or **Program Specialist** to report SSO's to the California Emergency Management Agency. If further assistance is needed either individual shall contact neighboring agencies or emergency contractors as necessary.

11. **Construction Supervisor and Maintenance Crew** to report to EOC and Operations and Maintenance Manager on status of the sewer system and wait for instructions from the EOC.

12. **Operations and Maintenance Manager** to meet and report to the EOC the condition of the sewer system. EOC to advise Operations and Maintenance Manager on the sewer clean-up priority and direct the Construction Supervisor.

13. **Construction Supervisor** to maintain contact with Operations and Maintenance Manager on status of clean-up.

14. At conclusion of clean-up, Wastewater crews to report back to EOC for further instruction.

15. CVWD to report all SSO incidents per the CVWD protocol.

2. Power Outage at Lift Station

The CVWD's Wastewater Department sequence procedures when a localized power outage at the Lift Station occurs in the District:

1. SCADA system report power failure alarm.
2. Water System Operator informs **Construction Supervisor** and **Operations and Maintenance Manager** on status of Lift Station.
3. **Construction Supervisor** dispatches to Lift Station to assess situation.
4. **Operations and Maintenance Manager** to call Southern California Edison (SCE) to confirm outage and get status of when power to be restored.
5. **Operations and Maintenance Manager** to contact **Electrical/Telemetry Technician** to assist the Construction Supervisor at the Lift Station.
6. **Wastewater Crew** to mobilize Vactor Truck and Emergency Response Trailer and meet **Construction Supervisor** at site.
7. **Wastewater Crew** to inspect the wet well at the Lift Station;
   - A. Check wastewater level in the wet well.
   - B. Check pump float system.
   - C. Check telemetry system.
   - D. If wet well is overflowing:
     1. Set up Vactor truck to pump out wet well
     2. Mitigate any spills observed and prevent as much material from entering drainage channels as possible.
8. **Construction Supervisor** and **Electrical/Telemetry Technician** to assess the electrical equipment for damage or failures.
9. **Construction Supervisor** to report back to **Operations and Maintenance Manager** on status of Lift Station and Operations and Maintenance Manager to report on SCE status.
10. If Power Outage is less than one (1) hour:
    - A. **Wastewater Crew** to stay on site and monitor wet well level.
    - B. **Wastewater Crew** to set up Vactor Truck at upstream manhole as a precaution.
11. If Power Outage continues from 1 hour to 4 hours:
    - A. **Wastewater Crew** to install temporary sewer bypass pump system.
    - B. **Wastewater Crew** to return every hour to monitor wet well levels.
12. If Power Outage continues from 4 hours to 8 hours:
    - A. Inform **Electrical/Telemetry Technician** to bring the 70 kW portable emergency generator to the Lift Station. If no generators are available contact PumpMan, Inc. at (626) 939-0300 for assistance with emergency bypass operations.
    - B. **Construction Supervisor** to coordinate connection of portable emergency generator, transfer switch to bypass power and start up with **Electrical/Telemetry Technician**.
    - C. After pumps are operating, **Wastewater Crew** to remove the temporary sewer bypass pump assembly.
    - D. **Electrical/Telemetry Technician** to confirm telemetry system on-line

E. **Wastewater Crew** to return every hour to monitor wet well levels

13. If Power Outage continues beyond 8 hours:
    A. **Electrical/Telemetry Technician** to monitor portable emergency generator for voltage and fuel.
    B. **Construction Supervisor** to monitor well levels and pumps.
    C. **Electrical/Telemetry Technician** to confirm telemetry system on-line.
    D. **Wastewater Crew** to return every two hours to monitor levels.
14. Electrical Power Restored to Lift Station:
    A. **Operations and Maintenance Manager** calls SCE to confirm power restored to the site.
    B. **Construction Supervisor** to dispatch **Wastewater Crew** and **Electrical/Telemetry Technician**.
    C. **Wastewater Crew** to turn off pumps.
    D. **Electrical/Telemetry Technician** to turn off portable emergency generator.
    E. **Electrical/Telemetry Technician** to remove electrical connection leads & position transfer switch back into normal mode.
    F. **Wastewater Crew** to turn pumps back on.
    G. **Wastewater Crew** to verify working condition of pumps and lift station.
    H. **Electrical/Telemetry Technician** to confirm telemetry system on-line.
    I. **Wastewater Crew** to return in one hour to confirm Lift Station is working properly.
    J. **Construction Supervisor** to document incident with proper authorizes

3. Low Flow Sanitary Sewer Overflow (SSO) – Local Residential Street

The CVWD's Wastewater Department sequence procedures to respond to a low flow SSO on a residential street that occurs in the District:

1. **Customer Service** or **Stand-By Crew Member** notified by customer call or other agency such as Fire Department or Police or observation by CVWD Crews of a SSO.
2. **Construction Supervisor** contacted and is dispatched to location.
3. **Wastewater Crew** is contacted to mobilize Vactor Truck and Emergency Response Trailer to site.
4. **Management Staff** is contact to begin procedures as outlined in *Section 6.2.3* - External Notification.
5. **Construction Supervisor** assesses the situation and determines the best course of action.
6. **Construction Supervisor** contacts City of Glendale if additional manpower and equipment are needed.
7. **Wastewater Crew** begins best management practices:
    A. Prevent wastewater from entering into nearby storm drains or drainage channels.
    B. Correct the cause of the spill (blockage, pump station failure).
    C. Clean-up the overflow site.
    D. Clean-up of the site requires three steps:
        1. Thorough cleaning of site and removal of debris.
        2. Disinfecting of site.
        3. Determination of size of spill (estimated volume of flow & effected area).
8. **Program Specialist** or **Senior Engineer** to report to site and assist **Construction Supervisor** with estimating amount of the spill and documenting spill area for notifications.
9. If SSO enters private property, **Construction Supervisor** and **Senior Engineer** to assess damage to determine initial clean-up efforts to minimize further damage.
10. **Construction Supervisor** to contact Management Staff on potential damage to private property.
11. **Construction Supervisor** and Management Staff to determine level of clean-up.
12. **Construction Supervisor** & **Wastewater Crew** to confirm clean-up and return to Glenwood Plant.

4. High Flow Sanitary Sewer Overflow (SSO) – At Sewer Main Confluences within CVWD's Collection System

The CVWD's Wastewater Department sequence procedures to respond to a high flow SSO at a sewer main confluence that occurs within CVWD's collection system:

1. **Customer Service** or **Stand-By Crew Member** notified by customer call or other agency such as Fire Department or Police or observation by CVWD Crews of a SSO.
2. **Construction Supervisor** contacted and is dispatched to location.
3. **Wastewater Crew** is contacted to mobilize Vactor Truck and Emergency Response Trailer to site.
4. Management Staff is contact to begin procedures as outlined in *Section 6.2.3* - External Notification.
5. **Construction Supervisor** assesses the situation and determines the best course of action.
    A. Prevent wastewater from entering into nearby storm drains or drainage channels by installing BMPS at catch basins.
    B. Install temporary sewer bypass system (if effective) or Utilize Vactor truck to pump and transfer wastewater
    C. Confirm proper resources i.e. additional equipment are available by contacting City of Glendale
6. **Construction Supervisor** to contact the City of Glendale if additional manpower and equipment are needed.
7. **Wastewater Crew** begins best management practices:
    A. Prevent wastewater from entering into nearby storm drains or drainage channels.
    B. Correct the cause of the spill (blockage, pump station failure).
    C. Clean-up the overflow site.
    D. Clean-up of the site requires three steps:
        1. Thorough cleaning of site and removal of debris.
        2. Disinfecting of site.
        3. Determination of size of spill (estimated volume of flow & effected area).
8. **Program Specialist** or **Senior Engineer** to report to site and assist **Construction Supervisor** with estimating amount of the spill and documenting spill area for notifications.
9. If SSO enters private property, **Construction Supervisor** and **Senior Engineer** to assess damage to determine initial clean-up efforts to minimize further damage.
10. **Construction Supervisor** to contact Management Staff on potential damage to private property.
11. **Construction Supervisor** and Management Staff to determine level of clean-up.
12. **Construction Supervisor** & **Wastewater Crew** to confirm clean-up and return to Glenwood Plant.

5. High Flow Sanitary Sewer Overflow (SSO) –On CVWD's Sewer Interceptor

The CVWD's Wastewater Department sequence procedures to respond to a high flow SSO on the Sewer Interceptor that occurs in the City of Glendale:

1. **Customer Service** or **Stand-By Crew Member** notified by a call from a customer, other agency, such as the local Fire Department or Police, or observation by CVWD Crews of a SSO.
2. **Construction Supervisor** contacted and dispatched to location. Begin to mobilize Wastewater Crew for response.
3. **Wastewater Crew** is contacted by Construction Supervisor or Operations and Maintenance Manager. Mobilize Vactor Truck and Emergency Response Trailer to site.
4. **Management Staff** is contact to begin procedures as outlined in *Section 6.2.3* - External Notification.
5. **Operations and Maintenance Manager** to notify City of Glendale, Wastewater Department.
   A. CVWD responding to SSO
   B. Request personnel to meet at location
   C. Request City of Glendale to provide additional support
6. **Construction Supervisor** assesses the situation and determines the best course of action
   A. Prevent wastewater from entering into nearby storm drains or drainage channels by installing BMPS at catch basins.
   B. Install temporary sewer bypass system from CVWD's Sewer main to nearest Glendale Sewer main (if possible).
   C. Utilize Vactor truck to pump and transfer wastewater to Glendale's Sewer.
7. **Wastewater Crew** begins best management practices:
   A. Correct the cause of the spill (blockage, pump station failure).
   B. Clean-up the overflow site.
   C. Clean-up of the site requires three steps:
      1. Thorough cleaning of site and removal of debris.
      2. Disinfecting of site.
      3. Determination of size of spill (estimated volume of flow & effected area).
8. **Senior Engineer** to report to site and assist **Construction Supervisor** with estimating amount of the spill and documenting spill area for notifications.
9. **Program Specialist** to contact local news outlets to inform them of the spill.
10. **Program Specialist** shall begin the process of sampling for water quality as per *Section 6.4.4*.
11. If SSO enters private property, **Construction Supervisor** and **Senior Engineer** to assess damage to determine initial clean-up efforts to minimize further damage.
12. **Construction Supervisor** to contact Management Staff on potential damage to private property.

13. **Construction Supervisor** and **Management Staff** to determine level of clean-up.

14. **Construction Supervisor** & **Wastewater Crew** to confirm clean-up and return to Glenwood Plant.

6. High Flow Sanitary Sewer Overflow (SSO) –At CVWD's Diverter Valve

The CVWD's Wastewater Department sequence procedures to respond to a high flow SSO at CVWD's diverter valve that occurs in the City of Los Angeles:

2. **Customer Service** or **Stand-By Crew Member** notified by customer call or other agency such as Fire Department or Police or observation by CVWD Crews of a SSO.
3. **Construction Supervisor** contacted and is dispatched to location.
4. **Wastewater Crew** is contacted to mobilize Vactor Truck and Emergency Response Trailer to site.
5. Management Staff is contact to begin procedures as outlined in Section 6.1.1i - External Notification.
6. **Construction Supervisor** to notify City of Glendale, Wastewater Department.
   A. CVWD responding to SSO.
   B. Request personnel to meet at location.
   C. Request Glendale to provide additional equipment.
7. **Construction Supervisor** to notify City of Los Angeles and Los Angeles/Glendale Reclamation Plant
   A. CVWD responding to SSO.
   B. Request personnel to meet at location.
   C. Request Los Angeles to provide additional equipment.
8. **Construction Supervisor** assess the situation and determines the best course of action
   A. Prevent wastewater from entering into nearby storm drains or drainage channels by installing BMPS at catch basins.
   B. Install temporary sewer bypass system from CVWD's Sewer main to nearest Glendale or Los Angeles Sewer main (if possible).
   C. Utilize Vactor truck to pump and transfer wastewater to Glendale or Los Angeles.
9. **Wastewater Crew** begins best management practices:
   A. Correct the cause of the spill (blockage, pump station failure).
   B. Clean-up the overflow site.
   C. Clean-up of the site requires three steps:
      1. Thorough cleaning of site and removal of debris.
      2. Disinfecting of site.
      3. Determination of size of spill (estimated volume of flow & effected area).
10. **Program Specialist** or **Senior Engineer** to report to site and assist **Construction Supervisor** with estimating amount of the spill and documenting spill area for notifications.
11. If SSO enters private property, **Construction Supervisor** and **Senior Engineer** to assess damage to determine initial clean-up efforts to minimize further damage.
12. **Construction Supervisor** to contact Management Staff on potential damage to private property.

13. **Construction Supervisor** and Management Staff to determine level of clean-up.

14. **Construction Supervisor** & **Wastewater Crew** to confirm clean-up and return to Glenwood Plant.

APPENDIX 6-D

STANDARD CONSTRUCTION CONTRACT

CRESCENTA VALLEY WATER DISTRICT
2700 Foothill Boulevard
La Crescenta, California 91214
Telephone (818) 248-3825 – FAX (818) 248-1659

Project Title, Project S-XXX

Some of the important terms of this Agreement are printed on Page 2. For your protection make sure that you read and understand all provisions before signing. The terms on Page 2 are incorporated in this document and will constitute a part of the Agreement between the parties when signed.

TO: Authorized Representative
Company Name
Street Address
City, CA Zip Code

DATE: _____

The undersigned Contractor offers to furnish the following:

To provide all work necessary for the completion including providing labor, materials, and equipment for the [insert description of work] per CVWD's Request for Quote dated [insert date], your company's quote dated [insert date].

Contract price: Not to Exceed $[insert contract amount] unless approved by General Manager

Completion date: [insert projected project completion date]

Instructions: Sign and return original. Upon acceptance by the Crescenta Valley Water District, a copy will be signed by its authorized representative and promptly returned to you. Insert below the names of your authorized representatives(s).

Accepted:	Contractor:
Crescenta Valley Water District	[Contractor/Company Name]
By_____	By_____
Title_____	Title _____
Authorized Representative	Authorized Representative

Contractor agrees with Crescenta Valley Water District that:

a) To the fullest extent permitted by law, Contractor will defend, indemnify and hold harmless Crescenta Valley Water District, its directors, officers, employees or authorized volunteers from all claims and demands of all persons arising out of the performance of the work or the furnishing of materials; including but not limited to, claims by the Contractor or Contractor's employees for damages to persons or property except for the sole negligence or willful misconduct or active negligence of Crescenta Valley Water District, its directors, officers, employees, or authorized volunteers.

b) By his/her signature hereunder, Contractor certifies that he/she is aware of the provisions of Section 3700 of the California Labor Code which requires every employer to be insured against liability for workers' compensation or to undertake self-insurance in accordance with the provisions of that code, and he/she will comply with such provisions before commencing the performance of the work of this Agreement. Contractor and sub-contractors will keep workers' compensation insurance for their employees in effect during all work covered by this Agreement and shall file with Crescenta Valley Water District the certificate required by Labor Code Section 3700.

c) Contractor will file with Crescenta Valley Water District before beginning work, certificates of insurance and policy endorsements satisfactory to the Crescenta Valley Water District evidencing general liability coverage, of not less than $1,000,000 per occurrence ($2,000,000 general and products-completed operations aggregate (if used) for bodily injury, personal injury and property damage; auto liability of at least $1,000,000 for bodily injury and property damage each accident limit; workers' compensation (statutory limits) and employer's liability (1,000,000) (if applicable); requiring 30 days (10 days for non-payment of premium) notice of cancellation to Crescenta Valley Water District. Any insurance, self-insurance or other coverage maintained by Crescenta Valley Water District, its directors, officers, employees, or authorized volunteers shall not contribute to it. The general liability coverage shall give Crescenta Valley Water District, its directors, officers, employees, or authorized volunteers insured status using ISO endorsement CG2010, CG2033, or equivalent. Coverage is to be placed with a carrier with an A.M. Best rating of no less than A-:VII, or equivalent, or as otherwise approved by the Crescenta Valley Water District. In the event that the Contractor employs other contractors (sub-contractors) as part of the work covered by this Agreement, it shall be the Contractor's responsibility to require and confirm that each sub-contractor meets the minimum insurance requirements specified above.

d) Contractor shall not accept direction or orders from any person other that the General Manager or persons who are designated as "other authorized representatives."

e) Payment, unless otherwise specified on Page 1, is to be 30 days after acceptance of Crescenta Valley Water District.

f) Permits required by governmental authorities will be obtained by Contractor and at Contractor's expense, and Contractor will comply with local, state and federal regulations and statutes including the Cal/OSHA requirements.

g) Any change in the scope of the work to be done, method of performance, nature of materials or price thereof, or to any other matter materially affecting the performance or nature of the work will not be paid for or accepted unless such change, addition or deletion be approved in advance by Crescenta Valley Water District. Contractor's "authorized representative(s)" has the authority to execute such written change for contractor.

APPENDIX 6-E

SPILL RESPONSE REPORT

Crescenta Valley Water District
Sewer Stoppage Report Details

Map ID #: _____ **Date:** _____

OES #: _____ **Time:** _____

LA County DPH #: _____ **Service Order #:** _____

Service Request should be designated by MO (Main Office) or GW (Glenwood) followed by date and then -01 (in sequential order

Information gathered must be precise for SSO investigation and reporting.

Operator Notified of spill: _____ hrs _____mins_____ sec

Operator arrival time: _____ hrs _____ mins _____ sec

Spill Location: _____

Longitude: _____ deg Latitude: _____ deg

Cause of spill: _____

Private property: Yes ☐ No ☐

Damage: _____

_____

Spill starting point location: _____ Specify: _____

Final spill location: _____ Specify: _____

Property location, storm drain, manhole, etc.

- Is it coming from a manhole? Yes ☐ No ☐
- Is it in or on a private residence? Yes ☐ No ☐
- Is it spilling into a storm drain? Yes ☐ No ☐
-

Spill Volume (gals): _____

How did you estimate spill volume: _____

_____

_____

- Did the spill reach a storm drain? Yes ☐ No ☐
  - If yes, estimate volume (gals): _____

Crescenta Valley Water District
Sewer Stoppage Report Details

- Storm drain location: _____ lat _____long

- Did we recover from the storm drain? Yes ☐ No ☐
  - If yes, estimate volume (gals): _____

- Did we recover sewage discharged to land: Yes ☐ No ☐
  - If yes, estimate volume (gals): _____

Spill response activities: _____

_____

_____

_____

Operators who responded:

Name:_____ Hrs: _____ Name:_____ Hrs: _____

Name:_____ Hrs: _____ Name:_____ Hrs: _____

Name:_____ Hrs: _____ Name:_____ Hrs: _____

Equipment used:

Unit:_____ Hrs: _____ Unit: _____ Hrs:_____

Unit:_____ Hrs: _____ Unit: _____ Hrs:_____

Unit:_____ Hrs: _____ Unit: _____ Hrs:_____

Last Main Cleaning/Inspection: _____

Notes: _____

_____

_____

_____

Operator filling out form: _____

Operator signature: _____ Date: _____

APPENDIX 6-F

WATER QUALITY SAMPLING AND ANALYSIS FOR SSO RESPONSE

Appendix 6-F

SPECIFICATIONS FOR WATER QUALITY SAMPLING AND ANALYSIS FOR SSO RESPONSE

The District will perform sampling and analyses in accordance with the following conditions and requirements included in the WDR issued by the Regional Board:

Receiving Waters

1. Diverted water discharge sampling will be conducted at 100 feet downstream from the point of discharge at the nontidal sites during dredging. The first sampling event will be conducted on the first day of the project (e.g., during the installation of water diversion Best Management Practices [BMP]). At tidal sites, no receiving water sampling will be conducted; instead diverted water/work area outfall sampling will be conducted.
2. Prior to the start of work (e.g., prior to the installation of water diversion BMPs) at each active site, background water samples will be collected at a minimum of 100 feet upstream of the active site. The samples will be representative of typical undisturbed conditions and will not be taken during a rainstorm or subsequent runoff event. In addition, the District may collect background samples on a daily basis a minimum of 100 feet upstream of the active site. Background data generated by analysis of samples collected daily will be valid for discharge occurring on the same day. These samples will be immediately analyzed on site for the following constituents:

Constituents	**Type of Sample**	**Units**
Turbidity	Grab	NTUs
pH	Grab	Not Applicable
Dissolved Oxygen	Grab	mg/l

3. Receiving water samples will be collected at the active sites, at least two samples per day, evenly spaced during the work hours, with the first set of samples collected no earlier than 1 hour after work (e.g., dredging or installation of water diversion BMPs) has commenced each day. The location of each sampling site is 100 feet downstream from the point of diverted water discharge. These samples will be immediately analyzed on site for the following constituents:

Constituents	**Type of Sample**	**Units**
Turbidity	Grab	NTUs
pH	Grab	Not Applicable
Dissolved Oxygen	Grab	mg/l

4. Samples will be taken at least 1 foot below the surface of the water body when possible. Duplicate samples will be collected a minimum of once per week, with one set of samples

analyzed on site and one set of samples sent to a laboratory for analysis of the same constituents analyzed for on site.

5. If the analytical results for constituents analyzed on site show that any grab sample exceeds any receiving water limit, confirmation samples will be taken within 2 hours and every subsequent 2 hours and analyzed for all constituents for which on-site analysis is required. Sampling at this higher frequency will continue until the exceedance has been corrected.
6. If any receiving water limit for a constituent or constituents is exceeded, then the District will implement the following process to address the exceedance:
    a. Immediately implement procedures to identify the source of the exceedance;
    b. Once the source of the exceedance has been identified, immediately implement procedures to correct the source of the exceedance; and
    c. Resample to determine whether the exceedance has been corrected.
7. If any receiving water limit for a constituent or constituents is exceeded for a 12-hour period, then the District will immediately notify the Regional Board by telephone and telefax of the exceedance and how the District is correcting or will correct the exceedance.
8. If any receiving water limit for a constituent or constituents is exceeded for a 24-hour period, then dredging will be terminated until the cause of the violation is found and sampling demonstrates that the exceedance has been corrected or when the District has provided the Regional Board with a corrective action plan, acceptable to the Executive Officer, that provides alternative methods of compliance.
9. For other violations, the District will notify the Regional Board immediately whenever violations are detected at which time dredging activity will be terminated and dredging activity will not resume until the District has provided the Regional Board with a corrective action plan, acceptable to the Executive Officer, which provides alternative methods of compliance.
10. The Regional Board recognizes that even with BMPs and appropriate equipment and methods, turbidity levels may momentarily exceed the limitations defined in the WDR during the initial stage of such activities as (a) culvert invert cleaning for panel placement; (b) streambed preparation for bladder dam placement; (c) initial flow discharge in constructed bypass channels; (d) removal of panels and bladder dams; (e) placement and removal of coffer dams; and (f) installation and removal of corrective action measures. The following describes specific activities and duration of exceedance allowances:

    According to the WDR issued by the Regional Board, at any given site, an exceedance of the turbidity limit during an activity described in 10(a) through 10(d) above, for a duration of not more than four (4) hours, will not be considered a "violation" in the context of enforcement or the need to take corrective action. The District will take all reasonable actions to limit the duration and magnitude of such exceedance events.

    According to the WDR issued by the Regional Board, at any given site, an exceedance of the turbidity limit during an activity described in 10(e) and 10(f) above will not be considered a "violation" in the context of enforcement or the need to take corrective action provided the duration of exceedance is:

Not More Than	**For Channel Widths**
4 hours	Less than 100 feet wide
6 hours	100 to 150 feet wide

8 hours	More than 150 feet wide

The District will take all reasonable actions to limit the duration and magnitude of such exceedance events.

Effluent

1. Effluent sampling will be conducted at any off-site temporary sediment stockpile location on every day that there is a discharge and results known within 24 hours of the sampling. Sampling will be conducted at all storm drains or other points of discharge. These samples will be analyzed for the following constituents:

Constituents	**Type of Sample**	**Units**
Turbidity	Grab	NTUs
pH	Grab	Not Applicable
Dissolved Oxygen	Grab	mg/L
Dissolved Sulfide	Grab	mg/L
Settleable Matter	Grab	ml/L/hr

2. If the analytical results for constituents analyzed show that any grab sample exceeds any effluent limit, confirmation samples will be collected within 24 hours and results known within 24 hours of the sampling.
3. If any effluent limit is exceeded in the confirmation sample(s), then a violation will have occurred and the discharge will be terminated until the cause of the violation is found and corrected. The District will immediately notify the Regional Board by telephone and telefax of the violation and how it is correcting or will correct the violation.

Data Collection Methods

Three types of data collection will be conducted at the sites: standard observations, water quality analyses using field instruments, and sample collection and transport to a certified laboratory for analysis. QA/QC methods for laboratory analyses are common to all sampling activities and are described in Section V.

Standard Observations

The following observations will be recorded on every day of operation on the field reporting form (Appendix A):

1. Receiving Water and Effluent
   a. Floating and suspended materials of waste origin (to include oil, grease, algae, and other macroscopic particulate matter): presence or absence, source, and size of affected area.
   b. Discoloration and turbidity: description of color, source, and size of affected area.
   c. Odor: presence or absence, characterization, source, distance of travel, and wind direction.
   d. Hydrographic condition including: time and height of corrected low and high tides and depth of water columns and sampling depths.

e. Weather condition including: air temperatures, wind direction and velocity, and precipitation.

Field Instruments

Water quality measurements of pH, turbidity, temperature, and dissolved oxygen can be reliably conducted using field instruments. This is a common practice to obtain relatively instantaneous results which can be immediately confirmed and acted on should the results indicate water quality is being compromised by the project operations. Water quality limits for these items based on the WDR are summarized in Table 2. Confirmation of an exceedance will be determined in accordance with Section IV—Specifications for Sampling and Analyses for Receiving Waters. If an exceedance is confirmed, the Site Coordinator will be immediately notified. Standard methods for calibration and operation of the field instruments used for analysis of water quality for these items are referenced in Table 3. Complete descriptions of the procedures are included in Standard Methods for the Examination of Water and Wastewater, 19th edition (1995). The test results will be recorded on the field reporting forms (Appendix A).

APPENDIX 8-A

CAPITAL IMPROVEMENT PROGRAM BUDGET & PROJECTIONS, FY 20/21

TO BE COMPLETED WITH FUTURE WASTEWATER MASTER PLAN

APPENDIX 9-A

SSMP EVALUATION SUMMARY

	2006	2007	2008	2009	2010	2011	2012	2013	2014
Response Time (min)									
Average	30	20	No Spill Events	10	9	10	25	No Spill Events	15
Maximum	35	20	No Spill Events	20	10	10	30	No Spill Events	20
Number of SSO's									
Main Line Failure	2	1	0	2	1	0	1	0	2
Capacity Failure	0	0	0	0	0	0	0	0	0
FOG Related Spill	0	0	0	0	0	0	1	0	0
Private	0	0	0	0	3	1	1	0	0
Total	2	1	0	2	4	1	3	0	0
SSO volume (gals)									
Volume of Spill	0	400	No Spill Events	250	2100	600	2800	No Spill Events	1950
Cleaning and Inspection									
Miles Cleaned	40	16	28	12	26	28	17	34	27
Miles CCTV Inspected	0	12	26	11	4	10	1	3	5

	2015	2016	2017	2018	2019	2020	2021	2022	2023
Response Time (min)									
Average	No Spill Events	12	No Spill Events	No Spill Events	No Spill Events	No Spill Events	No Spill Events		
Maximum	No Spill Events	12	No Spill Events	No Spill Events	No Spill Events	No Spill Events	No Spill Events		
Number of SSO's									
Main Line Failure	0	0	0	0	0	0	0		
Capacity Failure	0	0	0	0	0	0	0		
FOG Related Spill	0	1	0	0	0	0	0		
Private	0	1	0	0	0	0	0		
Total	0	1	0	0	0	0	0		
SSO volume (gals)									
Volume of Spill	No Spill Events	100	No Spill Events	No Spill Events	No Spill Events	No Spill Events	No Spill Events		
Cleaning and Inspection									
Miles Cleaned	25	35	15	21	0	0	20		
Miles CCTV Inspected	5	20	5	15	0	0	3		

APPENDIX 10-A

AUDIT SUMMARY

Crescenta Valley Water District's

SSMP AUDIT - 2012

Once every two years CVWD reviews the effectiveness of the Sewer System Management Plan (SSMP) that is currently in place to access its effectiveness. During this review, updates and changes were made to update and strengthen the document to improve the District's wastewater service and overall spill response performance.

Since the inception of the SSMP, the District has lined approximately 3,800 linear feet of sewer main, lined three (3) manholes, and performed five (5) sewer main spot repairs. In FY 12/13, CVWD plans spot repair of the District's enhanced maintenance areas. As funds become available the District will continue to focus on repairing more mains that are listed as enhanced maintenance areas.

Overall, staff response to emergency events was excellent. Once the District is informed of a spill crews arrive on scene in approximately 15 minutes. More work is being done to notify residents and neighboring agencies of the District's response program. During the Response to a lift station overflow that occurred in the 2012, it was found that more SSMPs and map books needed to be distributed to staff.

The District has maintained an annual lining and maintenance program to fix deficiencies as they are discovered through regular inspection. The Enhanced maintenance area list has been updated and included here. No new monitors have been added to District facilities as of now. Plans to add monitoring equipment and software are included in the annual budget.

The current schedule for cleaning and inspection outlined in the SSMP is adequate. However, due to work place injuries, the sewer crew has recently been short staffed. Once these incidents have been resolved, the sewer crew should be back to full operation, and the schedule for cleaning and inspection returned to normal.

Revision 1: Summary of Changes - 2012

Organization – Titles and contact information were updated for the Wastewater Crew Supervisor and the Associate Engineer. Responsibilities have remained the same since the SSMP's inception.

Legal Authority – The City of Los Angeles and City of La Canada treatment agreements were removed from the appendices. The documents were too lengthy to be included in every SSMP distributed. These agreements can be found in the Engineering Department as well as at the Glenwood Operations Facility.

Operations & Maintenance – All sewer map books were updated and distributed. Cleaning and inspection maps showing current progress by year are located at the Wastewater Supervisors office. The sewer main cleaning and inspection program schedule was changed from once every two years to once every three years. The Enhanced Maintenance Area list was updated.

Design and Construction – Updated design manual in 5-A.

Emergency Response – Since the inception of the SSMP, CVWD has responded to a variety of emergencies. Mudslides after the Station Fire lead to an SSO in 2010 and a lift station failure caused an SSO in 2012. Prevailing wage rate requirements for hiring emergency contractors were added. Staff believes that response to these events was adequate. The emergency response action plans (Appendix 6-C) were updated to reflect better response practices as well as to include response for grease interceptor overflows at food service establishments. Program monitoring information can be found in Appendix 9-A.

Fats, Oils, and Grease (FOG) – See appendix 9-A for the number of FOG related Sewer Spills.

System Evaluation and Capacity Management – While defect coding for CCTV inspection has been implemented, no comprehensive condition and criticality analysis has been performed to date.

Monitoring, Measurement, & Program Modifications – Attached find the updated SSO Spill Ssummary, Appendix 9-A. This appendix also outlines cleaning and inspection total footage for cleaning and inspection for each year.

Crescenta Valley Water District's

SSMP AUDIT - 2014

Once every two years CVWD reviews the effectiveness of the Sewer System Management Plan (SSMP) that is currently in place to access its effectiveness. During this review updates and changes are made to update and strengthen the document in hopes of improving the District's wastewater service and overall spill response performance.

Changes to the State of California's Waste Discharge Requirements (WDR) mandated that water quality sampling and large volume spill reporting guidelines be included in the SSMP. Furthermore, the notification rules for reporting SSO's were changed. All documents within the SSMP have been updated to reflect the regulations in the amended WDR.

Overall, staff response to emergency events remained the same. Once the District is informed of a spill crews arrive on scene in approximately 15 minutes. There were two (2) sewer spill overflows occurring in the system since the last update. The first took place at the intersection of Briggs Ave. and Ocean View Blvd. on February 27, 2014. The second spill took place at 2720 Timberlake Ave. on March 17, 2014. These spills cumulatively resulted in approximately 1950 gallons of wastewater being discharged. Staff responded adequately and had each blockage cleared in less than 40 minutes. Reporting to CIWQS and all other applicable agencies were carried out according to the new Waste Discharge Requirements implemented in September 2013. In each of these incidents, a blue plaster, thought to be a result illegal dumping after refinishing a pool surface, was found to be the cause of the blockage in the line. Staff reviewed Building and Safety permits from the County of Los Angeles in an attempt to determine the source of the plaster. This investigation is still ongoing.

In 2013, CVWD staff cleaned approximately thirty-four (34) miles of sewer main and inspected approximately three (3) miles of main using CVWD's CCTV inspection truck. This includes the cleaning the entire District's enhanced maintenance areas. Otherwise, since 2012, two ring and cover maintenance projects were carried out. CVWD staff also treated over 130 manholes to prevent insects and vermin from establishing themselves in manholes and becoming a public nuisance.

In 2014, upgrades to the telemetry system for the sewer flow monitoring station and diverter valve were updated. In FY 14/15, CVWD plans to line approximately 2,000 linear feet of pipe and perform various spot repairs. As funds become available the District will continue to focus on repairing more mains that are listed as enhanced maintenance areas.

Revision 2: Summary of Changes - 2014

Organization – A new wastewater crew member was added to the organizational chart. Contact information for the new crew member was added as well.

Operations & Maintenance – All sewer map books were updated and distributed. The Enhanced Maintenance Area list was updated.

Emergency Response – Changes to the new Waste Discharge Notification Requirements were included in the SSMP. The three (3) category reporting structure shifted to a four (4) category reporting structure. All emergency contact information was updated. Program monitoring information can be found in Appendix 9-A. Criteria for handling large spills were added as well as information on water quality analysis.

System Evaluation and Capacity Management – Appendix 8-A was added containing the Capital Improvement Program budget for FY14/15 and the five (5) year budget projection.

Monitoring, Measurement, & Program Modifications – Attached find the updated SSO Spill summary, Appendix 9-A. This appendix also outlines cleaning and inspection total footage of cleaning and inspection for each year.

CRESCENTA VALLEY WATER DISTRICT'S
SSMP AUDIT – 2016

In 2016, staff experienced one sewer system overflow. It was a private lateral spill associated with a grease interceptor located on the 2600 block of Foothill Blvd. The spill was small and contained within the parking lot. Response to the spill was under 20 minutes, and staff assisted the property manager with response activities.

Staff performed night time work to clean and inspect CVWDs Interceptor Main. The main was found to be in good condition. Staff successfully completed the cleaning of 35 miles of sewer main in 2016 and 25 miles of sewer main in 2015, and the inspection of 20 miles of sewer main in 2016 and 5 miles of sewer main in 2015.

Revision 3: Summary of Changes - 2016

Organization – Contact information for the new General Manager was added. The organizational chart was updated to include the new General Manager as well as reflect several internal personnel shifts.

Operations & Maintenance – All sewer map books were updated and redistributed. The Enhanced Maintenance Area list was reviewed and found to be sufficient. Adjusted inspection schedule to better reflect CVWD's practices.

Emergency Response – All emergency contact information was updated. Program monitoring information can be found in Appendix 9-A.

System Evaluation and Capacity Management – The section was updated to remove references to CVWD's 5-year capital projects outlay. CVWD has seen a consistent reduction in wastewater flows over the years. No capacity improvements are recommended at this trend continues.

Monitoring, Measurement, & Program Modifications – Attached find the updated SSO Spill Summary, Appendix 9-A. This appendix also outlines cleaning and inspection total footage of cleaning and inspection for each year.

Crescenta Valley Water District's

SSMP AUDIT - 2019

There has been no Server Spill Overflows at CVWD since September 2016. Since the 2016 audit, CVWD has begun employing herbicidal root foam to several areas with root intrusion in 2018. CVWD also purchased a new Vactor truck for cleaning operations to reduce maintenance costs. This removes the requirement for Class B license training for Wastewater personnel.

Staff performed night time work to clean and inspect CVWDs Interceptor Main in 2019. The main was found to be in good condition with minor to moderate root intrusion in several joints. Staff completed root foaming of the area in June of 2019. There have been no ring and cover maintenance projects, sewer lining or manhole vector spraying projects since 2015. Staff successfully completed the cleaning of 15 miles of sewer main in 2017 and 21 miles of sewer main in 2018 and the inspection of 5 miles of sewer main in 2017 and 15 miles of sewer main in 2018.

Revision 3: Summary of Changes - 2019

Organization – Contact information for the new General Manager was added. The organizational chart was updated to include the new General Manager as well as reflect several internal personnel shifts.

Operations & Maintenance – All sewer map books were updated and redistributed. The Enhanced Maintenance Area list was reviewed and found to be sufficient. Added herbicidal root foaming to alternative cleaning methods.

Design and Performance Provisions – Updated Insurance Requirements to reflect new practices. Removed Prevailing Wage requirement from D-jobs section.

Emergency Response – Staff training was updated to reflect new Vactor Truck. All emergency contact information was updated. Program monitoring information can be found in Appendix 9-A.

System Evaluation and Capacity Management – CVWD has seen a consistent reduction in wastewater flows over the years. No capacity improvements are recommended as this trend continues.

Monitoring, Measurement, & Program Modifications – Attached find the updated SSO Spill Summary, Appendix 9-A. This appendix also outlines cleaning and inspection total footage of cleaning and inspection for each year.

Crescenta Valley Water District's

SSMP AUDIT - 2021

Since the last 2019 Audit there have been no Sewer Spill Overflow's at the District. Staff are behind schedule on Department goal of cleaning the entire wastewater collection system on tri-annual basis. The cleaning schedule consists of three phases in which each phase is completed within a year. The previous cleaning cycle ended, and a new cycle began in 2019. Since 2019 Phase 1 is completed Phase 2 is in progress and Phase 3 is projected to be completed in 2023.

The District plans to implement improved record keeping and data management using both excel and GIS to monitor and manage future cleaning efforts and meet scheduled goals more efficiently. The feasibility of cleaning goals may also need to be reevaluated to determine if staffing needs are the result of cleaning goal delays.

The CCTV program has been identified as needing improvement. The existing goal per Operation and Maintenance Program is a 10-year maintenance inspection schedule for CCTV inspection. Since the original SSMP certification in 2009 no comprehensive condition and criticality analysis has been performed and CCTV inspection have been limited selective investigations of known problem areas. Plans exist to begin a comprehensive CCTV analysis in 2022.

Revision 3: Summary of Changes - 2021

Organization –The organizational chart was updated to reflect several internal personnel shifts.

Operations & Maintenance – All sewer map books were updated and redistributed. The Enhanced Maintenance Area list was reviewed and found to be sufficient.

Emergency Response – Updated contact information of key personnel.

System Evaluation and Capacity Management – CVWD has seen a consistent reduction in wastewater flows over the years. No capacity improvements are recommended as this trend continues.

Monitoring, Measurement, & Program Modifications – Attached find the updated SSO Spill Summary, Appendix 9-A. This appendix also outlines cleaning and inspection total footage of cleaning and inspection for each year.

SSMP Audit Revision Summary

Approval Deadline	Revision	Comments
August 2, 2009	SSMP – Adopted by Board of Directors	Adopted – 7/21/2009
August 2, 2011	Section 4: Operations and Maintenance	Maps Updated and Redistributed – 7/29/2011
August 2, 2012	Section 2: Organization Section 3: Legal Authority Section 4: Operations and Maintenance Section 6: Emergency Response Appendix 2-A: Organizational Charts Appendix 5-A: Design and Construction Manual Appendix 6-C: Emergency Response Action Plans Appendix 9-A: SSO summary Appendix 10-A: Audit Summary	Updated 7/15/2012
August 2, 2014	Section 2: Organization Section 4: Operations and Maintenance Section 6: Emergency Response Appendix 2-A & 2-B: Organizational Charts Appendix 9-A: SSO summary Appendix 10-A: Audit Summary	Proposed – 7/18/2014
August 2, 2016	Section 2: Organization Section 4: Operations and Maintenance Section 6: Emergency Response Appendix 2-A & 2-B: Organizational Charts Appendix 9-A: SSO summary Appendix 10-A: Audit Summary	Updated – 12/7/2016
August 2, 2019	Section 2: Organization Section 4: Operations and Maintenance	Updated – 7/23/2019

	Section 5: Design and Performance Revisions Section 6: Emergency Response Appendix 2-A & 2-B: Organizational Charts Appendix 9-A: SSO summary Appendix 10-A: Audit Summary	
August 2, 2021	Section 2: Organization Section 4: Operations and Maintenance Section 6: Emergency Response Appendix 2-A & 2-B: Organizational Charts Appendix 9-A: SSO summary Appendix 10-A: Audit Summary	Updated – 5/30/2023