

CRESCENTA VALLEY WATER DISTRICT

2700 Foothill Boulevard
La Crescenta, California

Agenda for the
Regular Meeting of the Board of Directors
of the Crescenta Valley Water District

to be *held* on Tuesday, July 22, 2025, directly following the Public Hearing

This meeting will be conducted in person at the address listed above. Members of the public may also participate virtually by using a touchtone phone. You may select any of the following phone numbers (there are more than one for increased reliability during this time of increased phone traffic)

(669) 900-6833

(346) 248-7799

(929) 205-6099

(253) 215-8782

(301) 715-8592

(312) 626-6799

Then, enter Access Code: 625 360 3648

Those members of the public who are able to and would like to additionally participate through computer may access the Zoom audio & video conferencing tool available at the following link:

<https://us02web.zoom.us/j/6253603648?omn=83841202979>

If there is a disruption of service, this meeting will continue without remote participation. The remote participation option is provided as a convenience to the public and is not required.

Public comment may be made either by emailing comments ahead of the meeting or by speaking over the phone. Emailed comments will be sent to the Board of Directors prior to the meeting and posted on the District's website. Comments may be sent to customer service, at (818) 248-3925 or customerservice@cvwd.com by 3pm on July 22, 2025.

Any person may make a request for a disability-related modification or accommodation needed for that person to be able to participate in the public meeting by contacting the District by phone or in writing at the above email address. Requests must specify the nature of the disability and the type of accommodation requested. A telephone number or other contact information should be included so that District staff may discuss appropriate arrangements. Persons requesting a disability-related accommodation should make the request with adequate time before the meeting for the District to provide the requested accommodation.

Any written materials distributed to the Board in connection with this agenda will be made available at the same time for public inspection at the District office located at the above address and posted on the District's website.

Call to Order and Determination of Quorum

Pledge of Allegiance

Adoption of Agenda

Public Comments

At this time, the public shall have an opportunity to comment on any non-agenda item relevant to the subject matter jurisdiction of the Board. This opportunity is non-transferable, and speakers are limited to one three-minute (3) comment. Under the provisions of the Brown Act, the Board is prohibited from taking action on items not listed on the agenda, except under certain circumstances.

Foothill Municipal Water District Report

1. Report on activities at Foothill Municipal Water District.

Consent Calendar

2. Consideration and approval of the Minutes of the Regular Board Meeting on July 8, 2025.

Action Calendar

The public shall have an opportunity to comment on any action item as each item is considered by the Board. This opportunity is non-transferable, and speakers are limited to one two-minute (2) comment.

1. **Resolution No. 799 - Adopting the Report for Collection of the Fiscal Year 2025-2026 Capital Charges on the Property Tax Roll and Directing Staff to Take All Actions Necessary for Collection of Such Capital Charges on the Property Tax Roll.**
Consideration and motion to adopt Resolution No. 799, adopting the report for collection of the fiscal year 2025-2026 capital charges on the property tax roll and directing staff to take all actions necessary for collection of such capital charges on the property tax roll.
2. **Request to Award a Contract for PFAS Treatment Evaluation** – Consideration and motion to authorize the General Manager to award a contract for the testing of CVWD's groundwater using RSSCT and recommendation of a PFAS treatment strategy CVWD a cost not to exceed \$210,000, including contingency.
3. **Annual Supervisory Control and Data Acquisition (SCADA) System Support Services** – Consideration and motion to authorize the General Manager to award a contract in the amount of \$83,840 for SCADA Support Services for Fiscal Year 2025/26.
4. **Board Governance Training** – Consideration and possible motion to schedule a Board governance seminar.
5. **Recertification of CVWD's Sewer System Management Plan (SSMP)** – Reconsideration of CVWD's 2025 updated Sewer System Management Plan (SSMP).

6. **Request Authorization to Apply for a Seismic Vulnerability Grant** – Consideration and motion to authorize the General Manager to apply for a grant to determine the seismic vulnerability of all CVWD reservoirs.

Information Items

Written Communications to District/Board of Directors

General Manager's Report

Attorney Report

Reports of Committees

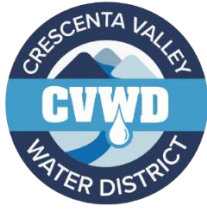
- Community Relations & Emergency Planning Committee
- Employee Relations Committee
- Engineering, Operations, & Technology Committee
- Executive Committee
- Finance & Policy Committee
- Ad Hoc Committee – PFAS
- Ad Hoc Committee – Cyber Security

Directors' Oral Reports – Reports on issues, meetings, or activities attended by Directors

Members' Request for Future Agenda Items

Closed Session

Adjournment



MINUTES OF REGULAR BOARD MEETING OF THE BOARD OF DIRECTORS OF CRESCENTA VALLEY WATER DISTRICT

July 8, 2025

Pursuant to the order of the Board of Directors of the Crescenta Valley Water District, a Regular Meeting was held on July 8, 2025, at 7:00 p.m. at the District office located at 2700 Foothill Blvd., La Crescenta California, and through audio and video conferencing. A call-in number was clearly noted on the meeting Agenda, posted in accordance with the Brown Act, with Jefferey W. Johnson presiding.

At roll call, the following Directors and staff members were present or online:

Directors:

**Jeffery W. Johnson
James D. Bodnar
Kerry D. Erickson
Sharon S. Raghavachary
Jennifer T. Valdez**

Attorney:

Ryan Guiboa

General Manager:

James Lee

**Director of Engineering
and Operations:**

Carla Dillon

**Interim Director of Finance and
Administration:**

Arturo Montes

Staff Members:

**Gabriel Gomez III, Systems Ops & Telemetry Manager
Pam Leddy, Administrative Assistant
Armine Sargsyan, Water Resources & Ext. Affairs Spec.
Adam Sutphin, Senior Management Analyst
Darlene Telles, Operations and Maintenance Manager**

Guests:

**Drew Atwater
Cheryl Clary**

PLEDGE OF ALLEGIANCE

Mr. Montes opened the meeting by leading the Directors and staff in reciting the Pledge of Allegiance.

ADOPTION OF AGENDA

It was moved by Director Raghavachary, seconded by Director Bodnar, and carried by a 5-0 vote that the Agenda for the Regular Board Meeting of July 8, 2025, be adopted.

PUBLIC COMMENTS – None

FOOTHILL MUNICIPAL WATER DISTRICT REPORT – No report.

CONSENT CALENDAR – It was moved by Director Erickson, seconded by Director Valdez, and carried by a 5-0 vote to approve the Minutes of the Regular Board Meeting held on June 10, 2025, Board Compensation Report for June 2025, and to ratify the disbursements for March 2025 and April 2025 which consisted of:

Payment of demands against the Crescenta Valley Water District on or before March 2025, the same having been approved by the General Manager, and heretofore paid, are to be ratified and approved subject to audit, in the aggregate sum of Three-Hundred Fifty-Two Thousand, Four-Hundred Five Dollars and Twenty-Seven Cents (\$352,405.27), which is composed of the individual items set forth herein

Payment of demands against the Crescenta Valley Water District on or before April 2025, the same having been approved by the General Manager, and heretofore paid, are to be ratified and approved subject to audit, in the aggregate sum of Three-Hundred Fifty-Five Thousand, Eighty-Two Dollars and Eighty-Three Cents (\$355, 082.83), which is composed of the individual items set forth herein

ACTION CALENDAR

In-House Pipeline Program – Plan Rollout – Mr. Lee shared that in the Spring of 2024 the District began an In-House Pipeline Program (IHP) to implement pipeline replacement at a lower cost than the traditional design-bid-build project delivery approach. Mr. Lee provided a report of the first six (6) project jobs and their cost savings to the District. Mr. Lee recommended that the Board approve a three-year IHP ramp-up plan and include the authorization of two (2) full-time equivalents for the Operations & Maintenance Department. Mr. Lee also recommended authorization of a full-time Facilities Maintenance position.

Following discussion:

It was moved by Director Bodnar, seconded by Director Raghavachary, and carried by a 5-0 vote to authorize the General Manager to initiate a three-year IHP ramp-up plan subject to an annual review and renewal by the Board, authorize the addition of two full-time equivalents for the Operations & Maintenance Department and transition of one limited-term Facilities Maintenance positions to a full-time equivalent.

OPEB Liability Prefunding – Mr. Montes stated that historically the District offered health coverage as the only Other Post-Employment Benefit (OPEB) and that the high costs of these plans and their associated liability on the District's balance sheet. Mr. Montes said that in 2019 the Board took action to reduce this liability and eliminated OPEB for all new hires and provided a graph showing a 60-year projection of Employer Benefit Payments. Mr. Montes said that to help address future liabilities, the District enrolled in the California Employers' Retiree Benefit Trust (CERBT) which allows California public agencies to pre-

fund OPEB liabilities and earn interest returns on those contributions. Mr. Montes said that the District is financially in a position to make a contribution to the CERBT Fund.

Following discussion:

The Board requested that this item be brought for discussion or action with a proposed formal OPEB Liability Prefunding policy including a funding strategy and possible buyout program as an action item during the month of August 2025.

Strategic Initiatives – Phase 2 – Mr. Lee announced that Bell Burnett & Associates (BB&A) have completed Phase 1 of an agreement to provide strategic initiatives guidance and implementation which spanned 90 days. Mr. Lee provided examples of assistance with immediate objectives and perspective for long-term planning. Mr. Lee provided Phase 2 of a proposed agreement received from BB&A focusing on a Long-Term Energy Management Strategy at a cost not to exceed \$85,000.

Following discussion:

The Board requested that this item be brought for discussion or action with deliverables listed as an action item during the month of August 2025.

Determination of District Representative(s) to Join a Proposed Working Group to Discuss Agency Consolidation – Mr. Lee announced that on June 5, 2025 the governing bodies of the Foothill Municipal Water District (FMWD) sub-agencies met for an open discussion on potential consolidation of agencies. Mr. Lee stated that the FMWD Board has requested that each sub-agency's governing body determine one or two representatives by July 10, 2025, to reconvene as a working group to decide on next steps or a process for further evaluating the potential benefits and challenges of consolidating some or all of the agencies.

Following discussion:

The Board determined that Director Bodnar and Director Raghavachary would join a working group representing CVWD to discuss agency consolidation. Director Valdez will represent the District as an alternate as necessary.

INFORMATION ITEMS – Women in Water San Gabriel Valley – June 26, 2025, Notice of Public Hearing – July 22, 2025, CV Weekly Article “State is Searching for More Water” – dated July 3, 2025, and the 2024 CVWD Annual Water Quality Report.

WRITTEN COMMUNICATIONS TO DISTRICT – None

GENERAL MANAGER – Mr. Sutphin provided highlights of the June 2025 Administration & Finance Report. Ms. Dillon provided highlights of the June 2025 Engineering & Operations Report, Ms. Telles provided highlights of the June 2025 Operations & Maintenance Report, Mr. Gomez provided highlights of the June 2025 System Operations Report. Ms. Dillon presented the June 2025 PFAS update, noting that the PFAS levels remain 20% below notification levels. Ms. Sargsyan provided information on a CalOES grant and three (3) scheduled District tours for the CV Historical Society, Senator Sasha Pérez, and State Assemblymember Nick Schultz. Mr. Lee announced work anniversaries for Carla Dillon, Cesar Velasquez, David Escalera, and Edgar Perez.

ATTORNEY REPORT – Mr. Guiboa reported on CA AB 888 introduced by Senator Calderon to establish the “California Safe Homes Grant Program” to be developed by the department to reduce local and statewide wildfire losses. Mr. Guiboa stated that the Act will fund critical mitigation efforts, including fire-safe roofing, and defensible space within the first five feet of a home.

REPORTS OF COMMITTEES

Community Relations & Emergency Planning Committee – Director Valdez reported that the Committee had not met; however, a meeting will be scheduled as needed.

Employee Relations Committee – Director Bodnar reported that the Committee had not met; however, a meeting will be scheduled as needed.

Engineering, Operations & Technology Committee – Director Valdez reported that the Committee had not met; however, a meeting is scheduled for July 9, 2025.

Executive Committee – Director Johnson reported that the Committee had not met; however, a meeting is scheduled for July 9, 2025.

Finance & Policy Committee – Director Raghavachary reported that the Committee had not met; however, a meeting is scheduled for July 16, 2025.

Ad Hoc PFAS Committee – Director Johnson reported that the Committee had not met; however, a meeting will be scheduled as needed.

Ad Hoc Cyber Security Committee – Director Raghavachary reported that the Committee had not met; however, a meeting will be scheduled as needed.

DIRECTORS’ ORAL REPORTS

Director Bodnar – Director Bodnar reported that he filed CA Form 470 and his last CA Form 700 for Metropolitan Water District upon his retirement.

Director Erickson – No report

Director Johnson – No report

Director Raghavachary – No report

Director Valdez – No report

BOARD MEMBERS REQUESTS FOR FUTURE AGENDA ITEMS – None

CLOSED SESSION – No reportable action

ADJOURNMENT

There being no other business to come before the Board, at 9:58 p.m., the meeting was adjourned.

APPROVED

Jeffery W. Johnson
Board President

Arturo Montes
Board Secretary

CRESCENTA VALLEY WATER DISTRICT

BOARD OF DIRECTORS - STAFF REPORT

Action Item No. 1
July 22, 2025

To: Honorable President and Members of the Board of Directors
From: Arturo Montes – Interim Director of Finance and Administration
Subject: **Resolution No. 799 – Adopting the Report for Collection of the Fiscal Year 2025-2026 Capital Charges on the Property Tax Roll and Directing Staff to Take All Actions Necessary For Collection of Such Capital Charges on the Property Tax Roll.**

ACTION ITEM:

Consideration and motion to adopt Resolution No. 799, adopting the report for collection of the fiscal year 2025-2026 capital charges on the property tax roll and directing staff to take all actions necessary for collection of such capital charges on the property tax roll.

BACKGROUND:

At the April 25, 2023 Board meeting, the Board approved Resolution No. 785 authorizing the collection of capital charges to fund the District's pipeline replacement program and private fire protection services on the property tax roll pursuant to Health and Safety Code Sections 5470 et seq. At the June 27, 2023 Board meeting, the Board authorized the collection of capital charges in the report of charges for the FY 2023/24. The Board then implemented the collection of a lower amount, which resulted in a charge of \$194 for most properties.

To renew the collection of the capital charge for FY 2025/26, an annual report detailing the capital charges for each property must be approved by the Board and filed with the County. This follows a public hearing where there is no majority protest. The Board directed staff to produce the report for FY 2025/26 with the adopted capital charges through Resolution No. 798. The required notice of the public hearing on July 22, 2025, was published on June 26, 2025, and again on July 3, 2025, in the Crescenta Valley Weekly newspaper. Resolution No. 799 approves the report and its filing with the County of Los Angeles.

RECOMMENDATION:

Adopt Resolution No. 799 adopting the report for collection of the fiscal year 2025-2026 capital charges on the property tax roll and directing staff to take all actions necessary for collection of such capital charges on the property tax roll.

Prepared and Submitted by:



Arturo Montes
Interim Director of Finance and Administration

Attachments: Resolution No. 799

RESOLUTION NO. 799

A RESOLUTION OF THE BOARD OF DIRECTORS OF THE CRESCENTA VALLEY WATER DISTRICT ADOPTING THE REPORT FOR COLLECTION OF THE FISCAL YEAR 2025-2026 CAPITAL CHARGES ON THE PROPERTY TAX ROLL AND DIRECTING STAFF TO TAKE ALL ACTIONS NECESSARY FOR COLLECTION OF SUCH CAPITAL CHARGES ON THE PROPERTY TAX ROLL.

WHEREAS, pursuant to California Health and Safety Code section 5473 *et seq.*, Crescenta Valley Water District's ("***District***") Board of Directors ("***Board***") previously adopted a schedule of rates for fees to fund the District's water and sewer systems ("***Fees***"), effective July 1, 2025; and

WHEREAS, in connection with the adoption of the Fees, the District's Board authorized rates to fund certain capital costs associated with the District's water system, as well as rates associated with the capital costs for providing sufficient capacity in the system to serve private fire lines (collectively, the "***Capital Charges***"), and by two-thirds approval of the Board, further authorized collection of such Capital Charges on the property tax roll by the County of Los Angeles ("***County***"); and

WHEREAS, in accordance with section 5473 of the Health and Safety Code, the District caused to be prepared a report identifying each parcel subject to the Capital Charges and the amount to be collected from such parcel for Fiscal Year 2025-2026 ("***Report***"), computed in conformity with the District's adopted Capital Charges, and such Report has been publicly available for inspection by members of the general public; and

WHEREAS, the Secretary of the Board has caused a notice of the filing of the Report to be published and has given notice of the time and place of the public hearing ("***Public Hearing***") to consider such Report, all in accordance with California Health and Safety Code Section 5473.1; and

WHEREAS, at the time stated in the notice, the Board conducted the Public Hearing and heard and considered all objections and protests to the Report, and a majority of the separate property owners subject to the Capital Charges did not submit protests to the adoption of the Report or the collection of such Capital Charges on the property tax roll; and

WHEREAS, the District Board now wishes to take all actions necessary to collect the Capital Charges for Fiscal Year 2025-2026 on the property tax roll in accordance with the amounts set forth in the Report on the identified parcels set forth therein and located within the District.

NOW, THEREFORE, THE BOARD OF DIRECTORS OF CRESCENTA VALLEY WATER DISTRICT RESOLVES AS FOLLOWS:

1. The Board hereby finds and determines that the Recitals are true and correct and are incorporated herein.
2. The Board hereby determines that the Capital Charges authorized for Fiscal Year 2025-2026 and as set forth in the Report are true and correct.

3. The Board hereby finds that protests to the Report were not made by the owners of a majority of separate parcels of property described in the Report, therefore the Board hereby adopts the Report as filed, and further overrules any and all objections to said Report.

4. The Capital Charges shall constitute a lien against the parcel or parcels of land described in the Report in accordance with California Health and Safety Code sections 5473.5 *et seq.*

5. On or before the 10th day of August, 2025, the General Manager, or thier authorized designee, is hereby directed to file a copy of the Report with the Los Angeles County Auditor, together with a statement endorsed thereon over thier signature that the Report has been adopted by the Board and the County Auditor shall enter the amounts of the Capital Charges and any delinquencies set forth in the Report against the respective lots or parcels of land as they appear on the current assessment roll. Thereafter, the Capital Charges shall be collected on the tax bills for the taxable parcels in the District identified in the Report along with the ordinary ad valorem property taxes to be levied on and collected from the owners of parcels.

6. The Board hereby authorizes the General Manager, or thier designee, to take all actions necessary to ensure collection of the Capital Charges on the tax roll, including entering into any agreement required by the County relating thereto.

PASSED, APPROVED, and ADOPTED at a Regular Meeting of the Board of Directors of the Crescenta Valley Water District held on July 22, 2025. Resolution No. 799 was adopted by the following vote:

AYES: _____

NOES: _____

ABSTAIN: _____

ABSENT: _____

ATTEST:

**President, Board of Directors
Crescenta Valley Water District**

Secretary of the Board of Directors

STATE OF CALIFORNIA)
)
COUNTY OF LOS ANGELES) ss.

**I, Arturo Montes, Secretary to the Board of the Crescenta Valley Water District, DO
HEREBY CERTIFY that the foregoing is a full, true and correct copy of Resolution No. 799
of the Board of Directors of Crescenta Valley Water District adopted at a Regular Meeting
held on July 22, 2025, and that the same has not been amended or repealed.**

**Secretary of the Board of Directors
Crescenta Valley Water District**

DATED: July 22, 2025

(S E A L)

CRESCENTA VALLEY WATER DISTRICT

BOARD OF DIRECTORS - STAFF REPORT

Action Item No. 2
July 22, 2025

To: Honorable President and Members of the Board of Directors
From: Carla Dillon, P.E. – Director of Engineering and Operations
Subject: Request to Award a Contract for PFAS Treatment Evaluation

AGENDA ITEM:

Consideration and motion to authorize the General Manager to award a contract for the testing of CVWD's groundwater using RSSCT and recommendation of a PFAS treatment strategy for CVWD at a cost not to exceed \$210,000, including contingency.

BACKGROUND:

With the detection of per- and polyfluoroalkyl substances (PFAS) in several CVWD groundwater wells, the District has been blending groundwater with imported water to dilute the water delivered to customers to a level below the State notification levels (NLs) and response levels and the Federal (2031 compliance date) maximum contaminant levels (MCLs). In addition, the District has targeted an operational level 20% below the most stringent level to include a "factor of safety". The District also blends groundwater to reduce nitrates, which are present in the Verdugo Basin groundwater.

While a pilot test at Well 2 was going to be conducted using granular activated carbon (GAC), the existing equipment was not easily adaptable for this use, the results may not have been sufficient for permitting with DDW, and a GAC system would still have a significant discharge to the sewer, which would add to on-going operational expenses. For these reasons, staff recommends pivoting from the previous plan.

DISCUSSION:

Providing treatment of groundwater would reduce reliance on imported water, which is currently (~\$ 2,122/AF) and provide higher quality water for customers. Due to the distributed well field, number of pressure zones, and configuration of the treatment and distribution system, the support of an experienced consultant is sought. The consultant will provide lab-scale testing in an industry-accepted manner through Rapid Small-Scale Column Testing (RSSCT). This is a common approach that is recognized by the Division of Drinking Water (DDW) in the permitting of systems for full scale treatment. Utilizing an accepted approach will streamline the permitting process.

In the process of identifying options to expeditiously implement PFAS treatment, CVWD staff reached out to multiple contractors/consultants. The consultant, CDM Smith (CDM), has recent and relevant experience in PFAS treatment in California, including with Anaheim, Garden Grove, East Orange County, and San Jose. They have acquired industry knowledge in effective ion exchange (IX) and GAC media. In addition, CDM has pre-purchased vessels in anticipation of the regional demand. CVWD staff has also identified a vendor that has small vessels readily available if wellhead treatment is determined to be a better strategy than centralized treatment.

The elements of this contract will include:

1. Review of CVWD Data: CDM will review water quality data and well production for the past five years. They will also review the system hydraulics.
2. PFAS Bench-Scale Testing: This step includes sample collection, shipping samples, RSSCT testing, analysis, and reporting. The PFAS levels will be spiked in the lab to expedite break-through thresholds in the testing.
3. Treatment Alternatives: With the results from the RSSCT and knowledge of the CVWD system, a Technical Memo will be provided recommending up to three alternatives with concept-level schematics and cost estimates.

While the Special Needs claim for the BASF/Tyco settlements were initially due in May 2025, the deadline has been extended to August 21, 2025, which would allow CVWD to incur these costs now and add these to the District's claims with Tyco, and BASF.

This item was presented to the PFAS Ad Hoc Committee, and there was consensus to present this to the full Board for consideration.

RECOMMENDATION:

Authorize the General Manager to award a contract for the testing of CVWD's groundwater using RSSCT and recommendation of a PFAS treatment strategy for CVWD at a cost not to exceed \$210,000, including contingency.

FUNDING AVAILABILITY:

This project was not budgeted for FY 25/26. It is anticipated that the District will receive sufficient funds from the 3M/Dupont settlement during the current fiscal year that would be applied toward this project.

Prepared by:



Carla Dillon
Director of Engineering & Operations

Attachments: CDM Smith Proposal



July 16, 2025

Carla Dillon, P.E.
Director of Engineering & Operations
Crescenta Valley Water District
2700 Foothill Blvd.
La Crescenta, CA 91214

Subject: **Proposal for PFAS Treatment Techniques Evaluation**

Dear Ms. Dillon,

Elevated levels of per- and polyfluoroalkyl substances (PFAS) have been detected in multiple groundwater wells that make up the water supply for Crescenta Valley Water District (CVWD). In response to your request, we would like to present our proposal for examining CVWD's water quality, conducting bench-scale testing and evaluating alternatives and making recommendations for the treatment of PFAS.

CDM Smith has been a leader in PFAS evaluation and treatment, performing over 70 industry-leading research and development projects per year. We have a tremendous amount of experience conducting pilot studies nationwide on both surface and groundwater, developing alternative treatment schemes to identify the most cost effective and efficient treatment systems, and providing full-scale design to multiple facilities across the country.

Specifically in California, CDM Smith's recent PFAS experience includes: the **Anaheim Groundwater Treatment Plants (GWTP) Project – Phases A & B, Garden Grove PFAS Facilities, and East Orange County PFAS Treatment System Design** (project description and references are available upon request). These projects all demonstrate our recent and relevant experience piloting, designing, building, and operating PFAS and water treatment facilities. In addition to our experience at treatment plants, our team has also conducted several forward-thinking research and development projects at our in-house Bellevue Research and Testing Laboratory.

Project Team

We are proposing the following team (Figure 1) to assist CVWD with this effort. Resumes for key personnel are included in Appendix A.

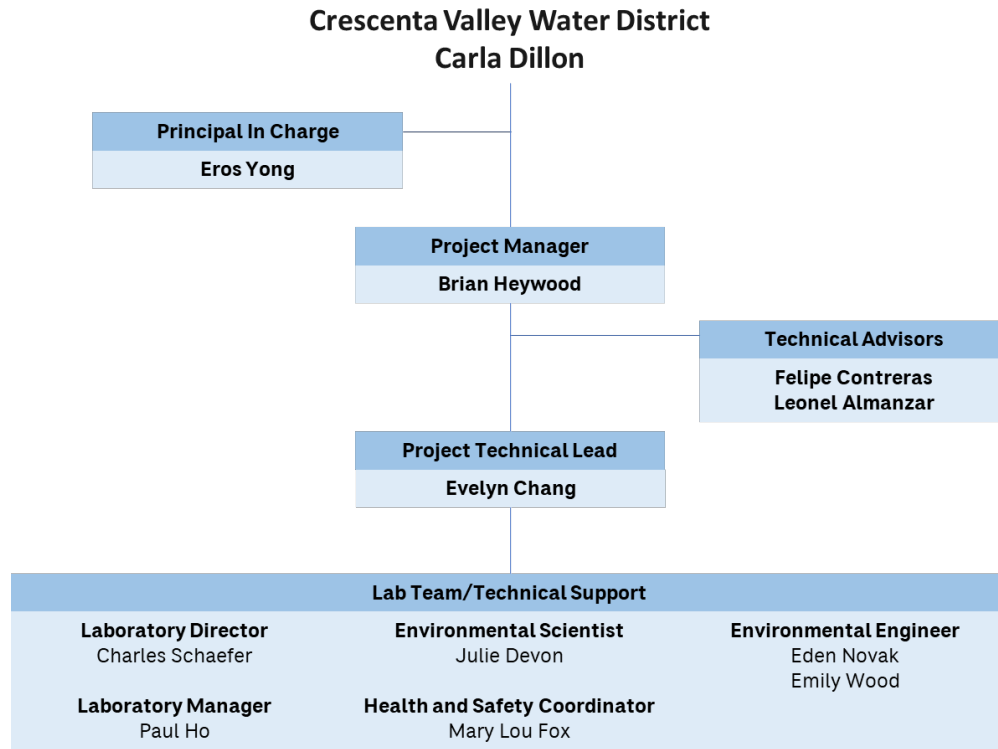


Figure 1. Proposed CDM Smith Team

Scope of Work/Project Approach

Our approach includes a comprehensive analysis of current water quality data, exploring innovative treatment options, and ensuring compliance with all relevant regulations. We will also conduct rigorous testing and validation to confirm the effectiveness of proposed treatments. The ultimate goal is to deliver a viable and cost-effective plan for full-scale PFAS treatment implementation that guarantees safe and clean water for your community. Throughout the project, we will maintain open and transparent communication to ensure all stakeholders are informed of progress and developments.

Task 1 – Review of Existing System

Task 1.1 – Review of Wells' Water Quality

- CDM Smith will assess the historic water quality of CVWD's wells, including the presence and concentrations of PFAS and other contaminants such as Nitrates, TSS, turbidity, hardness, alkalinity, iron, manganese, sulfate, and TDS. To have a good understanding of the wells' historical data, 5 years of data would be ideal. A desktop evaluation of the existing treatment methodologies and equipment will also be included in this review.
- Following the raw water quality review, CDM Smith will review, with the CVWD, the existing treatment at each of the five zones in the system: Mills WTP (Wells 1, 5, 7 and 9), Glenwood WTP

(Wells 8, 10, 12, 14 and 16), Well 2, Well 11 and Pachall/Briggs. This effort will narrow the alternative selection for PFAS treatment along with specific site constraints such as permitting and space limitations at each location.

Task 1.2 – Review of Well Production Data and System Hydraulics

- CDM Smith will analyze well production information including seasonal operation, supply and demand of the water system to ensure the proposed treatment systems can meet peak demand. An overall system analysis will be completed to establish the supply demand gaps under the current system topology. A minimum of 5 years of monthly well production and imported water data will be necessary to evaluate the entire system supply and demand.
- CDM Smith will review the hydraulics of the overall system to understand how the connectivity of the zones and imported water operate. This will be important to evaluate potential blending scenarios.
- At the end of Task 1, CDM Smith will schedule a meeting and present the assessment, and recommend alternatives for PFAS treatment. The recommended location of Rapid Small Scale Column Testing (RSSCT) and approach will be presented during this meeting.

Task 2 – PFAS Bench-Scale Testing Protocol

This task will include the following subtasks. Please refer to the attached memorandum for details regarding the proposed bench-scale testing program.

Task 2.1 – Health and Safety Plan/Coordination Meeting/Lab Subcontracting

Task 2.2 – Sampling Kit Coordination

Task 2.3 – Treatment Media Particle Size Reduction, Site Water Filtration Pre-treatment & Baseline Water Quality Characterization

Task 2.4 – RSSCT & Sample Disposal

Task 2.5 – Bench-Scale Testing Analysis & Reporting

Task 3 – PFAS Treatment Alternatives Analysis

After completing the RSSCT, CDM Smith will schedule a second meeting with CVWD to present the results of the RSSCT.

After the meeting, a draft technical memorandum (TM) summarizing the work in Tasks 1 and 2 will be prepared and presented to the CVWD for review. This draft TM will include the following sections:

- Background: Summary of water quality, quantity, hydraulics, imported water
- Summary of RSSCT Results and treatability

- Recommendations:
 - Media recommendations and treatment strategies
 - Concept Level Schematic: Develop a schematic for the proposed PFAS treatment system
 - Concept Level Construction Cost: Provide a rough order of magnitude estimate of the construction costs for the proposed treatment systems
- Appendices:
 - RSSCT Detailed Results

It is anticipated that the maximum number of pages for the technical memorandum will be 10 pages (not including schematics and RSSCT Report).

Task 4 – Project Management

Under this task, CDM Smith will perform the following activities:

- Kickoff meeting (one-hour virtual meeting)
- Attend monthly project update meetings (1/2-hour virtual meetings)
- Monthly invoicing and budget/schedule tracking

Deliverables

- **Technical Memorandum:** A draft technical memorandum, including presentation of findings and recommendations, including recommended media(s) and holistic treatment strategies, will be provided to CVWD for review. A final technical memorandum incorporating CVWD's comments will be submitted.

Assumptions

- CVWD will provide CDM Smith water quality results for all PFAS constituents, Nitrates, TSS, turbidity, hardness, alkalinity, iron, manganese, sulfate, and TDS obtained during the last five (5) years, and is responsible for validating the data that is provided.
- CDM Smith will not conduct water sampling of CVWD wells or other sites that are not part of the RSSCT task.
- CDM Smith will be provided with complete system topology information and system operation; including monthly well production, imported water volumes, wells and treatment plant pumping capacities, and seasonal operation for the last five (5) years.
- CDM Smith will not develop a hydraulic model of the system.

- CVWD will provide CDM Smith with a clear understanding of the different system zones including monthly water consumption, water produced, and water imported for each system zones
- See attached memorandum for additional assumptions specific to the bench-scale testing.
- CVWD will provide a single set of consolidated comments on the draft technical memorandum.

Project Schedule

The proposed project schedule is shown in Table 1. This schedule includes the following key milestones:

Table 1. Proposed Schedule

Milestone	Purpose	Schedule (from NTP)
Kickoff Meeting (Virtual)	Confirm objectives, approach, scope, schedule and budget	1 week
Conduct Well Water Quality and Quantity Assessment	Understand the system operational conditions, historic water characteristics, and supply demand gap including seasonal variations	3 weeks
Meeting #1 (Virtual)	Present overall all system understanding, PFAS treatment alternatives and RSSCT location selection	3 weeks
Conduct RSSCT	Coordinate sampling and raw water shipping, prepare columns, and conduct testing	19 weeks
Meeting #2 (Virtual)	Present preliminary results related to media performance during RSSCT	20 weeks
Submit Draft Technical Memorandum		22 weeks
Meeting # 3 (Virtual)	Present RSSCT Result and Draft TM, collect initial comments	22 weeks
Draft Technical Memorandum Review Comments	Receive comments from CVWD on the draft TM	24 weeks
Final technical Memorandum	Incorporate feedback and comments from CVWD on the draft TM; submit final TM	26 weeks

Budget

The total cost for this project is \$189,567. Please see attached fee proposal for additional information. The billing rate schedule is provided in Table 2.



Carla Dillon, P.E.
July 16, 2025
Page 6

Table 2. Billing Rate Schedule

Category	Rate* (\$/hour)
Engineer, Scientist, Planner	
Grade 1	\$140
Grade 2	\$155
Grade 3	\$180
Grade 4	\$190
Grade 5	\$200
Grade 6	\$210
Grade 7	\$250
Associate	\$290
Vice-President, Sr. Vice President	\$320
Principal-in-Charge, Client Service Leader	\$330
Support Services	
Administrative Manager	\$139
Administrative Assistant/Word Processor	\$118
Office Clerk	\$98
Financial Manager	\$149
Contract Administrator	\$129
Financial Assistant	\$113
Miscellaneous Expense	
Auto Mileage	Current IRS Rate
Outside Services (markup)	Cost + 5%
Materials & Other (markup)	Cost + 5%

* Costs will increase 3% after each year

Conclusion

We look forward to the opportunity to collaborate with you on this important project and are confident that our efforts will result in a successful and impactful outcome for CVWD. We are committed to providing CVWD with a thorough and professional evaluation of PFAS treatment techniques. Our team is ready to begin work immediately upon approval of this proposal.



Carla Dillon, P.E.

July 16, 2025

Page 7

Please feel free to contact me at 949-930-4066 or yongey@cdmsmith.com if you have any questions or require further information.

Thank you for considering our proposal.

Sincerely,

A handwritten signature in black ink, appearing to read "Eros Yong", with a stylized flourish at the end.

Eros Yong, P.E., PMP, BCEE
Associate | Client Service Leader
CDM Smith Inc.

Attachments:

- Crescenta Valley, California PFAS Bench-Scale Testing Protocol Memo
- Fee Proposal
- Resumes





Memorandum

To: Carla Dillon, P.E. Director of Engineering & Operations, Crescenta Valley Water District

*From: Charles Schaefer – CDM Smith Research and Testing Laboratory Director
Paul Ho – CDM Smith Research and Testing Laboratory Manager
Eros Yong, P.E., BCEE, PMP – CDM Smith Principal-In-Charge*

Date: July 16, 2025

Subject: Crescenta Valley, California PFAS Bench-Scale Testing Protocol

1.0 Background

This technical memorandum summarizes the bench-scale treatability testing proposed to evaluate removal of per- and polyfluoroalkyl acids (PFAS) from the groundwater in Crescenta Valley, California (herein referred to as the Site). Granular activated carbon (GAC), anion exchange resin (AER)/novel sorbents (NS) are the two technologies commonly employed to treat water containing PFAS such as PFOS and PFOA ^{1,2}. Currently, there are several vendors offering GAC and AER/NS resins for PFAS treatment for drinking water. The effectiveness of GAC versus AER/NS, as well as the effectiveness of a particular GAC or AER/NS, may be highly dependent upon several factors including:

- Site-specific water quality and geochemistry (e.g., pH, anions, cations, dissolved organic matter);
- The specific PFAS present (e.g., long-chain hydrophobic compounds versus short-chain hydrophilic compounds); and
- The presence of treatment residuals or co-contaminants in the water (e.g., chlorine, nitrate, sulfate).

Due to these dependencies, as well as uncertainties related to how all these factors collectively impact treatment effectiveness and longevity, bench-scale testing is recommended to determine the optimal treatment approach for a given water stream. It is important to note that PFAS treatment, even with GAC and AER/NS, is not a completely mature and understood technology. There are many unknowns that currently prohibit accurate prediction of treatment effectiveness; these are active areas of

¹ Woodard, S.; Berry, J.; Newman, B. Ion exchange resin for PFAS removal and pilot test comparison to GAC. *Remediation* **2017**, 27, 19-27.

² Zaggia, A.; Conte, L.; Falletti, L.; Fant, M.; Chiorboli, A. Use of strong anion exchange resins for the removal of perfluoroalkylated substances from contaminated drinking water in batch and continuous pilot plants. *Water Res.* **2016**, 91, 137–146

research in both academia and industry. As a result, bench-scale testing serves as the most appropriate tool to aid in selecting and designing a PFAS mitigation system.

CDM Smith recognizes that the regulatory status for PFAS remains in a state of flux, and that both the specific PFAS that are regulated (or proposed for regulation) in California as well as the required treatment levels may quickly change based upon ongoing research and studies. In addition, it is our experience that PFAS treatment goals often are driven by various stakeholders. Thus, for the proposed bench scale testing described below, treatment will be evaluated for all the PFAS present in Site water.

2.0 Proposed Bench-Scale Testing Program

2.1 Purpose

Bench-scale testing is proposed to verify the effectiveness of commercially-available GAC and AER/NS products with respect to PFAS removal, and to serve as a design basis for selecting and sizing the treatment system. Groundwaters collected at the Site location, where the future PFAS treatment system will be implemented, will be used for bench-scale testing; the water collection process is described in more detail in **Section 2.2**. The overall objective of the proposed bench-scale treatability study is to assess the removal of each of the PFAS present in the Site water (initial testing of the water will be performed to determine what PFAS may be present) as a function of empty bed volumes (EBVs) for the selected GAC and AER/NS media.

2.2 Water Collection and Shipment

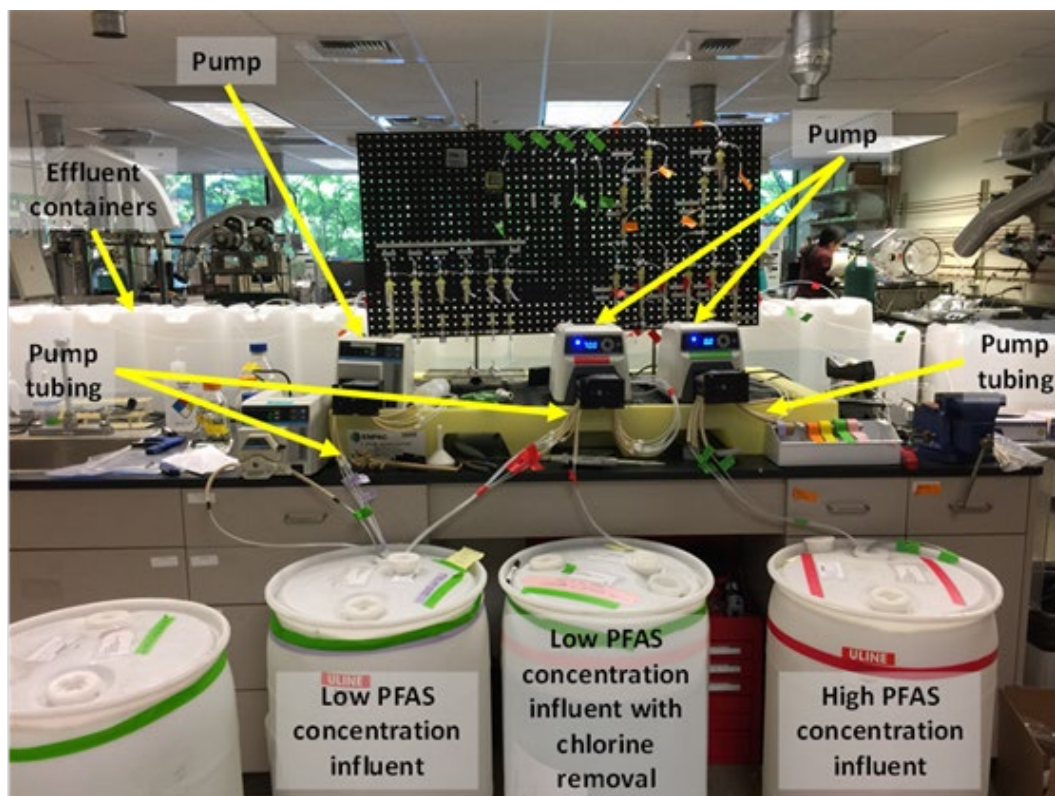
Groundwater from the Site that is representative of Site conditions will be collected for bench-scale testing. Approximately 450 gallons of water will be required for the proposed testing. Water should be shipped in containers that are no larger than 35 gallons each and do not contain any Teflon; 30-gallon high-density polyethylene (HDPE) barrels are recommended (<https://www.uline.com/Product/Detail/S-11860/Drums/Plastic-Drum-with-Lid-30-Gallon-Open-Top-Blue> or equivalent) . All containers should be rinsed with deionized or distilled water prior to use. CDM Smith will provide guidance on the water collection and shipment procedures.

During collection of the water for bench-scale testing, one sample will be collected at the Site and sent directly to a contracted commercial laboratory to verify the nature and extent of PFAS contamination in Site water (the “full suite” of target PFAS compounds should be analyzed in this sample). The PFAS concentrations detected in this particular water sample will serve as the basis for designing the target PFAS spike concentration; it is anticipated that the collected water sample will be spiked to approximately 3-5 times the concentrations detected in Site water. Field measurements of pH, alkalinity, hardness, and residual chlorine will be collected during sample collection. Upon completion of the water collection process, the collected water will be shipped to CDM Smith’s Research & Testing Laboratory (RTL) located in Bellevue, Washington. This water will be used for the bench-scale column testing described in the following section. Prior to initiating column testing in the laboratory, collected water will be analyzed for a variety of basic water quality parameters including anions, alkalinity, TOC, DOC, residual chlorine, and pH using existing analytical instruments at the RTL.

2.3 Bench-Scale Column Testing

Bench-scale column testing will be performed to evaluate PFAS treatment using two commercially available GAC products (i.e. Calgon F400AR, NORIT Hydrodarco 4000, ARQ 1240) and two commercially available AER/NS products (i.e. Calgon CalRes 2301, AmberLite PSR2+, Sorbenta, or Fluoro-Sorb 200). These treatment media were selected based on available pilot testing data and based on CDM Smith's professional knowledge from previous bench tests.

The testing apparatus and methodology will be similar to that previously employed by CDM Smith for other systems³. A picture of a previous experimental system for PFAS treatment performed by CDM Smith is provided in **Figure 1**. If the site water in the sample barrels contains a significant amount of fine particles, pre-treatment using a 5 or 10 micron bag filter may be required (and will be conducted by CDM Smith). Due to the relatively low PFAS levels expected in the collected water, the water sample will be spiked with the PFAS compounds detected in the raw groundwater to a factor of approximately 3-5 to facilitate treatment assessment. If the pH of the waters increases by more than 0.5 SU as a result of CO₂ loss during sample transit, CO₂ sparging will be performed to maintain a pH representative of field conditions.



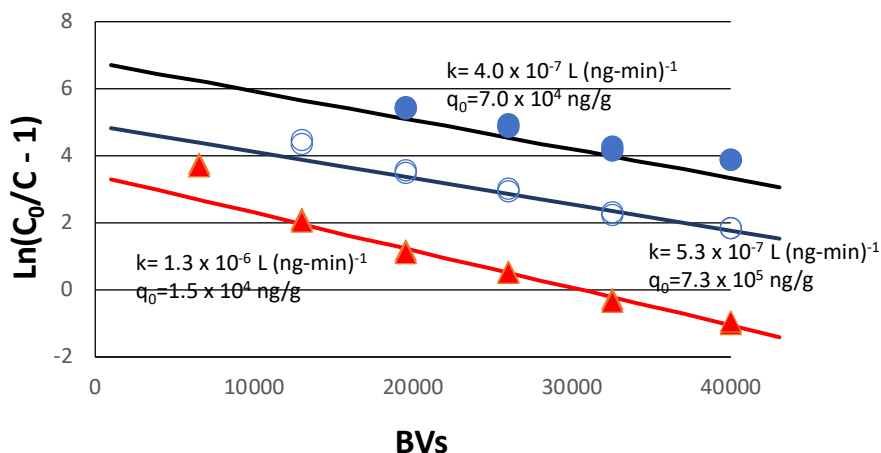
³Schaefer, et al. Assessing Rapid Small-Scale Column Tests for Treatment of Perfluoroalkyl Acids by Anion Exchange Resin. *Industrial & Engineering Chemistry Research* 2019. DOI: 10.1021/acs.iecr.9b00858

Figure 1. Previous CDM Smith experimental system used to assess PFAS treatment using GAC and AER. The small-scale columns are mounted on the board behind the pumps.

The experimental approach that will be employed to test PFAS treatment by GAC and AER/NS is rapid small-scale column tests (RSSCTs), where the sorptive media are ground to reduce the particle size, thereby enhancing mass transfer and allowing shorter empty bed contact times (EBCTs) to shorten the duration of the bench-scale study. RSSCTs have been widely applied for testing the removal of trace organic contaminants by GAC using small-scale columns operated at low EBCTs. The RSSCTs, assuming constant diffusivity and negligible external mass transfer, are scaled to the GAC particle size using the following relationship⁴ :

$$\frac{EBCT_{SC}}{EBCT_{FS}} = \left(\frac{d_{SC}}{d_{FS}} \right)^2 \quad \text{Equation 1.}$$

where d refers to the GAC diameter, SC refers to the small-scale column, and FS refers to the full-scale system. This scaling will be applied to both the GAC and AER/NS. Scaling also will include a scaling of the sorption capacity to the square root of the particle radius, as described in detail in our recent study on PFAS uptake by AER/NS using the RSSCT approach³. Based on recent work conducted by CDM Smith, grinding has also been found to be appropriate for AER/NS and can be scaled to the un-ground AER/NS. **Figure 2** shows how well results from a recent experiment correlated with the Thomas model for predicting adsorption rates for PFAS in AERs. The vendor-recommended EBCTs for PFAS treatment via GAC and AER/NS are 10 minutes and 3 minutes, respectively. Assuming grinding is performed to attain a 3.5-fold reduction in particle size for GAC and AER/NS, the EBCTs used in the RSSCTs will be 0.8 and 0.25 minutes, respectively. Actual particle sizes will be determined (via sieve analysis) prior to column construction; EBCTs will be adjusted accordingly.



⁴ Crittenden, J.C. et al. Predicting GAC performance with rapid small-scale column tests. *Journal AWWA* **1991**, 77-87.

Figure 2. PFAS removal in ground AER columns. The solid lines represent the Thomas model for predicting adsorption in AER, where k and q_0 are scaled from the un-ground AER experiments as r^{-2} and $r^{-0.5}$, respectively⁴. BVs=bed volumes. C_0 = influent concentration. ▲ = PFBA, ○ = PFPeA, ● = PFHxA.

Glass columns (as manufactured by Econo-Column®) measuring 0.7 centimeter (cm) in diameter and 10 cm in length will be used to conduct the bench scale tests. All columns and column materials will be pre-rinsed with methanol and deionized water prior to use. Plastic endcaps and fittings will be placed on either end of the column. Sorbent materials (GAC or AER/NS) will be sandwiched between glass wool and/or glass beads to limit end effects and prevent particle migration. The treatment media bed length will be approximately 3 cm. The column apparatus is shown in **Figure 3**.

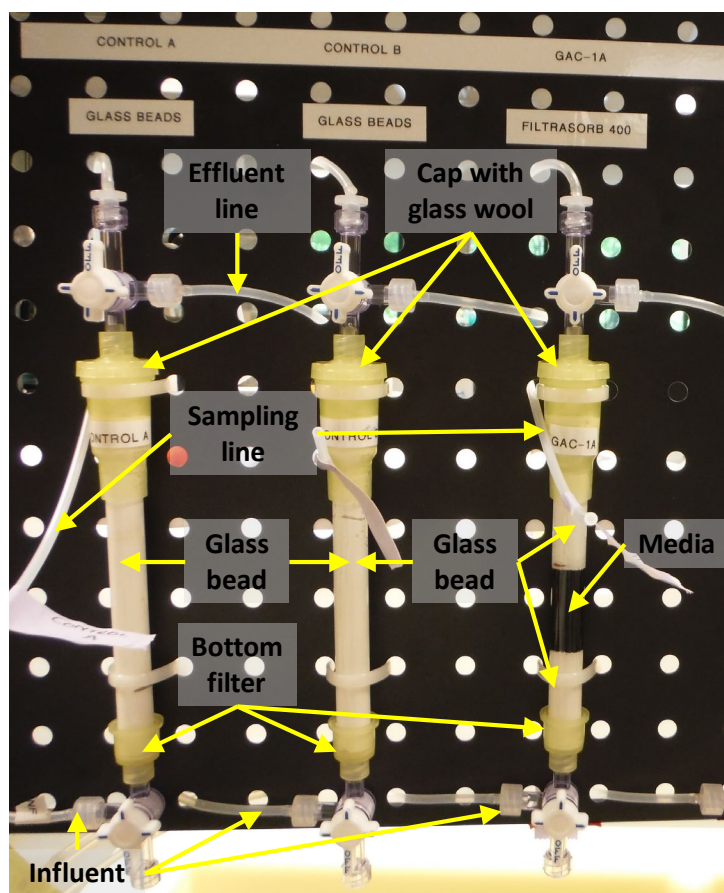


Figure 3. Column apparatus. The two columns on the left are control columns (packed with glass beads only), while the column on the right contains GAC.

With each treatment condition prepared in duplicate, a total of 10 columns will be set up as part of this proposed bench-scale study. After packing all the columns (with glass beads and ground GAC/AER/NS materials that have been rinsed with water to remove fines), the columns will be

flushed (upwards flow) with several bed volumes of deionized water. This process will limit entrapped gas space within the columns. After this flushing step, and after confirming sorbent bed heights within the columns, the PFAS-spiked Site groundwater will be pumped into the column at a rate of 1.4 and 4.7 cm³/min for the GAC and AER columns, respectively. Water will be pumped upwards through the columns using a peristaltic pump and tubing to distribute flow into each column. Column effluents will be collected in containers to facilitate sample collection and to confirm flow rates through the columns. A total of 50,000 and 150,000 EBVs are targeted for GAC and AER columns, respectively. The RSSCT experimental design is shown below in **Table 1**.

Table 1. Experimental Design

Parameter	Control-A & B	GAC-1A & 1B	GAC-2A & 2B	AER-1A & 1B	AER-2A & 2B	Unit
	Glass beads	Calgon Filtrasorb® F400AR/NORIT Hydrodarco 4000	ARQ 1240	Calgon CalRes 2301/AmberLite PSR2+	Sorbenta/ Fluoro-Sorb 200	
Column inner diameter	0.7	0.7	0.7	0.7	0.7	cm
GAC/AER bed length	3	3	3	3	3	cm
Empty bed volume	1.2	1.2	1.2	1.2	1.2	cm ³
Particle reduction		3.5	3.5	3.5	3.5	folds
Vendor-recommended EBCTs	-	10	10	3	3	mins
Theoretical EBCTs to use	-	0.82	0.82	0.24	0.24	mins
Design flow rate	1.4	1.4	1.4	4.7	4.7	cm ³ /min
Target total bed volumes	100,000	50,000	100,000	150,000	150,000	EBVs
Test duration	57	28	57	26	26	Days

Column flow rates will be routinely monitored to ensure that the target flow rates are maintained. All PFAS analyses for the bench-scale testing will be performed by a commercial analytical laboratory under subcontract to CDM Smith. In addition to the baseline samples collected during the water collection process, PFAS analysis with a 1-week turnaround time will be performed on the PFAS spiking solutions for verification prior to amending the collected water samples. PFAS effluent samples will be collected 5 times over the duration of each column experiment. PFAS in the influent drum will be measured during each effluent sampling event with. PFAS influent and effluent samples from the last running test condition will be sent for PFAS analysis with an expedited 1-week turnaround time.

In addition to PFAS analyses, the following monitoring will be performed:

- pH will be monitored daily in the GAC effluent columns for the 1st week of operation and during each sampling event at all columns thereafter.
- TOC will be monitored at the influent and effluent of GAC and AER columns 5 times throughout the duration of the study.
- Anions will be monitored in the influent and effluent of the AER columns 5 times throughout the duration of the study.
- Short-term changes in pH and chloride-to-sulfate mass ratio (CSMR) will be examined for the AER products tested. Separate AER columns employing unground and unwashed media will be set up and operated with unspiked Site water to facilitate this evaluation.
- Arsenic samples will be collected immediately following startup at approximately 50, 100 and 500 EBVs in all GAC columns to evaluate the potential for arsenic release. Note that separate GAC columns employing unground and unwashed media will be set up and operated with unspiked Site water to facilitate this evaluation.

2.4 Scheduling

Upon receipt of the water at the RTL, the anticipated time needed to perform the scope of work described above (assuming a 2-week turnaround time for PFAS analysis associated with the column testing) is approximately 20 to 24 weeks. Note that periodic email updates will be provided to document major milestones completed throughout the bench-scale treatability study. A table of proposed timeframes are below in **Table 2**.

Table 2. Schedule and Timeframes

Activity	Duration (weeks)
Planning/Sample Water Collection	2-3
Sample Water Shipment	2-3
Conduct baseline of PFAS analysis (Rush TAT)	1
Prepare Spike and Verify Spike Results (Rush TAT)	1
RSSCT Bench Testing	8
Final PFAs Sampling Analysis (Rush TAT)	1
Draft Technical Memorandum	2-3
Client Technical Review	2
Final Technical Memorandum	1-2
TOTAL	20-24

Note regarding the duration of the RSSCT Bench Testing:

Based on our scope, the RSSCT for the ARQ 1240 GAC is expected to take up to 8 weeks. This extended timeline is due to the exceptional performance of the ARQ 1240 GAC, which has significantly outperformed other GACs in our previous tests. The other GAC and IX media evaluations will still be completed within the 4-week timeframe. However, the ARQ GAC testing will require the full 8 weeks. We'll be able to work on the report and figures while waiting for the ARQ GAC to finish, but we won't be able to submit the draft report until the ARQ GAC RSSCT testing is complete.

Specifically, the ARQ GAC will be evaluated up to 100,000 EBVs, compared to the typical 40,000–50,000 EBVs for other GAC media. This increased capacity and longer expected life necessitate a longer testing duration to fully characterize performance.

3.0 Waste Disposal

Column effluents will be containerized, segregated, and treated using GAC at the RTL. The generated aqueous waste will be characterized prior to waste disposal whereas the solid waste (i.e., spent GAC and AER/NS) will be disposed of offsite via incineration by a waste disposal/management subcontractor.

4.0 Reporting

Upon receipt of all analytical data from the column experiments, a virtual Teams meeting will be held to discuss relevant results/findings. Subsequently, a technical memorandum on the RSSCT results will be prepared. This memorandum will summarize the experimental methods, provide results in tabular and/or graphical form, and discuss the results with respect to PFAS treatment effectiveness, and will be attached to the technical memorandum for the overall project.

5.0 Assumptions

The following assumptions were used to develop the cost estimate:

- Crescenta Valley Water District operators will be responsible for procuring the appropriate sampling supplies/equipment, performing the water collection in accordance with CDM Smith-provided guidance, and coordinating the pickup of the filled drums for delivery to CDM Smith's Research and Testing Laboratory (RTL) in Bellevue, Washington.
- Approximately 450 gallons of water will be collected in 15 30-gal, open-top HDPE drums and sent to CDM Smith's RTL via freight. The transit time from drum pickup to delivery was assumed to be 3 weeks.
- Crescenta Valley Water District operators will be responsible for collecting baseline samples at approximately mid-way through the field sample collection process directly to the contracted laboratory for baseline analysis (target PFAS via EPA method 533).
- Field measurements of pH, alkalinity, hardness, and residual chlorine will be collected during sample collection.

- If the site water in the sample barrels contains a significant amount of fine particles, pre-treatment using a 5 or 10 micron bag filter may be required.
- Five test conditions will be set up in duplicate for the Site water as shown above in **Table 1**. A total of 10 columns will be set up.
- Due to the relatively low PFAS levels expected in the collected water, the sample water will be spiked with the PFAS compounds detected in Site groundwater to a factor of approximately 3-5 to facilitate treatment assessment.
- Prior to column operation, one PFAS-spiked sample will be sent to the contracted laboratory to verify the accuracy of the spiking protocols. Fast (1 week) turnaround time is assumed.
- RSSCT methodology with 3.5-fold particle size reduction will be employed.
- Vendor-recommended EBCTs for GACs and AERs of 10 and 3 mins, respectively, were assumed.
- Actual EBCTs to be used will be determined following particle size reduction & confirmation.
- PFAS effluent samples will be collected 5 times over the duration of each column experiment. PFAS in the influent drum will be measured during each effluent sampling event.
- A standard turnaround time of 2 weeks is assumed for target PFAS analysis.
- PFAs analysis by EPA 533 from the final column sampling event will be expedited with a 1-week turnaround time.
- pH will be monitored daily in the GAC effluent columns for the 1st week of operation and during each sampling event thereafter in the GAC and AER effluents.
- Anions will be monitored in the influent and effluent of the AER columns 5 times throughout the duration of the study.
- Arsenic samples will be collected immediately following startup and at approximately 50, 100, and 500 EBVs in GAC columns to evaluate the potential for arsenic release. Separate columns using unground GAC will be setup as part of this experiment.
- Upon completion of the study, waste generated will be treated with GAC and disposed of properly following analytical confirmation of treatment.
- Engineering cost estimates were not included as part of the scope of this bench-scale treatability study.
- Samples and any chemicals associated with the project will be disposed of within four months after the submission of the submitted draft report, in accordance with the CDM Smith RTL's retention policy. When feasible, samples will be returned to the client for disposal. Hazardous



Carla Dillon, P.E.

July 16, 2025

Page 10

waste disposal or shipping invoices may be incurred up to six months after the submitted draft report.

- A 5% markup on other direct costs (ODCs) and outside professionals (Ops) was assumed.
- Tax and shipping costs associated with equipment and supplies were estimated to be 20%.

CRESCENTA VALLEY WATER DISTRICT

BOARD OF DIRECTORS - STAFF REPORT

Action Item No. 3
July 22, 2025

To: Honorable President and Members of the Board of Directors
From: Gabriel Gomez - System Operations Manager
Carla Dillon – Director of Engineering & Operations
Subject: Annual Supervisory Control and Data Acquisition (SCADA) System Support Services

ACTION ITEM:

Consideration and motion to authorize the General Manager to award a contract in the amount of \$83,840 for SCADA Support Services for Fiscal Year 2025-26.

BACKGROUND:

The primary SCADA integrator has worked with the District for several years at a level of service and quality that meets and exceeds standards.

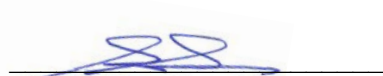
These remote services include continuous work on the District's PLCs, local HMI, historian, server, alarm notification, and other software and hardware support. This proposal also includes site trips to the District for service repairs and maintenance that cannot be completed remotely.

The District's budget is \$96,300 for Telemetry and Signal System.

RECOMMENDATION:

Staff recommends that the Board authorize the General Manager to award a contract for SCADA Support Services for up to \$83,840 for FY 2025-26.

Prepared by:



Gabriel Gomez
System Operations Manager

Submitted by:



Carla Dillon, P.E.
Director of Engineering & Operations

CRESCENTA VALLEY WATER DISTRICT

BOARD OF DIRECTORS - STAFF REPORT

Action Item No 4.
July 22, 2025

To: Honorable President and Members of the Board of Directors
From: James Lee – General Manager
Subject: Board Governance Seminar

ACTION ITEM:

Consideration and possible motion to schedule a Board governance seminar.

BACKGROUND:

Public agency governance is an important part of effective government, including efficient decision-making, development of clear vision and objectives, and transparency and accountability.

The California Special Districts Association (CSDA) recognizes the importance of working closely to set and work toward common goals, and CSDA offers a Special District Governance Seminar, which is also available through CSDA conferences.

The possibility of considering such a seminar was introduced at the May 29, 2025, Executive Committee meeting, and follow-up information such as seminar outline and the possibility of reduced program cost were discussed. At the July 9, 2025, Executive Committee meeting, a significantly reduced cost negotiated at \$1,700 and the seminar outline were discussed, and the outline is enclosed for reference.

This item is a placeholder for discussion about considering such a seminar for the Board. The seminar can be tailored to be between 2-8 hours.

RECOMMENDATION

Discuss consideration for a Board governance seminar.

Prepared and Submitted by:



James Lee
General Manager

Attachment(s): Governance seminar outline

Governance Training for the Board of Directors

"Building a Foundation for Good Governance"

Seminar outline

- Welcome/Introductions/Getting Acquainted (Warm-up)
- Program Overview/Expectation
- What are Boards and How Did they Get Here?
- Why Think About Governance?
- How do Boards Achieve a Unity of Purpose?
- Process and Steps Your Board Can Take to Build a Unity of Purpose
- Qualities and Skills of Effective Directors
- How Boards Carry Out Their Mission Effectively

Sub-topics cover:

- The concept of the “three-legged stool” (Customers, Board & Staff)
- Six Styles of Leadership and Engagement
- Division of work between electeds and staff and among different levels of staff
- Strategic Planning and how it can be applied to annual budgeting
- Best practices for evaluating the General Manager/CEO
- Importance of and strategies for public engagement/communications
- We show some fun cringe-worthy videos of bad practices ... they always get a lot of laughs
- Open “ask me anything” Q&A session

CRESCENTA VALLEY WATER DISTRICT

STAFF REPORT

Action Item No. 5
July 22, 2025

To: Honorable President and Members of the Board of Directors
From: Christina Kopelman – Assistant Engineer
Carla Dillon, P.E. – Director of Engineering and Operations
Subject: **Recertification of CVWD's Sewer System Management Plan (SSMP)**

ACTION ITEM:

Recertification of CVWD's 2025 updated Sewer System Management Plan (SSMP).

BACKGROUND:

On May 2, 2006, the State Water Resources Control Board (SWRCB) adopted Order No. 2006-003 which established the General Waste Discharge Requirements (WDRs) for all publicly owned or operated sewer systems within California. The SWRCB issued Order No. WQ 2022-0103-DWQ on December 6, 2022, and this replaced the prior order. The WDRs require that the owners and operators of a sewer system perform the following:

1. Report Sanitary Sewer Overflows (SSOs) to the SWRCB;
2. Develop and implement a Sewer System Management Plan (SSMP), which is a written document detailing how the District's sewer system is operated, inspected, maintained, repaired, and funded;
3. Revise the SSMP every six years and submit it to the SWRCB documenting certification by the governing agency;
4. Audit the SSMP every three years, and submit it to the SWRCB.

In July of 2009, staff completed CVWD's SSMP, and the plan was approved by the Board of Directors. This requirement was put into place to ensure that the governing boards are aware of the SSMP program and the potential impacts to the District, such as budget needs and updating CVWD's Rules & Regulations. The SSMP was last re-certified in July 2019 and submitted to the SWRCB on August 2, 2019.

The SWRCB mandates that the SSMP undergo an audit every three years (by February 2028, 2031, etc.) and a recertification every six years (August 2025, 2031, etc.). The process includes a comprehensive review of the existing SSMP to ensure it accurately reflects current operational practices and continuous compliance with the state regulations.

Staff audited the SSMP to incorporate changes made to the WDR in 2022 by SWRCB. The SWRCB released enforcement criteria for the WDR, but this required no major changes to the SSMP. A summary of these changes can be found in the attached 2025 SSMP.

DISCUSSION:

The SCWRB released a new Order, WQ 2022-0103-DWQ with minor changes to the previous Order WQ 2006-003. It introduced new requirements for managing a sewer system. Some of the key updates include enhanced reporting requirements, increased focus on asset management, updated best management practices (BMPs), and increased emphasis on public transparency measures.

Since last certifying the SSMP in 2019, CVWD began employing a new alternative treatment method for root removal. Staff also performed inspections; however, cleaning was based upon results of the

inspection and known trouble spots. In addition, staff performed more frequent maintenance on both lift station pumps and cleaned the lift station force main. Otherwise, maintenance and inspection were performed as described in the SSMP. All factors resulted in a reduction of sewer system overflows (SSOs).

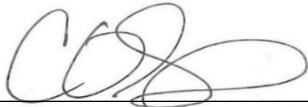
In February 2025, Staff completed the SSMP audit for the period August 2021 to August 2024. Sections 4, 5, 6 and 8 of the SSMP were updated to better represent CVWD's office and field practices. A summary of these changes can be found in the attached Audit Summary, which is incorporated into the SSMP as appendix 10-A. For CVWD to stay in compliance with the WDR, re-certification of the SSMP must be approved by the Board of Directors prior to August 2, 2025 and uploaded onto the State portal.

The Engineering Committee met on July 9, 2025, and staff relayed the progress on the SSMP update. The Committee was alerted that the document would be in the next Board package.

RECOMMENDATION:

It is staff's recommendation that the Board certify CVWD's updated Sewer System Management Plan, pursuant to the new Order, WQ 2022-0103-DWQ to ensure full compliance with the Statewide General Waste Discharge Requirements (WDR).

Prepared by:



Christina Kopelman
Assistant Engineer

Submitted by:



Carla Dillon, P.E.
Director of Engineering & Operations

Attachments: SSMP



Crescenta Valley Water District Sewer System Management Plan

FINAL | JULY 2025



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Table of Contents

1	Introduction	1-1
1.1	Purpose.....	1-1
1.2	Goals.....	1-2
1.3	About This Document	1-2
1.4	SSMP Update Schedule	1-2
1.5	Sewer System Asset Overview	1-3
2	Organization	2-1
2.1	Standard Organization.....	2-1
2.2	SSO Reporting and Emergency Response Organization	2-1
2.2.1	Principal Executive Officer	2-1
2.2.2	Online Reporting	2-1
2.2.3	Personnel Contact List.....	2-2
2.3	Organization Chart	2-2
3	Legal Authority.....	3-1
3.1	Overview	3-1
3.2	Boundaries of Public Ownership.....	3-2
3.3	Illicit Discharge Prohibitions	3-2
3.3.1	Prohibited Discharges.....	3-2
3.3.2	Fats, Oils, and Grease and Debris Discharge	3-3
3.3.3	Industrial Pretreatment Program.....	3-4
3.3.4	Illegal Service Connections	3-4
3.4	Proper Design and Construction of Facilities	3-4
3.4.1	Development Jobs (D-Jobs).....	3-4
3.4.2	New Infrastructure	3-4
3.4.3	Legal Authority to Contract Emergency Work	3-5
3.4.4	Record Keeping	3-5
3.5	Access to Publicly Owned Collection System	3-5
3.6	Contract Agreements.....	3-5
3.6.1	Wastewater Treatment Agreement	3-5
3.6.2	Wastewater Conveyance and Operations Agreements	3-6
3.6.3	Maintenance Agreements	3-6

3.7	Violations of Sewer Ordinances.....	3-6
3.7.1	Discontinuing Service.....	3-6
3.7.2	Further Violation	3-6
4	Operation and Maintenance Program	4-1
4.1	Purpose.....	4-1
4.2	Up-to-Date Map of Sanitary Sewer System.....	4-1
4.2.1	General Information	4-1
4.2.2	Mapping.....	4-1
4.2.3	Flow Monitoring.....	4-1
4.2.4	Change Management	4-2
4.3	Preventative Maintenance Program	4-2
4.3.1	Sewer Line Cleaning Program.....	4-2
4.3.2	CCTV Inspection.....	4-4
4.3.3	Interceptor Maintenance	4-5
4.3.4	Enhanced Maintenance Areas (EMA).....	4-5
4.3.5	Alternative Cleaning Methods.....	4-6
4.4	Lift Station Operation and Maintenance	4-7
4.4.1	Lift Station As-Built and Spare Parts List	4-7
4.4.2	Lift Station Maintenance	4-7
4.4.3	Record Keeping	4-8
4.5	Rehabilitation and Replacement Plan	4-8
4.5.1	Condition Assessment Program.....	4-8
4.5.2	Program Implementation	4-8
4.6	Design Considerations for Operational Control.....	4-9
4.7	Data Management	4-9
4.8	Training for Sanitary Sewer System Staff and Contractors	4-9
4.8.1	New Employee Training.....	4-9
4.8.2	Existing Employee Training.....	4-9
4.8.3	Training Records	4-10
4.9	Budget and Resources	4-10
4.9.1	Rates and Charges	4-10
4.9.2	Operating Budget Projection	4-10
5	Design and Performance Provisions.....	5-1

5.1	Standards of Construction	5-1
5.2	Design Guidelines	5-1
5.2.1	Gravity Main Design Guidelines	5-1
5.2.2	Lift Stations, Force Mains, and Ejector Pumps	5-2
5.3	Awarded Contracts	5-2
5.4	Private Development Criteria	5-3
5.4.1	Contractor Licensing	5-3
5.4.2	Main Line Extension Requirements	5-3
5.4.3	Submittals and Final As-Builts Prior to Acceptance	5-3
5.5	Permitting and Easements	5-4
5.5.1	Insurance	5-4
5.5.2	Inspection	5-4
5.6	As-Built Drawings	5-4
5.7	One Year Guarantee	5-4
6	Spill Emergency Response Plan	6-1
6.1	Purpose	6-1
6.2	Decision Process and SERP Activation	6-1
6.2.1	Communication Procedure	6-1
6.2.2	Internal Notification	6-2
6.2.3	External Notifications	6-2
6.3	Collection System and Personnel Overview	6-5
6.3.1	General System Information	6-5
6.3.2	Wastewater Personnel	6-5
6.4	Response, Restoration and Recovery	6-5
6.4.1	Spills in the Public Right-of-Way – General Procedures	6-5
6.4.2	Private Lateral Spills	6-8
6.4.3	Emergency Action Plans	6-9
6.4.4	Additional Measures for Large Volume SSOs	6-9
6.4.5	Procedure for Contracting Emergency Repair Work	6-10
6.5	Plan Approval, Update and Training	6-10
6.5.1	Plans Update	6-10
6.5.2	Plan Approval	6-10
7	Sewer Pipe Blockage Control Program Plan	7-1

7.1	Legal Authority to Prohibit Discharges of FOG	7-1
7.2	Steps to Prevent Excessive FOG Discharges	7-1
7.3	Disposal Methods for FOG Generated.....	7-1
7.4	Public Education Outreach Program	7-1
7.5	Installation Requirements.....	7-2
7.6	Industrial Waste Permit Requirements.....	7-2
7.7	Domestic Sewage Disposal	7-2
7.8	Cleaning Schedule for Identified FOG Prone Sewer Segments.....	7-2
8	System Evaluation and Capacity Assurance Plan	8-1
8.1	Purpose	8-1
8.2	Flow Monitoring	8-1
8.2.1	Inflow and Infiltration (I/I) Determination	8-1
8.2.2	Capacity Analysis	8-2
8.3	Hydraulic Model	8-3
8.3.1	Design Flow Calculations.....	8-3
8.3.2	Population Estimation.....	8-3
8.3.3	Average Dry Weather Flow Estimation	8-3
8.3.4	Peak Flow Factors	8-3
8.3.5	Analysis	8-4
8.4	Enhanced Maintenance Area Effects on Flow Monitoring.....	8-4
8.5	Inflow & Infiltration and Flow Monitoring Goals	8-4
8.6	Capital Improvement Program	8-4
9	Monitoring, Measurement and Program Modifications	9-1
9.1	Maintenance of Information to Prioritize SSMP Activities	9-1
9.2	Monitoring and Measuring the Effectiveness of the SSMP.....	9-1
9.2.1	Sewer Engineering Jobs (S-Jobs)	9-1
9.2.2	Development Jobs Monitoring (D-Jobs)	9-2
9.2.3	Operations and Maintenance Work	9-2
9.2.4	City of Glendale, City of Los Angeles, City of La Canada-Flintridge & County of Los Angeles Project Work.....	9-2
9.3	Performance Monitoring and Program Changes	9-2
9.4	Assessing the success of the preventive operation and maintenance activities	9-3
9.5	Emergency Response Records	9-4

9.5.1	SSO Mapping	9-4
9.6	Safety Training Records.....	9-4
9.7	Approach to Program Modifications and Plan Updates.....	9-4
10	Audit Plan	10-1
11	Communication Program.....	11-1
11.1	Procedures to Communications with Residential, Industrial and Commercial Customers and the General Public, for spills and discharges	11-1
11.2	Communications with Land Developers, Consultant Engineers and Contractors	11-2
11.3	Communications with the City of Los Angeles.....	11-2
11.4	Communications with City of La Canada-Flintridge and the City of Glendale	11-2
11.5	Outreach to Plumbers and Building Contractors.....	11-2
11.6	Communications with the Board of Directors	11-2

1 Introduction

This chapter outlines the need for an updated Sewer System Management Plan (SSMP). The Crescenta Valley Water District last updated its SSMP in July 2019. This document is the latest update to the existing plan. The SSMP has been prepared by CVWD staff as part of the district's effort to comply with the State Water Resources Control Board (SWRCB) December 6, 2022 Order No. WQ 2022-0103-DWQ Statewide Waste Discharge Requirement General Order for Sanitary Sewer Systems.

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.

Summary of General Order Requirements

Specification	Description	Linkage to SSMP
5.2 SSMP Development and Implementation	Requires development and implementation of an SSMP	Entire SSMP
5.3 Certification of SSMP and Plan Updates	Requires the District to certify and upload the SSMP to CIWQS	Entire SSMP
5.4 Sewer System Management Plan Audits	The Enrollee shall conduct an internal audit of its Sewer System Management Plan, and implementation of its Plan, at a minimum frequency of once every three years.	SSMP Audit
5.5 Six- Year SSMP Update	Requires update of the SSMP every 6 years, at a minimum. Requires governing board approval of SSMP. Requires the District to certify and upload SSMP to CIWQS.	Entire SSMP
5.6 System Resilience	Requires the District to include and implement system-specific procedures to proactively prioritize operations and maintenance (O&M), condition assessments and repair and rehabilitation to address system resilience.	Operations and Maintenance System Evaluation, Capacity Assurance and Capital Planning
5.10 System Capacity	Requires the District to maintain system capacity to convey forecasted weather	System Evaluation, and Capital Planning

Summarized from the SWRCB Order No. 2022-0103-DWQ Statewide Waste Discharge Requirement General Order for Sanitary Sewer Systems

1.2 Goals

CVWD's Wastewater Department is dedicated to providing its customers with safe, reliable, and environmentally sound sewer service at a reasonable 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 that occur.
- Maintain ongoing training and education of staff so that CVWD has the capacity to effectively address potential wastewater system problems as they arise.
- Meet all applicable regulatory notification and reporting requirements
- Perform all operation and maintenance (O&M) activities in a safe manner

1.3 About This Document

Pursuant to the General Order, 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.

1.4 SSMP Update Schedule

CVWD has fulfilled all SSMP requirements and completed key steps to prevent sewer spills. The SSMP is updated every 6 years to reflect significant program changes; minor updates are listed in the SSMP Audit Report. Revisions require re-certification by the Districts Board of Directors. The Table below outlines the audit and update schedule.

SSMP Audit and Update Schedule

Activity	Due Date
2027 SSMP Audit	February 1, 2028
2030 SSMP Audit	February 1, 2031
2031 SSMP Update	August 2, 2031

1.5 Sewer System Asset Overview

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. It includes approximately 72 miles of gravity mains, 7 miles of large-diameter sewer interceptor and 1 sewer lift station. The service area for the CVWD's wastewater collection system is approximately 4 square miles and serves approximately 33,000 thousand people.

Summary of Collection System Assets

Collection System	
CIWQS WDID	4SSO10444
Population (count)	33,000
Gravity Mains (miles)	72
Pump Stations (count)	1
Maintenance Holes	1,200
Treatment Facilities	Los Angeles-Glendale Water Reclamation Plant and Hyperion Water Reclamation Plant

- Location: The District's collection system is located in the County of Los Angeles
- Service Area Boundary: Appendix 4H shows the geographic service area boundary of the Districts collection system.
- Community Served: The District serves an area of approximately 4-square mile service area in relatively steep terrain ranging from 1,200 feet to almost 3,000 feet above sea level. The customer base is primarily single-family residential, multifamily, and commercial along Foothill Boulevard in La Crescenta and Honolulu Avenue in Montrose. Comprising of a total of 72 miles of sewer mains. The District currently provides water to over 8,000 accounts representing a population of approximately 35,000.
- Data Management Systems:
 - 1) ArcGIS: Geographic Information System (GIS) software used for managing and mapping geographically referenced City data.
 - 2) SCADA: Supervisory Control and Data Acquisition system used to collect and store City's small pump station alarm and instrumentation data.
- Lateral Ownership and Operational Responsibilities: The District does not own any portion of the service lateral. The private property owner is responsible for lateral maintenance and repair from the building connection to the wye connection at the sewer mainline.

- Breakdown of Service Connections: The breakdown of service connections is approximately 80 percent single-family residential, 10 percent multi-family residential, and 10 percent commercial/industrial.

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.

Director of Engineering and Operations – Manages capital improvements of the collection system and authorizes outside contractors to perform services.

Engineering Department Staff – 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, coordinates development and implementation of the SSMP, prepares and submits wastewater collection system planning documents, and provides support to Management and Operations staff.

External Affairs Specialist – Serves as the public information officer.

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 Director of Engineering & Operations as the duly authorized representative (Legally Responsible Official) for the purposes of electronic reporting. The request for authorization of the Director of Engineering & Operations 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 Director of Engineering and Operations to prepare overflow response reports for online submittal. The Director of Engineering & Operations, being the Legally

Responsible Official (LRO) of the District, is required to certify all District reports submitted to the State. The LRO is required to possess a recognized degree or certificate related to operations and maintenance of sanitary sewer systems and/or have professional training and experience related to the management of sanitary sewer systems, demonstrated through extensive knowledge, training and experience. In addition, the LRO must have management responsibility of the sanitary sewer system.

SSOs may occur at any moment. If the Director of Engineering and Operations 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) Operations and Maintenance Manager
- 2) Construction Supervisor

Should an overflow occur at a time when none of these individuals 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			
Director of Engineering and Operations			
Senior Engineer			
Operations and Maintenance Manager			
Construction Supervisor			
Maintenance Worker III			
Maintenance Worker II			
Maintenance Worker I			

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) and then issued a new WDR on December 6, 2022. 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 or any volume discharged to surface water must be reported to the Office of Emergency Services within two hours.)

- 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 five (5) flow

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

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
Director of Engineering and Operations	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 every five (5) years, which will allow for adequate cleaning to prevent SSOs. Additionally, the department utilizes closed circuit television (CCTV) inspections to help determine locations in need of maintenance. Areas in need of cleaning occur in tandem with inspections. 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 southernmost 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)
- Chassis 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 an inspection cycle of every three (3) years 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. Reference section 4.3.1.1

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 inspect or clean 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 (3) 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 annually. 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

The alternative cleaning methods will be reviewed on a bi-annual basis and changes implemented as necessary.

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 _____ is inspected on a semiweekly 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 the 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 – Once every two years
- SSO Simulation Training and Spill Volume Estimation - Annually
- 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 and mock 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. The training sessions includes the review of Standard Operating Manuals for sewer cleaning, CCTV, and repair. On-the-job cross-training is actively pursued to ensure that staff has a proficient working knowledge of each and every specific part of a task. CVWD staff is cross-trained on an as-needed basis so that critical tasks can be performed without interruption, even when the crew members change. 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. In FY 25/26, CVWD is finalizing its Wastewater Master Plan; this 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 Director of Engineering and Operations 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. Sample certificate can be found in Appendix 5-C.

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 warranties and guarantees required by CVWD's SSMP.

6 Spill 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 referred to *Section 6.4.1.2* of this document.

6.2 Decision Process and SERP 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 Vector 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 – External Affairs Specialist

or Director of Engineering and Operations

Glenwood Facility- Operations & Maintenance Manager

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.)

<u>Personnel Position – Name</u>	<u>24-hour Contact</u>	<u>E-mail</u>
https://www.cvwd.com/contact-us	Report a spill online anytime	
After Hours Emergency Number		
Construction Supervisor –		
Director of Engineering and Operations		
–		
External Affairs Specialist		
General Manager –		
Non-life Threatening Emergency Hotline		
Emergency contact information and a communication organization chart is included in <i>Appendix 2-B</i> .		

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	California Office of Emergency Services (COES) (800) 852-7550	Call COES within 2 hours of the agency being first notified	Not Applicable
	<u>And/or</u>	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
	Discharge to a storm drain pipe and not fully captured and returned to the sanitary sewer system	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 <i>Section 6.4.4</i>)	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:		
Adventist Health – Urgent Care:	(818) 249-9454	8am – 8pm, 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 seventy-two (72) 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 Director of Engineering and Operations.

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. Director of Engineering and Operations, in his or her absence the Regulatory and Public Affairs Manager or Director of Engineering and Operations 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 Director of Engineering and Operations as outlined in *Appendix 2-B* on the Emergency Response Organization Chart.
- D. Regulatory and Public Affairs Manager or Director of Engineering and Operations 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 Director of Engineering and Operations 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 Clinical Laboratory of San Bernardino, Inc. (909)587-3477 located at 21881 Barton Rd., Grand Terrace, CA 92313, 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 Sewer Pipe Blockage Control Program Plan

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 Flow Monitoring

The District owns one (1) flow monitoring station located on the Sewer Interceptor line which is within the City of Glendale at the intersection of [REDACTED] and [REDACTED]. 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 a third party flow monitoring company. 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.

In addition to the flow monitoring station, the District has five (5) smart covers, which measures depth to water in the manhole. The devices alarm if the levels reach an upper setpoint. This allows staff time to investigate and resolve prior to an SSO.

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 \$209,000 available for capital improvement projects in FY 25/26 and approximately \$470,000 each year for the next five (5) years, see *Appendix 8-A*.

9 Monitoring, Measurement and Program Modifications

9.1 Maintenance of Information to Prioritize SSMP Activities

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.
- Reports and Studies
- Update program elements, as appropriate, based on monitoring and/or performance evaluations.
- GIS.

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 Monitoring and Measuring the Effectiveness of the SSMP

The District monitors sewer spill performance to accomplish the following:

- Assess the success of the preventive maintenance program
- Identify and illustrate sewer spill trends, including frequency, volume, and location

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, CVWD assesses 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 Performance Monitoring and Program Changes

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.

The District evaluates the performance of its wastewater collection system using the performance measures identified in the Table below and updates SSMP programs, processes, and systems as needed. Sewer spill metrics are used to evaluate performance.

Activities		
Type	Performance Measure	Source
System Statistics	Total miles of gravity sewer	Excel/GIS
	Total number of maintenance holes	Excel/GIS
Sewer Spills		
Type	Performance Measure	Source
Measures Based on Sewer Spill Number	Number of sewer spills by cause	*CIWQS
	Map of sewer spills locations per year	GIS
Measures Based on Sewer Spill Volume	Total volume of sewer spills per year	*CIWQS
* https://www.waterboards.ca.gov/water_issues/programs/ciwqs/publicreports.html#sso		

9.4 *Assessing the success of the preventive operation and maintenance activities*

Sewer spill performance is the main indicator of success in the preventive maintenance program. Other indicators include production and productivity indicators measuring whether the District is accomplishing the planned maintenance programs. The District's sewer spill data in *Appendix 9-A* is used with the metrics identified in the field to determine the effectiveness and success of the preventive maintenance activities and allows for historical review of work to adjust maintenance and repair priorities. The District's preventive maintenance program has resulted in a significant

decline in preventive maintenance-related sewer spills since 2006 and has maintained a sewer spill rate of less than 1.3 sewer spills per 100 miles of sewer pipelines per year since 2016. There have been zero sewer spills since 2022.

9.5 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.

9.5.1 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.

9.6 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.

9.7 Approach to Program Modifications and Plan Updates

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

10 Audit Plan

In accordance with the WDR, CVWD will perform audits of the SSMP once every three (3) 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 every three years (see schedule below).

Year	Audit
2025	Six-year SSMP update planned in early 2025, re-certification completed by July 2025
2027	Three-year self-audit planned in late 2027, completed by February 1, 2028
2030	Three-year self-audit planned in late 2030, completed by February 1, 2031
2031	Six-year SSMP update planned in early 2031, re-certification completed by July 2031.

In addition, every six 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. The District has a variety of means for communicating with the public and contract agencies on the development, implementation, and update of the SSMP. The following sections describe the District's procedures for:

- Communicating with the public for spills and discharges resulting in closures of public areas, or that enter a source of drinking water.
- Communicating with the public on the development, implementation, and update of its SSMP, including opportunities for public input to plan implementation and updates
- Owners/operators of systems that connect into the Enrollee's system, including tributary systems, for system operation, maintenance, and capital improvement related activities.

Communication with Public on Public Area Closures

Warning signs shall be posted in the vicinity of any body of water, public park or public area that is suspected of being contaminated by sewage as determined by the District and County. This will be done as soon as possible following the initial response to the sewer spill. Signs should be posted on either side of the point of entry where sewage entered the body of water and the nearest public access point to that body of water. A minimum of 8 signs, placed 50 feet apart, will be posted. Contamination signs shall be double-sided, so they are plainly visible and posted in both direction of traffic and pedestrian flows.

11.1 Procedures to Communications with Residential, Industrial and Commercial Customers and the General Public, for spills and discharges

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.

11.2 Communications with 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.

11.3 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.

11.4 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-needed 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.

11.5 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 first revision of the SSMP was approved by the Board of Directors on July 21, 2009 and July 23, 2019, respectively. Audits have been consistently performed as required by the WDR. Recertification of the SSMP is required every six (6) years. The SSMP shall be audited for the three-year period ending August 2, 2027 and submit the audit report to the State by February 1, 2028 to remain in compliance with the WDR.

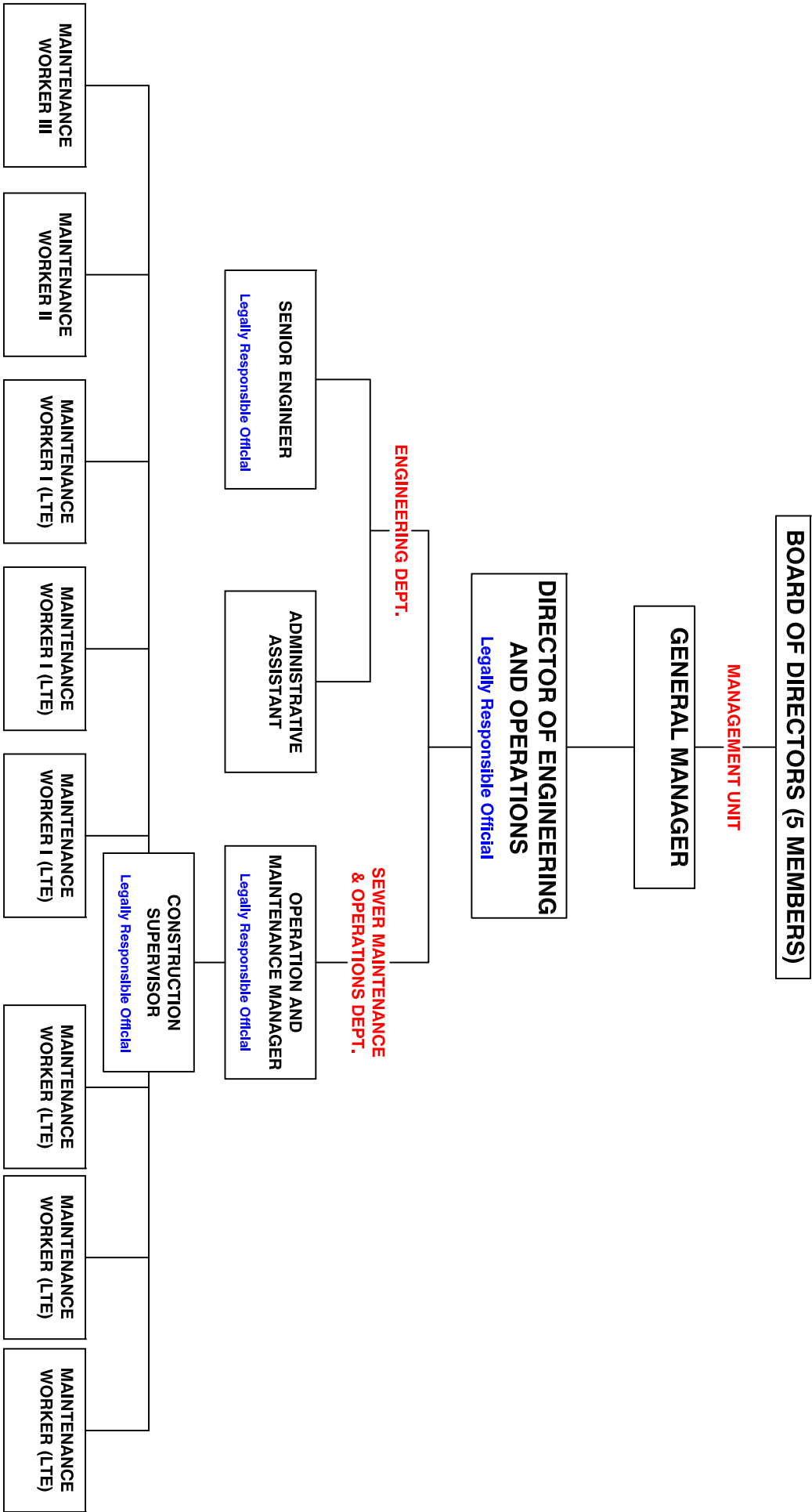
List of Appendices

APPENDIX 2-A: WASTEWATER DEPARTMENT ORGANIZATION CHART.....	
APPENDIX 2-B: SSO EMERGENCY RESPONSE COMMUNICATION CHART	
APPENDIX 3-A: INDUSTRIAL WASTE DISCHARGER PERMIT	
APPENDIX 3-B: CUSTOMER REQUEST TO EXTEND PUBLICLY OWNED COLLECTION SYSTEM	
APPENDIX 3-C: MAINTENANCE AGREEMENT	
APPENDIX 3-D: SAMPLE MUTUAL AID AGREEMENT.....	
APPENDIX 4-A: INVENTORY OF EQUIPMENT, MATERIAL, AND SPARE PARTS	
APPENDIX 4-B: SEWER MANHOLE INSPECTION REPORT	
APPENDIX 4-C: SEWER CLEANING STANDARD OPERATING PROCEDURES	
APPENDIX 4-D: SEWER CCTV INSPECTION STANDARD OPERATING PROCEDURES	
APPENDIX 4-E: ENHANCED MAINTENANCE AREA LIST	
APPENDIX 4-F: LIFT STATION MAINTENANCE & INSPECTION CHECKLIST.....	
APPENDIX 4-G: CONDITION ASSESSMENT/DEFECT CODING PROTOCOL.....	
APPENDIX 4-H: COLLECTION SYSTEM SERVICE AREA MAP	
APPENDIX 5-A: CONSTRUCTION MANUAL	
APPENDIX 5-B: STANDARD DRAWINGS	
APPENDIX 6-A: SPILL ESTIMATION TABLE	
APPENDIX 6-B: SAMPLE PRIVATE LATERAL ISSUE LETTER.....	
APPENDIX 6-C: EMERGENCY RESPONSE ACTION PLANS	
APPENDIX 6-D: STANDARD CONSTRUCTION CONTRACT	
APPENDIX 6-E: SPILL RESPONSE REPORT	
APPENDIX 6-F: WATER QUALITY SAMPLING AND ANALYSIS FOR SSO RESPONSE.....	
APPENDIX 8-A: CAPITAL IMPROVEMENT PROGRAM BUDGET & PROJECTIONS, FY 25/26.....	
APPENDIX 9-A: SSMP EVALUATION SUMMARY	
APPENDIX 10-A: AUDIT SUMMARY	

APPENDIX 2-A

WASTEWATER DEPARTMENT ORGANIZATION CHART

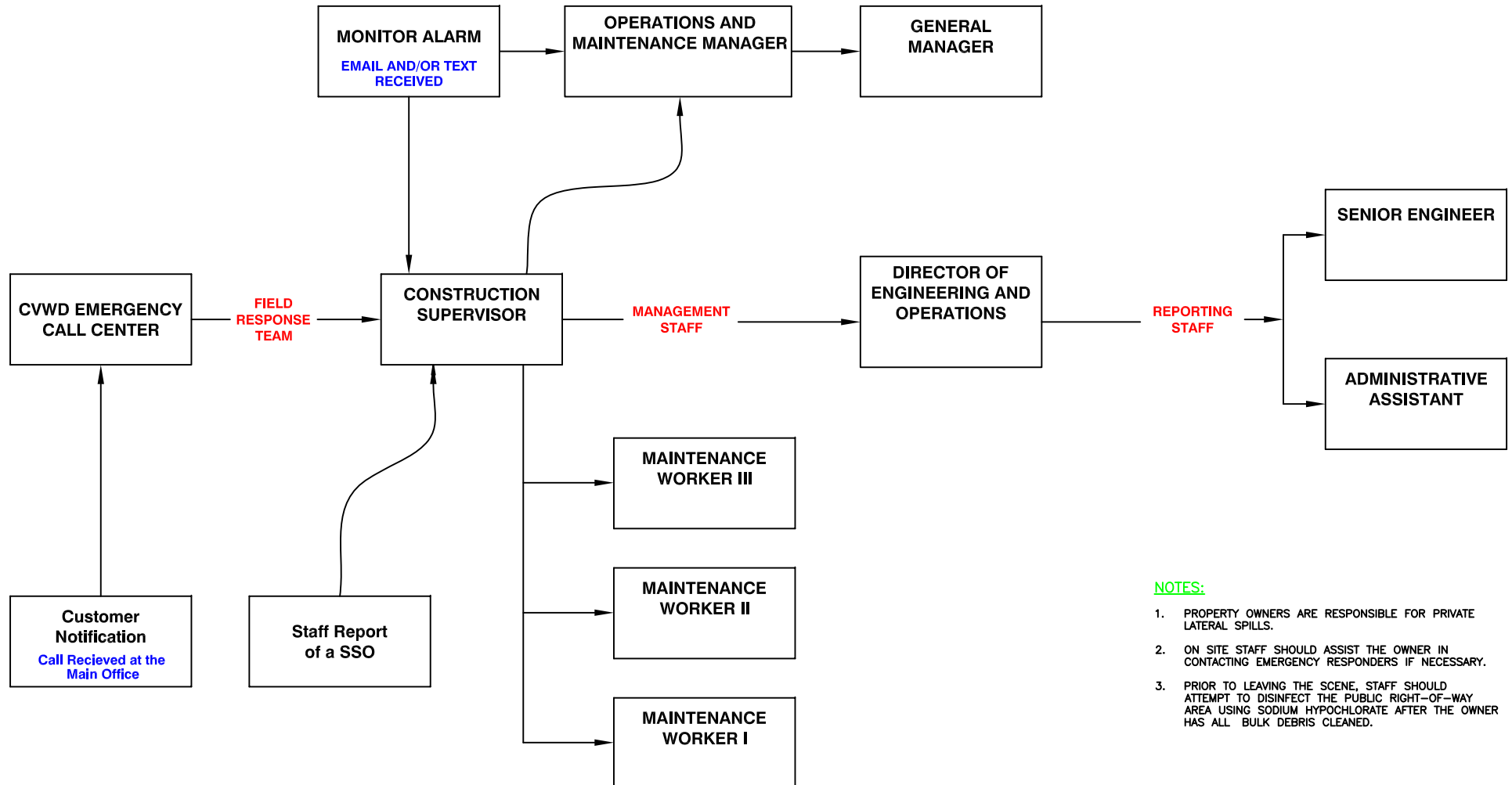
CRESCENTA VALLEY WATER DISTRICT WASTEWATER DEPARTMENT ORGANIZATION CHART



APPENDIX 2-B

SSO EMERGENCY RESPONSE COMMUNICATION CHART

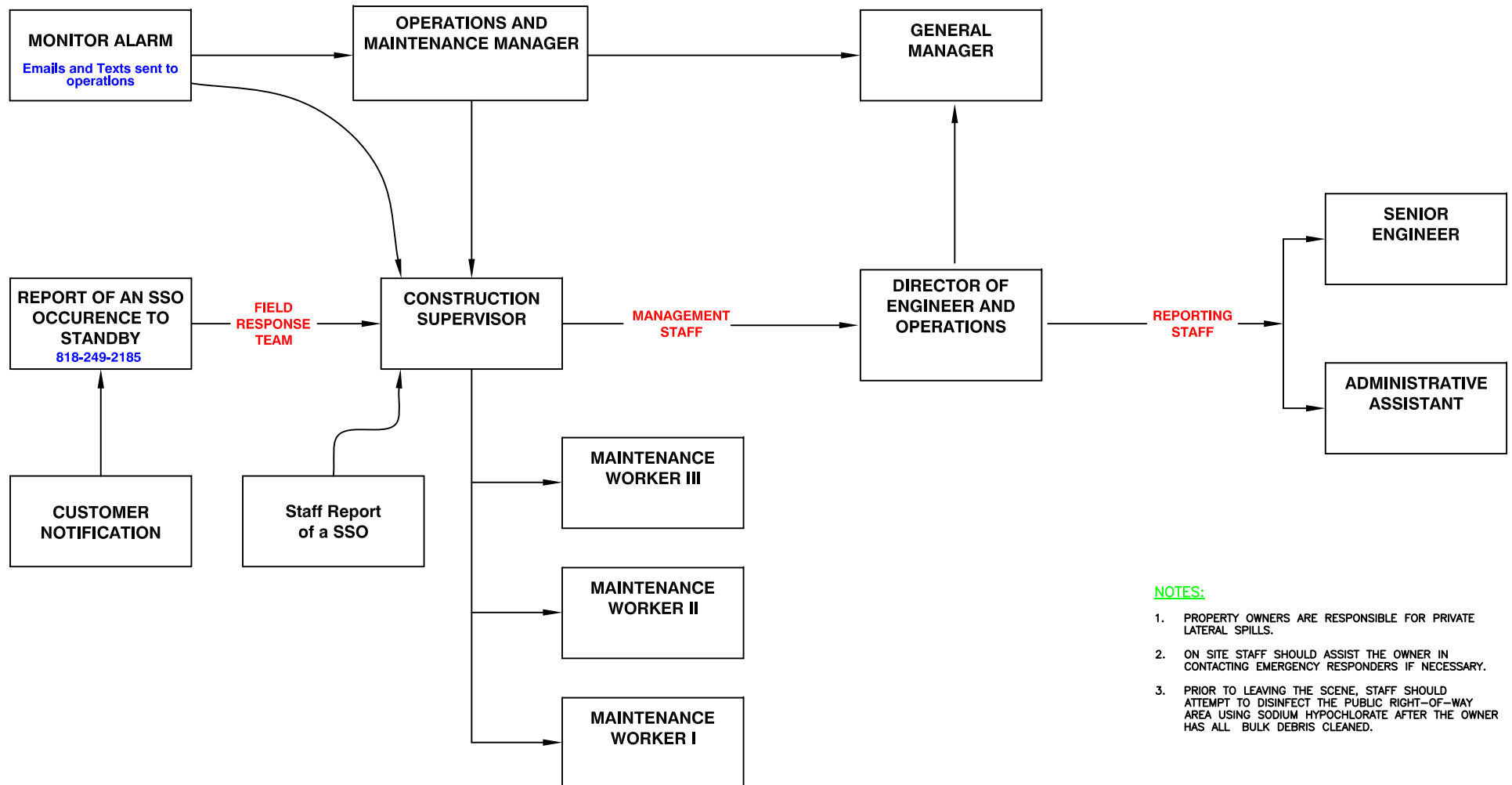
**CRESCENTA VALLEY WATER DISTRICT
WASTEWATER DEPARTMENT
SEWER SYSTEM OVERFLOW RESPONSE - NORMAL HOURS 7:00 A.M. - 4:30 P.M.**



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.

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



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 _____

MAILING ADDRESS _____

TYPE OF INDUSTRY _____

PROPERTY OWNER NAME _____

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-Flintridige – 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 duly 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

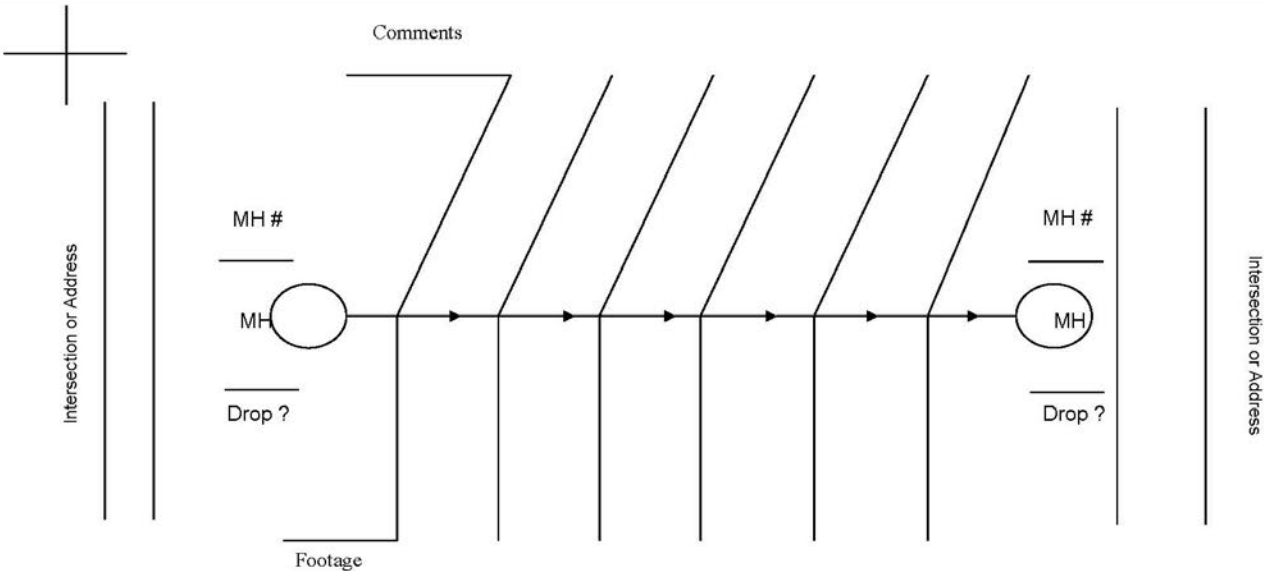
Regular	JPX (Mini Blue Thunder)
Other	

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 observed 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 #1 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.

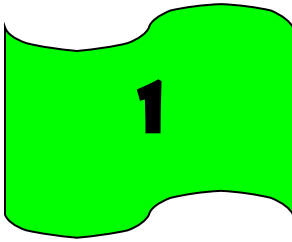
Condition Rating System

- 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

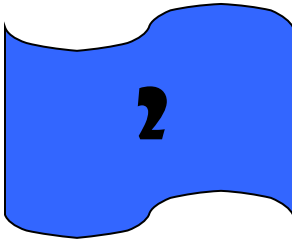
Keep in mind that these are just guidelines to assist operators in coding defects in a uniform manner – as much as is possible with the subjective nature of visual rating. Also, as you critique these guidelines, you may find that your comfort level with this rating system may be different than others, 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.

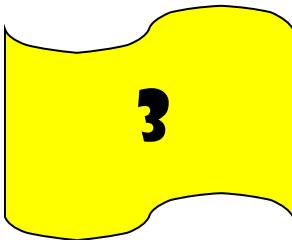
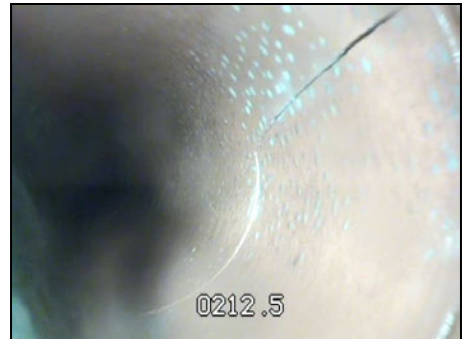
Cracks:



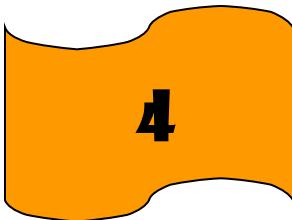
Good Condition – very light damage



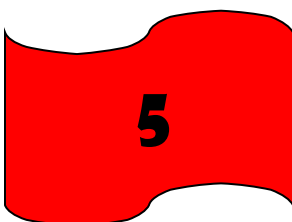
Minor Damage – minor visible damage



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



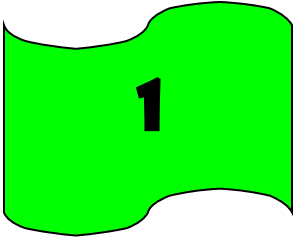
Significant Damage – major visible damage or debris. Possibly causing I&I. Cleaning may erode soil and cause further damage. Good sized hole in pipe.



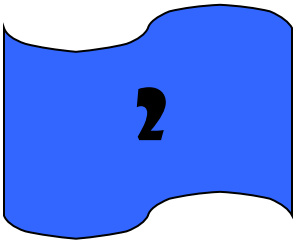
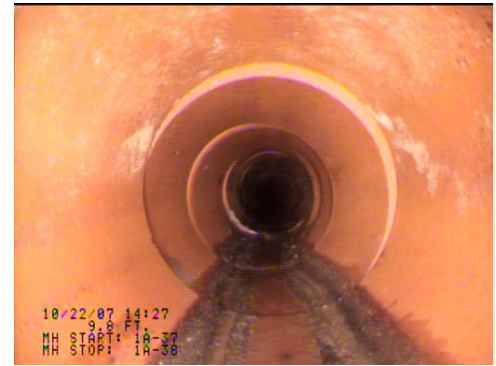
Critical Damage – failure or collapse. Repair ASAP



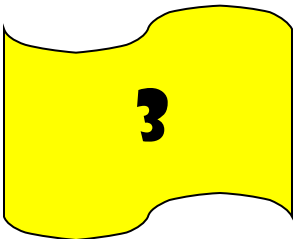
Offset Joint:



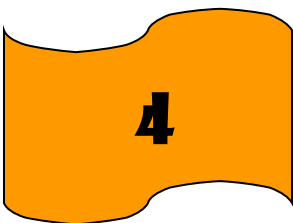
Good Condition – very light visible offset



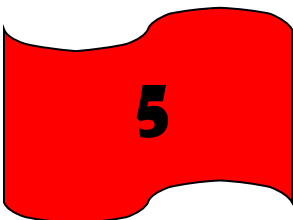
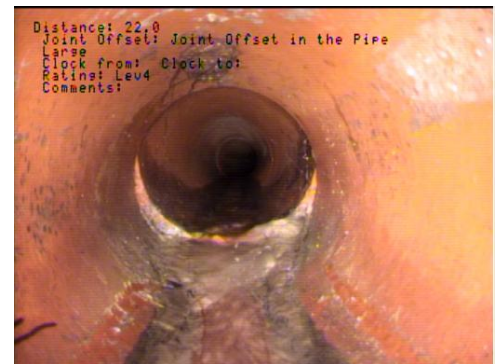
Minor Damage – Slight offset



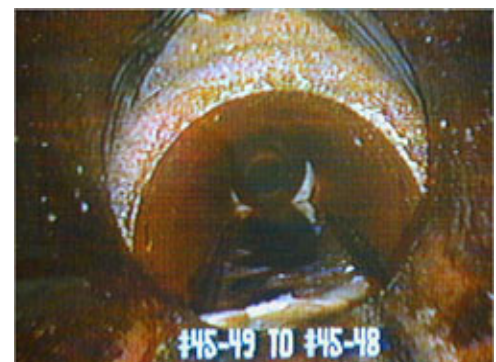
Moderate Damage – large offset that may lead to flow problems. Joint still in tact



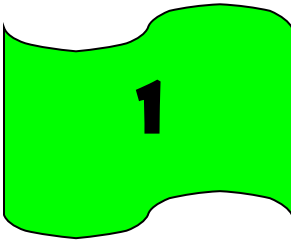
Significant Damage – major visible offset debris collects easily on offset. Joint integrity unknown.



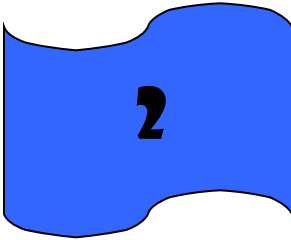
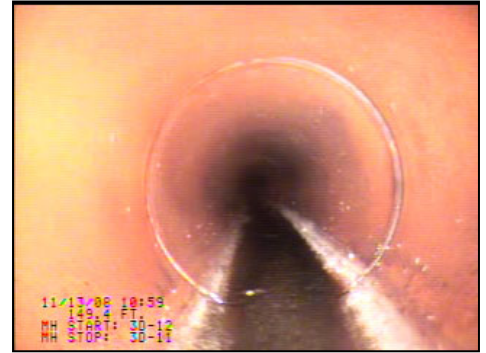
Critical Damage – failure or collapse



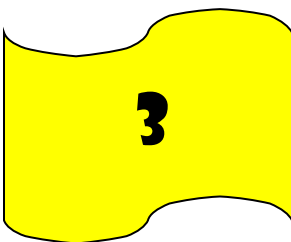
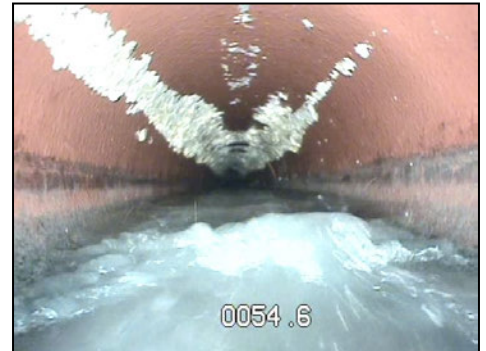
Grease:



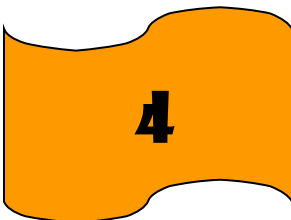
Good Condition – Insignificant grease



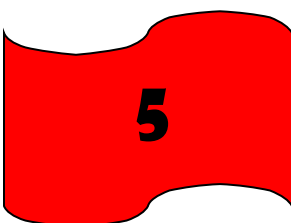
Minor Damage – very little visible grease



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



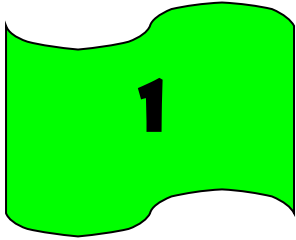
Significant Damage – major visible grease (Consider Area for Enhanced Maintenance Schedule)



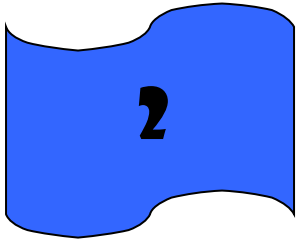
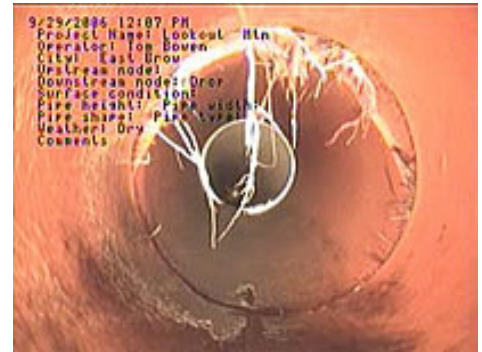
Critical Damage – approaching failure



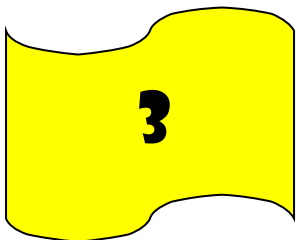
Root Intrusion:



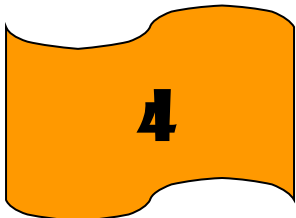
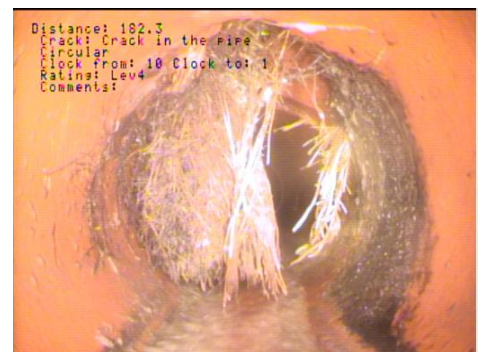
Good Condition – Insignificant root intrusion



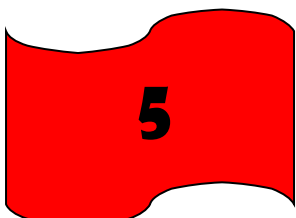
Minor Damage – Light root intrusion



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



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



Critical Damage – Critical intrusion pipe blockage/
failure is imminent

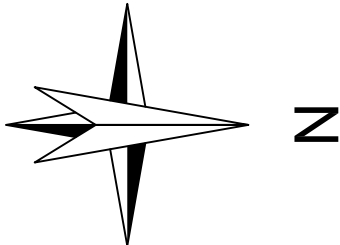
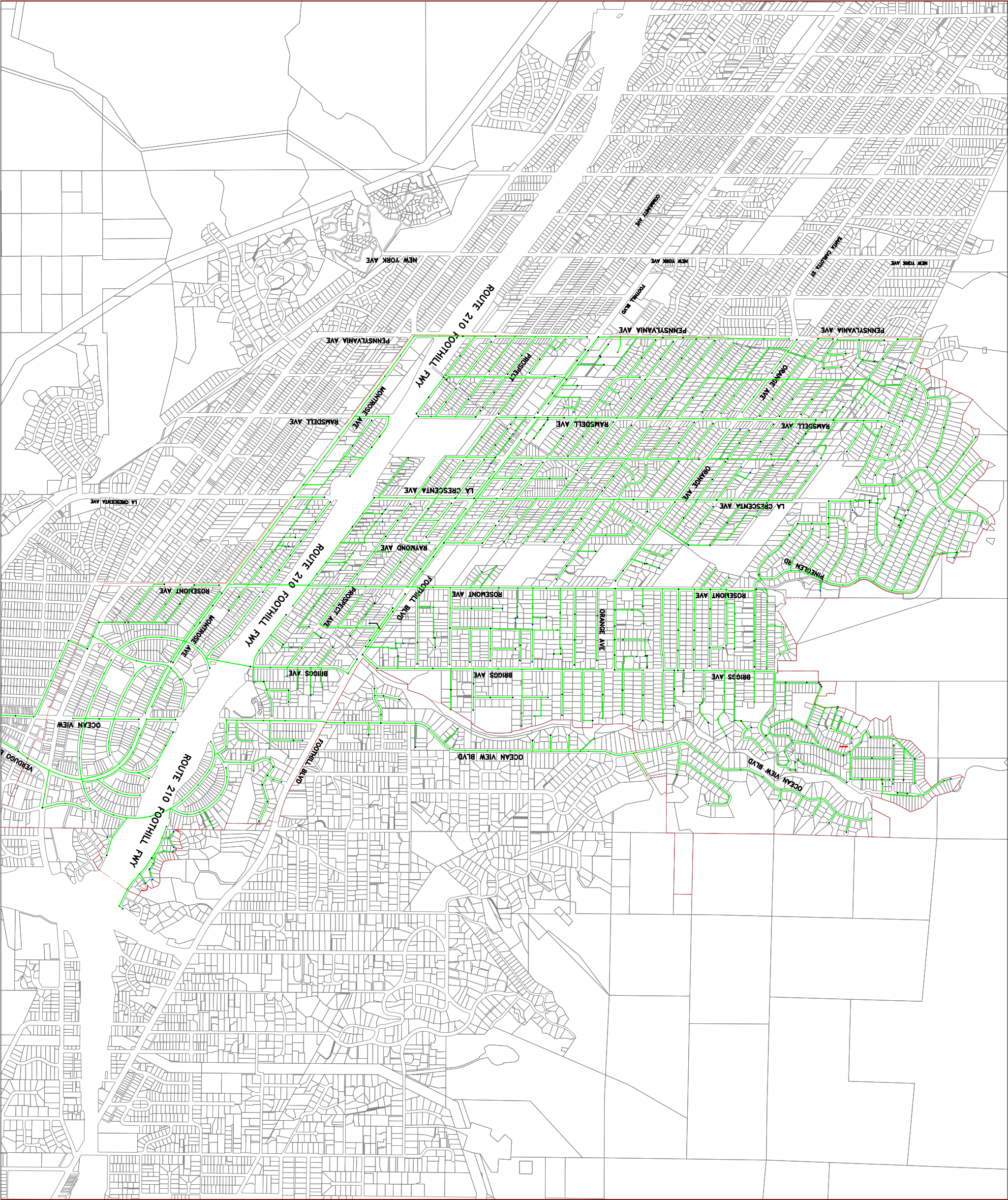


APPENDIX 4-H

COLLECTION SYSTEM SERVICE AREA MAP

Crescenta Valley Water District

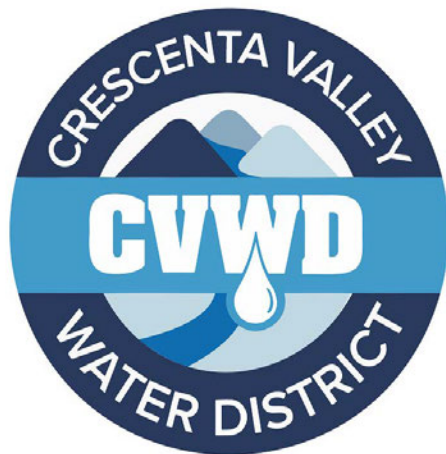
Appendix 4-H Collection System Service Area Map



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 if 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

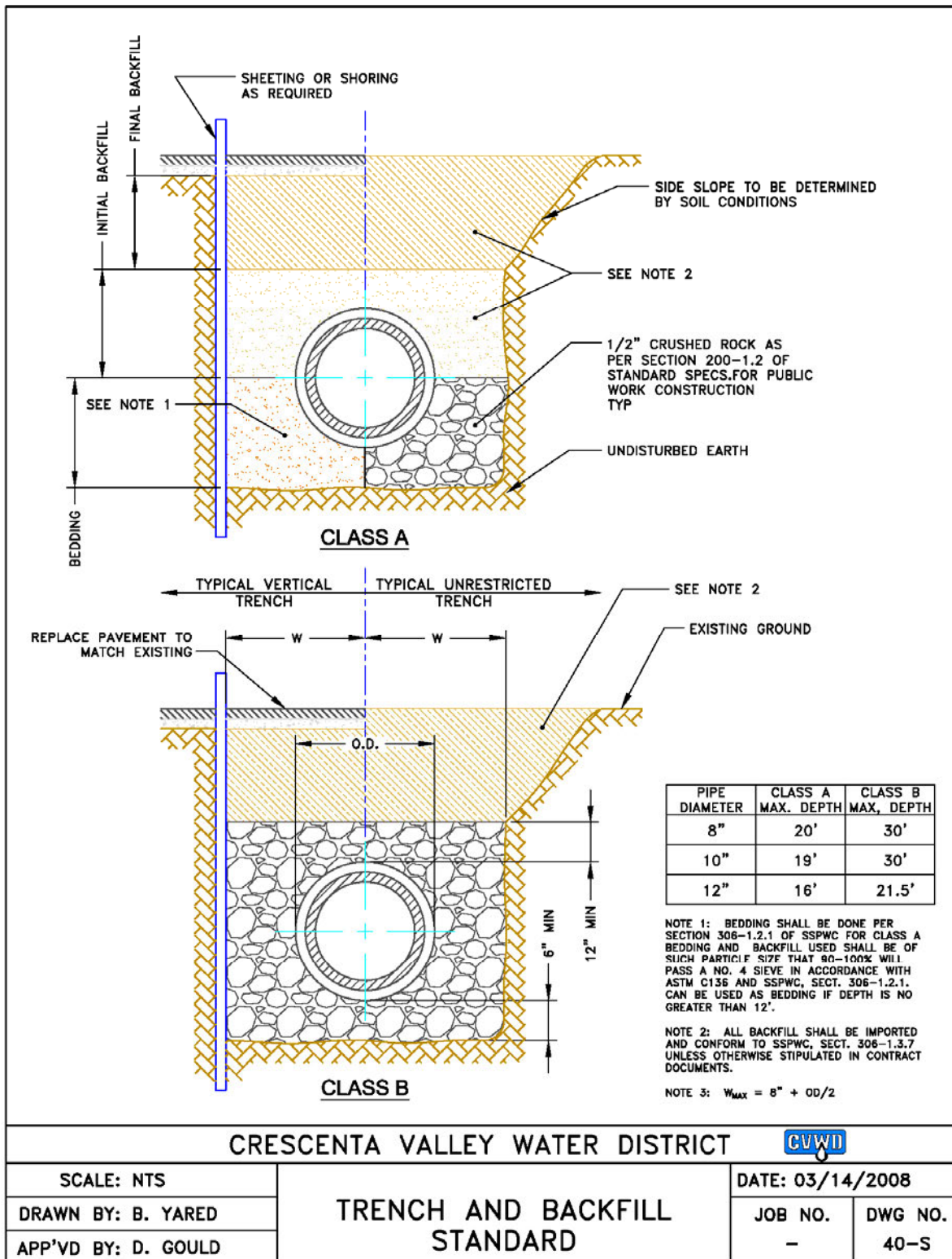
All above data shall be shown at the start and end manholes. While the camera is moving through the pipe, distance shall be the only data shown on the screen.

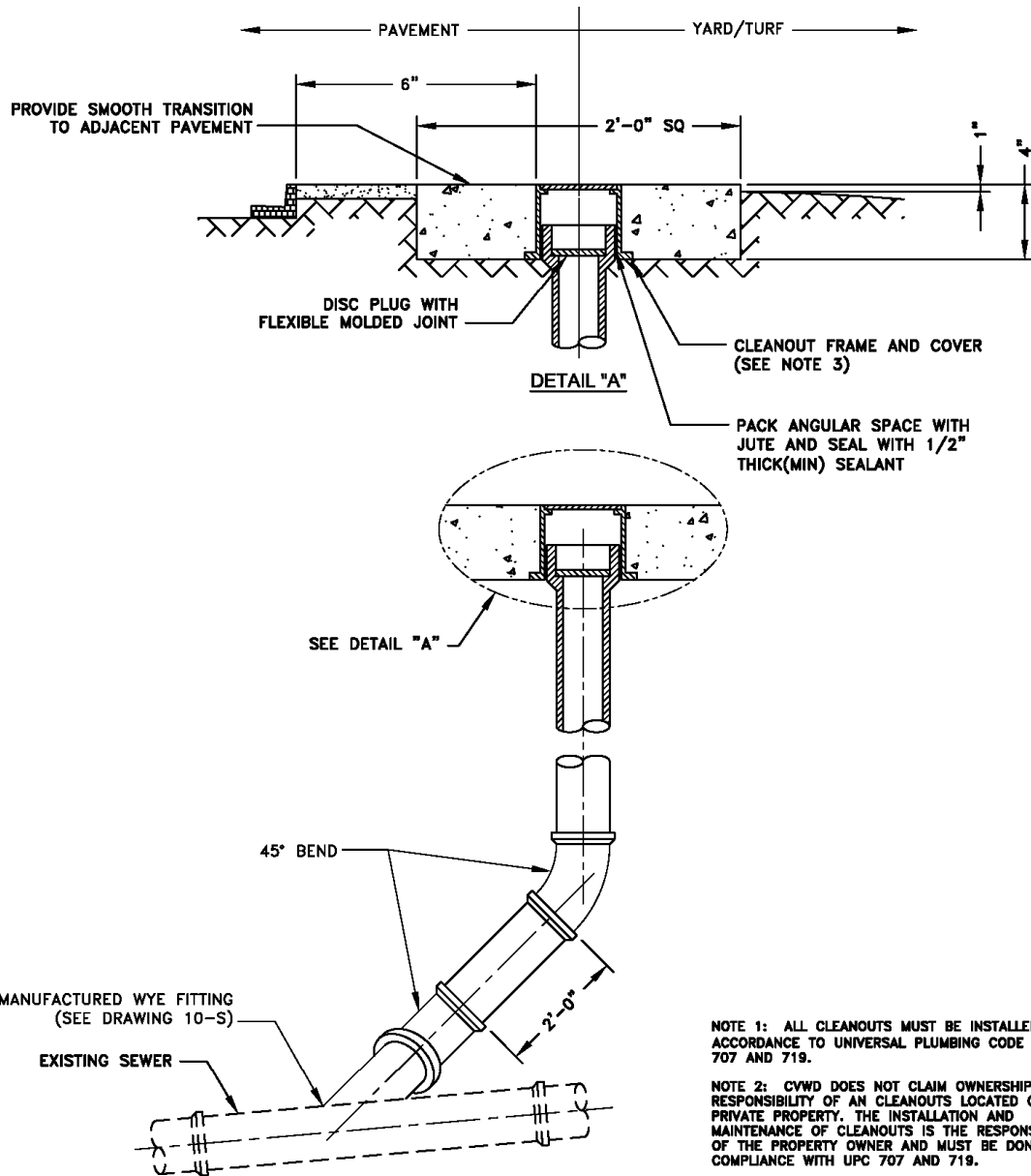
The entire video inspection shall be submitted to the Engineer on DVD (2 copies) and formatted with software compatible and readable by the District. The District shall not be responsible for purchasing additional software necessary to view the DVD.

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





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

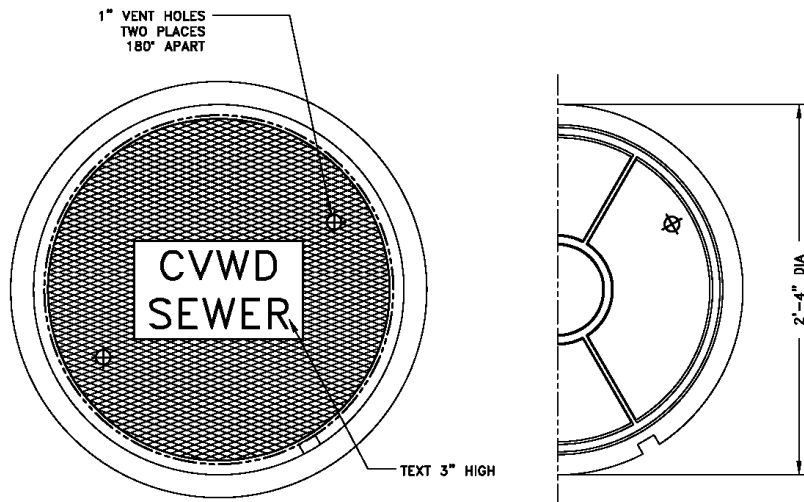
NOTE 2: CVWD DOES NOT CLAIM OWNERSHIP OR RESPONSIBILITY OF AN CLEANOUTS LOCATED ON PRIVATE PROPERTY. THE INSTALLATION AND MAINTENANCE OF CLEANOUTS IS THE RESPONSIBILITY OF THE PROPERTY OWNER AND MUST BE DONE IN COMPLIANCE WITH UPC 707 AND 719.

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

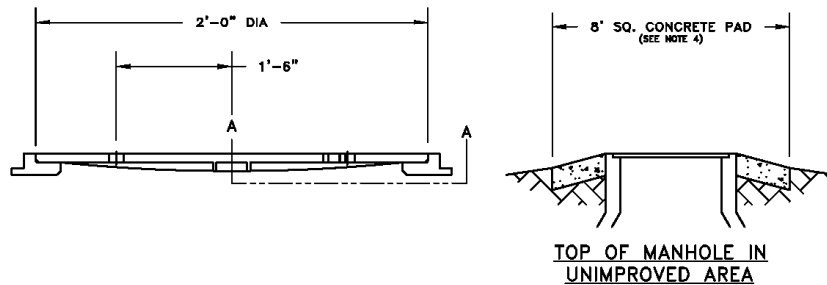
CRESCENTA VALLEY WATER DISTRICT



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



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

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

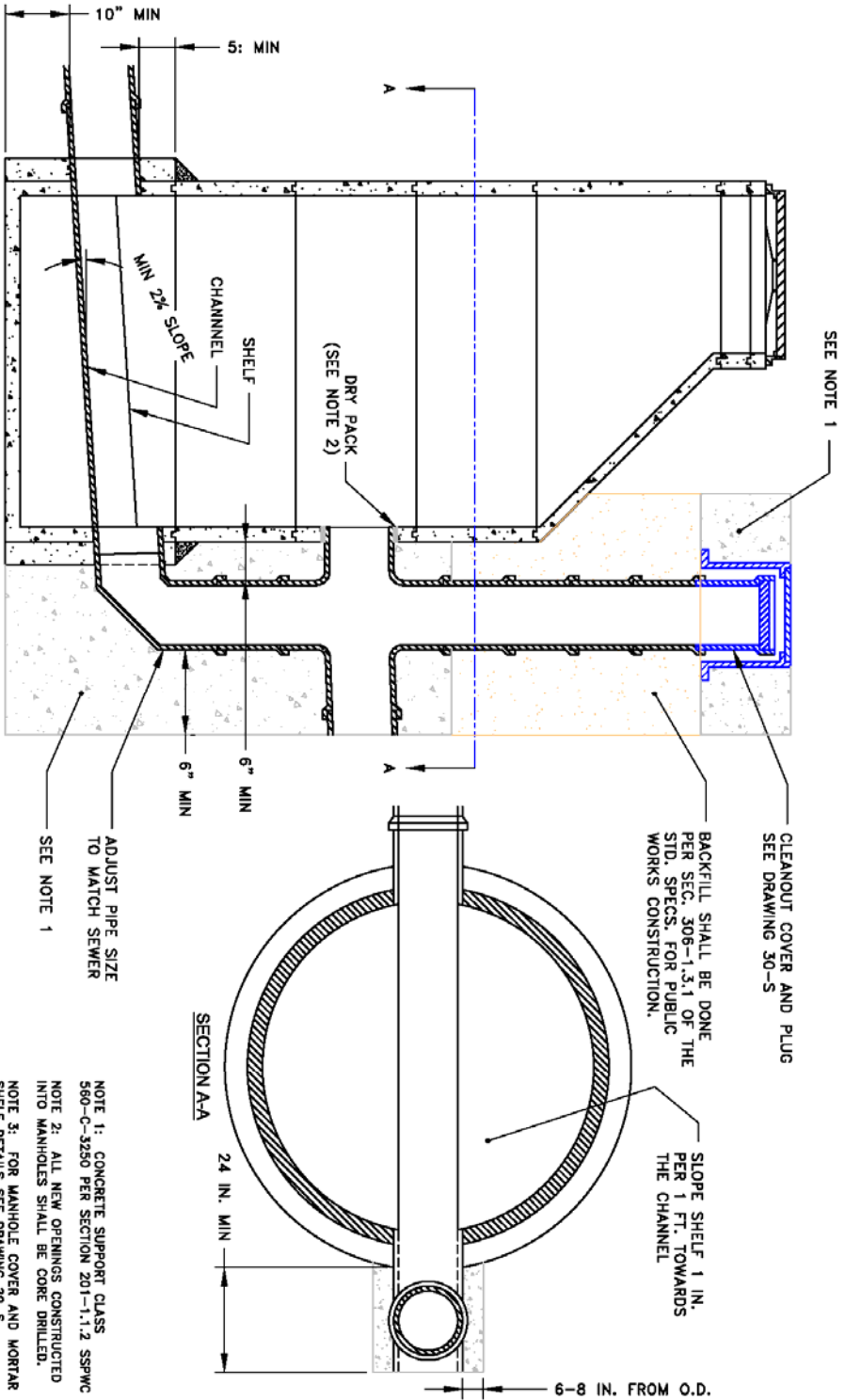
NOTE 3: MANHOLE COVER AND RING SHALL BE LOCKING TYPE CAPABLE OF WITHSTANDING H-20 HIGH LOADING.

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

CRESCENTA VALLEY WATER DISTRICT

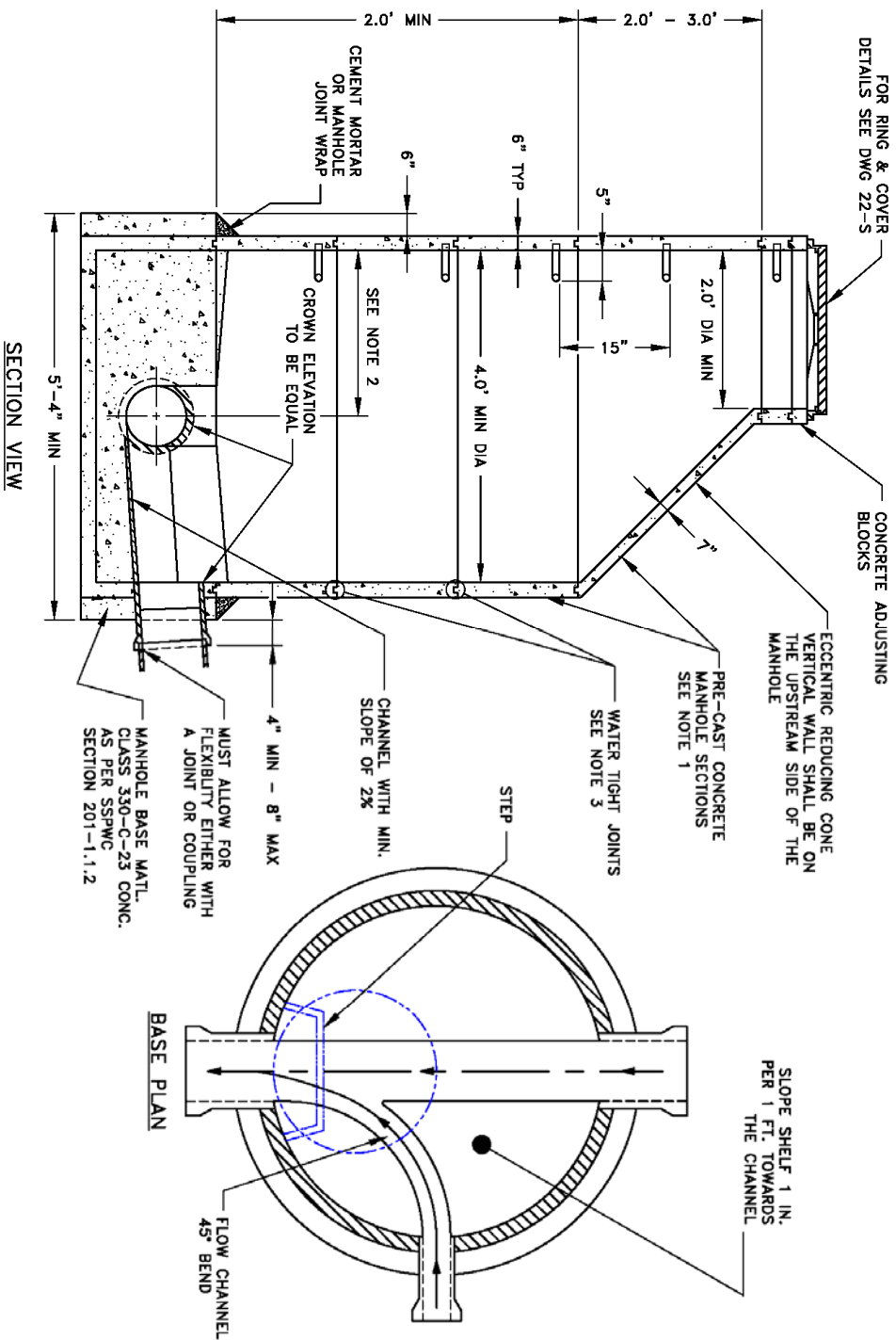


SCALE: NTS	STANDARD RING AND COVER	DATE: 03/14/2008	
DRAWN BY: B. YARED		JOB NO.	DWG NO.
APP'VD BY: D. GOULD		-	22-S



- NOTE 1: CONCRETE SUPPORT CLASS 580-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			
SCALE: NTS		DATE: 04/09/2008	
DRAWN BY: B YARED		JOB NO. -	
APP'VD BY: D GOULD		DWG NO. 21-S	

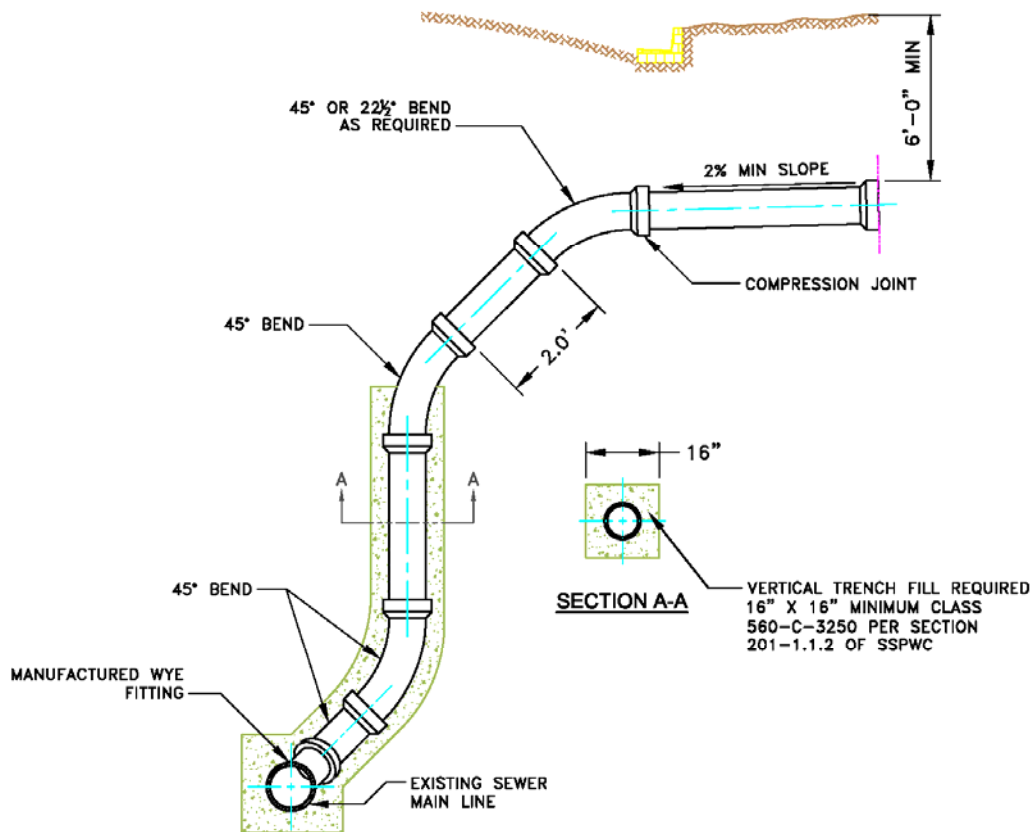


NOTE 1: NON-REINFORCED PRE-CAST MHS.
SHALL BE CLASS 580-C-3250 AS PER SECT.
201-1 OF THE SSPWC. REINFORCED PRE-CAST
MHS SHALL MEET ASTM C-478 SPECS.

NOTE 2: FOR OFFSET MHS 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		
SCALE: NTS		
DRAWN BY: B. YARED		
APP'VD BY: D. GOULD		
STANDARD 48" MANHOLE		DATE: 03/13/2008
JOB NO.	DWG NO.	
-	20-S	



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

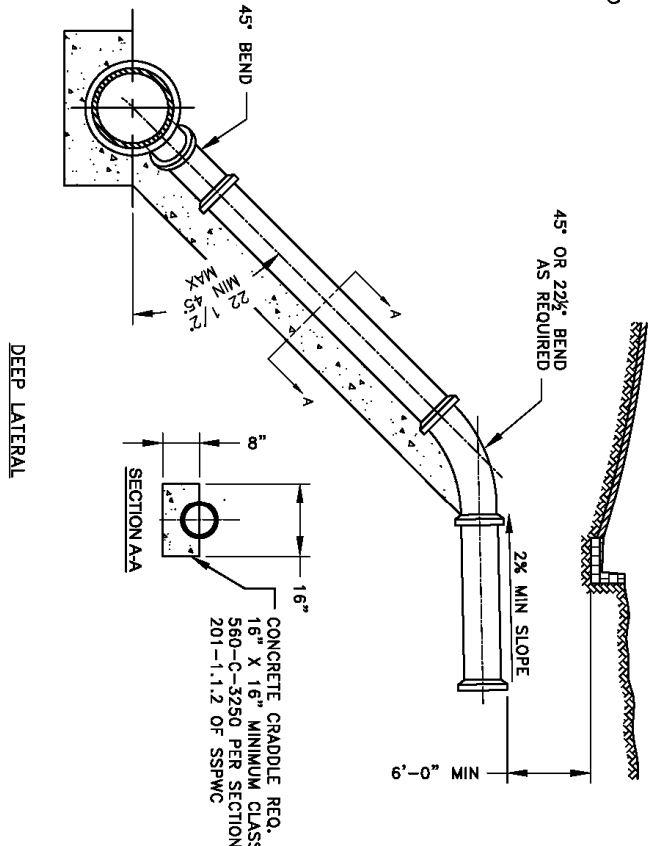
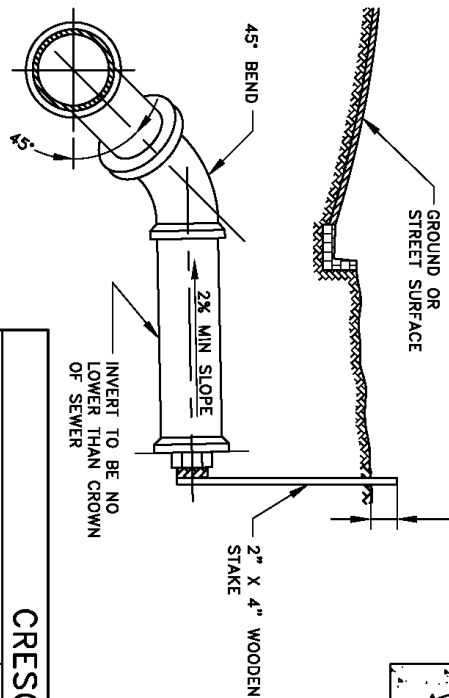
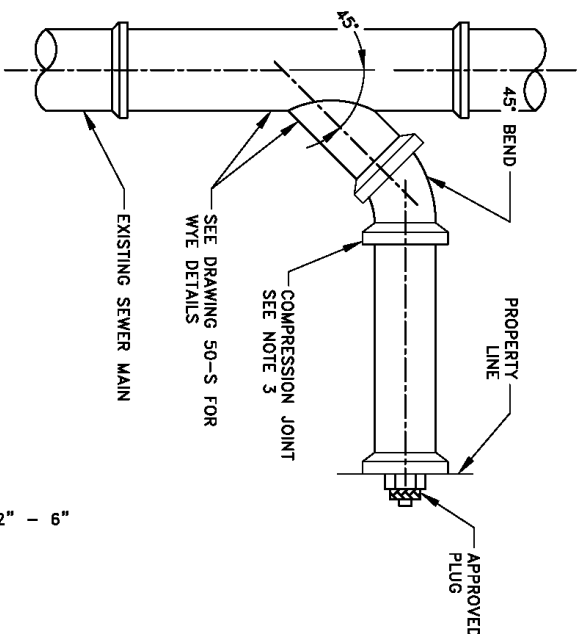
NOTE 3: SUITABLE TOILET FACILITIES, IN
COMPLIANCE WITH THE UNIFORM PLUMBING
CODE, MUST BE INSTALLED, AT THE OWNERS
EXPENSE, IN ANY PROPERTY THAT CONNECTS
TO THE PUBLICLY OWNED SEWER

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

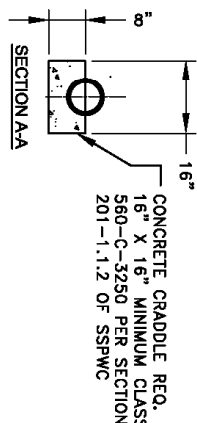
CRESCENTA VALLEY WATER DISTRICT



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



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

APPENDIX 6-A

SPILL ESTIMATION TABLE

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

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	6"
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	8"
5 1/2	204	0.294	
5 3/4	224	0.322	
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	10"
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	6"
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	8"
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	
6 1/2	419	0.603	
6 3/4	451	0.649	
7	483	0.696	10"
7 1/4	517	0.744	
7 1/2	551	0.794	
7 3/4	587	0.845	
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.

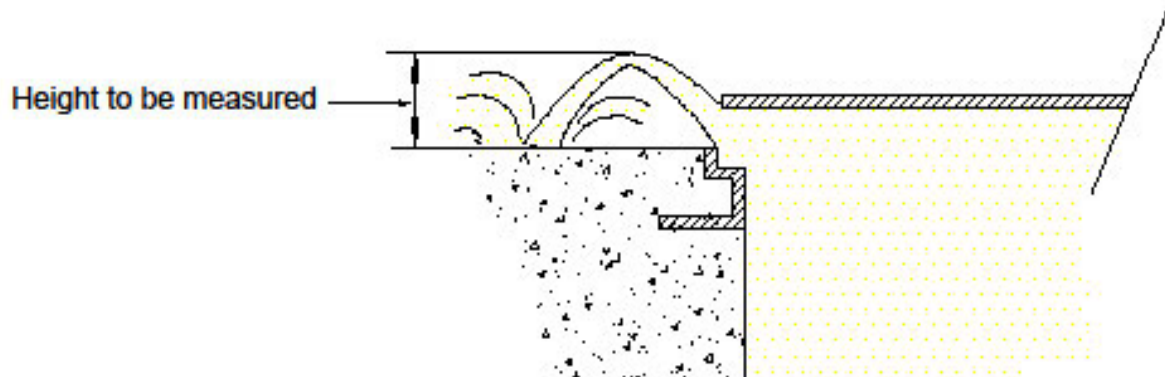
**Collection System Collaborative Benchmarking Group
Best Practices for Sanitary Sewer Overflow (SSO) Prevention and
Response Plan**

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		Min. Sewer size in which these flows are possible
	In gpm	In MGD	
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		Min. Sewer size in which these flows are possible
	In gpm	In MGD	
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.

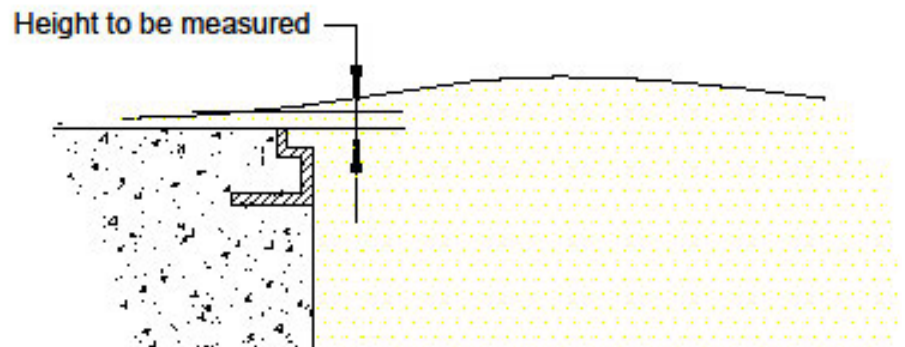
**Collection System Collaborative Benchmarking Group
Best Practices for Sanitary Sewer Overflow (SSO) Prevention and
Response Plan**

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.

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

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.

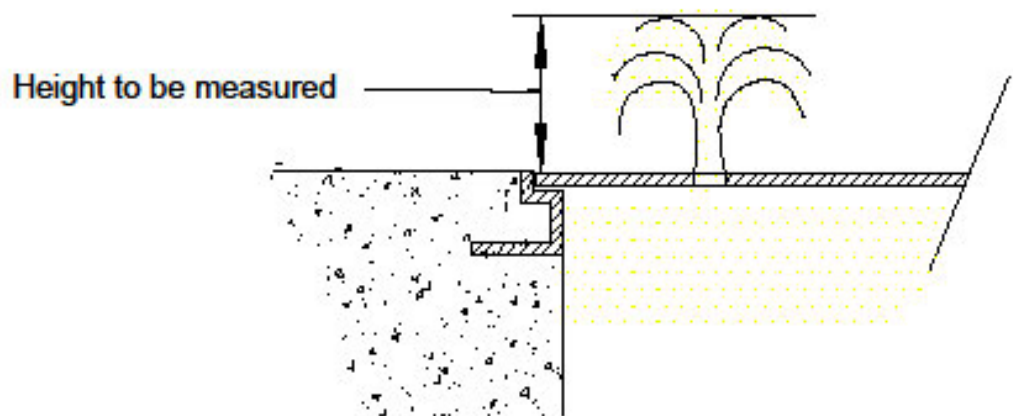
**Collection System Collaborative Benchmarking Group
Best Practices for Sanitary Sewer Overflow (SSO) Prevention and
Response Plan**

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 $h = v^2 / 2G$, where h is equal to the height of the overflow, v is equal to velocity, and G is equal to the acceleration of gravity.

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



City of San Diego
Metropolitan Wastewater Department
Wastewater Collection Division
619-594-4160

Flow Estimation Pictures



50 gpm



200 gpm



275 gpm

06/1/2014

Reference Sheet for Estimating Sewer Spills
from Overflowing Sewer Manholes
All estimates are calculated in gallons per minute (gpm)



25 gpm



125 gpm



250 gpm

01/09/2014
All photos were taken during a storm event using marked water from a splasher in coordination with the City of San Diego's Water Department.



City of San Diego
Metropolitan Wastewater Department



5 gpm



100 gpm



275 gpm

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 [REDACTED] at [REDACTED] or email at [REDACTED]

Sincerely,

[REDACTED]
Engineering Manager

JB: giw
cc: [REDACTED]

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 be 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 Vector Truck and Emergency Response Trailer.
6. **Sewer System Assessment**
 - A. **Construction Supervisor** to dispatch **Maintenance Crew** with Vector 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 aid 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 Vector Truck and Emergency Response Trailer.
9. **Sewer System Assessment**
 - A. **Construction Supervisor** to dispatch **Maintenance Crew** with Vector Truck and Emergency Responses 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 _____
Authorized Representative

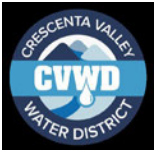
Title _____
Authorized Representative

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 than 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 #: _____

**Information gathered must be precise
for SSO investigation and reporting.**

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

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.

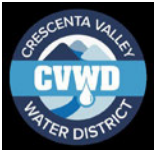
- ☐ Is it coming from a manhole? Yes ☐ No ☐
- ☐ Is it in or on a private residence? Yes ☐ No ☐
- ☐ Is it spilling into a storm drain? Yes ☐ No ☐
- ☐

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 25/26

TO BE COMPLETED WITH FUTURE WASTEWATER MASTER PLAN

APPENDIX 9-A

SSMP EVALUATION SUMMARY

Crescenta Valley Water District

Appendix 9-A

SSMP Evaluation Summary

	2007	2008	2009	2010	2011	2012	2013	2014	2015
Response Time (min)									
Average	20	No Spill Events	10	9	10	25	No Spill Events	15	No Spill Events
Maximum	20	No Spill Events	20	10	10	30	No Spill Events	20	No Spill Events
Number of SSO's									
Main Line Failure	1	0	2	1	0	1	0	2	0
Capacity Failure	0	0	0	0	0	0	0	0	0
FOG Related Spill	0	0	0	0	0	1	0	0	0
Private	0	0	0	3	1	1	0	0	0
Total	1	0	2	4	1	3	0	0	0
SSO volume (gals)									
Volume of Spill	400	No Spill Events	250	2100	600	2800	No Spill Events	1950	No Spill Events
Cleaning and Inspection									
Miles Cleaned	16	28	12	26	28	17	34		
Miles CCTV Inspected	12	26	11	4	10	1	3		

Crescenta Valley Water District

Appendix 9-A

SSMP Evaluation Summary

	2016	2017	2018	2019	2020	2021	2022	2023	2024
Response Time (min)									
Average	12	No Spill Events	No Spill Events	No Spill Events	No Spill Events	No Spill Events	20	No Spill Events	No Spill Events
Maximum	12	No Spill Events	No Spill Events	No Spill Events	No Spill Events	No Spill Events	20	No Spill Events	No Spill Events
Number of SSO's									
Main Line Failure	0	0	0	0	0	0	0	0	0
Capacity Failure	0	0	0	0	0	0	1	0	0
FOG Related Spill	1	0	0	0	0	0	0	0	0
Private	1	0	0	0	0	0	0	0	0
Total	1	0	0	0	0	0	1	0	0
SSO volume (gals)									
Volume of Spill	100	No Spill Events	No Spill Events	No Spill Events	No Spill Events	No Spill Events	385	No Spill Events	No Spill Events
Cleaning and Inspection									
Miles Cleaned	35	15	21	10	13	20	28.3	5.4	0
Miles CCTV Inspected	20	5	15	0	0	3	1.9	30.1	14.1

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 assess 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 Summary, 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 assess 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 of 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 of 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 Vector 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.

CRESCENTA VALLEY
WATER DISTRICT



SEWER SYSTEM MANAGEMENT PLAN

Appendix 10-A

Audit Report
February 2025

WDID# 4SSO10444

TABLE OF CONTENTS	CRESCENTA VALLEY WATER DISTRICT	I
		I
SEWER SYSTEM MANAGEMENT PLAN		I
PURPOSE		1
BACKGROUND		3
AUDIT OVERVIEW		5
EVALUATION OF SSMP EFFECTIVENESS		7
1.1	Sanitary Sewer Overflow Rate	7
1.2	Spills Impacting Surface Waters	7
1.3	Number and Size of Sewer Overflows	7
REVIEW OF EFFECTIVENESS OF SSMP ELEMENTS		9
1.4	Element 1 – Goal and Introduction	9
1.5	Element 2 – Organization	11
1.6	Element 3- Legal Authority	13
1.7	Element 4 – Operation and Maintenance Program	14
1.8	Elements 5 – Design and Performance Provisions	16
1.9	Element 6 – Spill Emergency Response Plan	17
1.10	Element 7 – Sewer Pipe Blockage Control Program Plan	18
1.11	Element 8 – System Evaluation, Capacity Assurance and Capital Improvements	20

1.12 Element 9 - Monitoring, Measurement, and Program modifications23

1.13 Element 10 – SSMP Internal Audits24

1.14 Element 11 – Communication Program.....25

STRENGTHS IMPLEMENTATION & ACCOMPLISHMENTS27

SSMP AUDIT FINDINGS SUMMARY 28

Table of Acronyms

Acronyms	Description
CCTV	Closed Circuit Television
CIP	Capital Improvement Plan
CIWQS	California Integrated Water Quality System
CVWD	Crescenta Valley Water District
FOG	Fats, Oils and Grease
GIS	Geographical Information System
LRO	Legally Responsible Official
SSMP	Sewer System Management Plan
WDID	Waste Discharger Identification
WDR	Waste Discharge Requirements

PURPOSE

Crescenta Valley Water District (CVWD) conducts an internal audit of the Sewer System Management Plan (SSMP) every two years. The purpose of the audit is to review the elements of the SSMP that are currently in place to evaluate its effectiveness and to determine the District's compliance with the SSMP requirements. During this review process, the task is to determine compliance, identify any deficiencies and areas for improvement. The objective is to improve and strengthen the document in hopes of optimizing the District's wastewater service and overall spill response performance.

The audit was conducted by CVWD's Engineering Department in conjunction with the Operations and Maintenance Department. The report covers the audit period beginning August 2, 2021, and ending August 2, 2024. This report was prepared pursuant to the requirements included in the State Water Resources Control Board Order No. 2022-0103-DWQ – Statewide General Waste Discharge Requirements for Sanitary Sewer Systems (General Order), per section 5.4. The requirements are:

The Enrollee shall conduct an internal audit of its Sewer System Management Plan, and implementation of its Plan, at a minimum frequency of once every three years. The audit must be conducted for the period after the end of the Enrollee's last required audit period. Within six months after the end of the required 3-year audit period, the Legally Responsible Official shall submit an audit report into the online CIWQS Sanitary Sewer System Database per the requirements in section 3.10 (Sewer System Management Plan Audit Reporting Requirements) of Attachment E1 of this General Order.

Audit reports submitted to the CIWQS Sanitary Sewer System Database will be viewable only to Water Boards staff.

The internal audit shall be appropriately scaled to the size of the system(s) and the number of spills. The Enrollee's sewer system operators must be involved in completing the audit. At minimum, the audit must:

Crescenta Valley Water District
Sewer System Management Plan Audit Report – August 2024

- *Evaluate the implementation and effectiveness of the Enrollee's Sewer System Management Plan in preventing spills;*
- *Evaluate the Enrollee's compliance with this General Order;*
- *Identify Sewer System Management Plan deficiencies in addressing ongoing spills and discharges to waters of the State; and*
- *Identify necessary modifications to the Sewer System Management Plan to correct deficiencies.*
- *The Enrollee shall submit a complete audit report that includes:*
- *Audit findings and recommended corrective actions;*
- *A statement that sewer system operators' input on the audit findings has been considered; and*
- *A proposed schedule for the Enrollee to address the identified deficiencies.*

This audit serves as the 2024 SSMP Audit for the Sewer Maintenance Department of Crescenta Valley Water District within the County of Los Angeles.

BACKGROUND

The Crescenta Valley Water District was formed as the Crescenta Valley County Water District on December 14, 1950 by the vote of local residents. Organized under the provisions of Division 12 of the State of California Water Code, the District operates as a political subdivision of the State. The term "County" was officially deleted from the District's name in 1996.

In the early 1950's, the newly-formed District purchased the assets and consolidated the infrastructure of several small private water companies then in existence. This was made possible by voter approval of two capital improvement bonds with a value of \$1.35 million. By 1953, with rapid growth in the Crescenta Valley and surrounding foothill communities, it became apparent that the local groundwater supply was not going to be sufficient to meet the increasing demand. Residents from La Crescenta to Altadena voted to form the Foothill Municipal Water District (FMWD) to purchase and distribute imported water from the Metropolitan Water District of Southern California (MWD). By 1955, the District was augmenting its local well water with MWD water from the Colorado River. In the 1960's, MWD increased its supply by also contracting for Northern California water with the completion of the State Water Project. This blend of imported water, which fluctuates from 40% to 60% groundwater versus imported water continues today as the source of supply for District customers.

In the 1970's, District officials were becoming aware of potential problems with private wastewater disposal systems (septic tanks) in the vicinity and potential impacts on the local groundwater supply. With federal funds available through the Clean Water Act, the District created two sewer assessment Districts in 1979 and sold bonds for the construction of 64 miles of mainline sewer and 27 miles of house-connection laterals. Approximately 75% of the \$35 million cost was satisfied with federal grant money and the remainder through direct assessment of local property owners. The project also included the purchase of treatment plant capacity from the City of Glendale and the construction of 7 miles of large-diameter sewer interceptor through the City of Glendale. All sewer system construction was completed in the mid-1980's.

The District is located in the Crescenta Valley area of Los Angeles County in the foothills of the

San Gabriel Mountains, between the San Fernando and San Gabriel valleys. The District provides water distribution and sewage collection within its boundaries to the unincorporated communities of La Crescenta, Montrose, and Verdugo City as well as a small portion of the City of La Canada-Flintridge.

The District serves an area of approximately 4 square miles in relatively steep terrain ranging from 1,200 feet to almost 3,000 feet above sea level. The customer base is primarily residential with some light commercial along Foothill Boulevard in La Crescenta and Honolulu Avenue in Montrose. The District currently provides water to over 8,000 accounts representing a population of approximately 35,000. Customer growth is steady although the Crescenta Valley area is nearly built-out. Residential growth is occurring through increased housing density in the multiple-unit zoned areas (primarily Montrose) as well as limited in-fill housing development on random parcels in La Crescenta.

The District has staff authorized to serve as onsite managers for the collection systems managed by the District. These staff include:

- James Lee, General Manager
- Carla Dillon, Director of Engineering and Operations
- Brook Yared, Engineering Manager
- Darlene Telles, Operations and Maintenance Manager
- Siaki Mortenson, Construction Supervisor

Each of these staff members is authorized to act on behalf of CVWD to serve as Legally Responsible Officials for the collection system.

AUDIT OVERVIEW

The audit’s goal is an internal review of the eleven (11) Elements of the Sewer System Management Plan at least once every three years. The CVWD Sewer System Management Plan was last updated in August 2023. This audit assesses the current state of the Sewer System Management Plan compliance with the State Water Resources Control Board Order No. 2022-0103-DWQ – Statewide General Waste Discharge Requirements for Sanitary Sewer Systems (General Order). CVWD intends to use the audit results to improve the Sewer System Management Plan compliance and performance of the collection system.

Crescenta Valley Water District conducted the Audit through a series of conversations with staff involved with implementation of tasks required by the General Order and an audit checklist of the eleven elements specific to CVWD’s sewer system. The audit team members supporting the audit process are listed below:

- Carla Dillon, Director of Engineering and Operations, Audit Support
- Brook Yared, Engineering Manager, Audit Support
- Christina Kopelman, Assistant Engineer, Lead Auditor

The Information was gathered over a period of approximately two weeks. Table 1 below documents the dates and participants of the SSMP Audit.

Table 1 SSMP Audit Participants

Date	General Order	Subject	Participants	Due Date
1/13/25	D.1 SSMP Management Plan Goal and Introduction	Introduction	Brook Yared Christina Kopelman	02/02/25
	D.2 Organization	Organization		

Crescenta Valley Water District
Sewer System Management Plan Audit Report – August 2024

Date	General Order	Subject	Participants	Due Date
	D.3 Legal Authorities	Legal Authorities		
	D.4 Operations and Maintenance Program	Operations and Maintenance		
	D.5 Design and Performance Provisions	Evaluation of Design and Performance		
	D.10 Internal Audit	Audit Report		
1/14/25	D.6 Spill Emergency Plan	Sewer System Overflow Response Plan	Brook Yared Christina Kopelman Darlene Telles	02/02/25
	D.9 Monitoring, Measurement and Program Modifications	Monitoring, Measurement and Program Modifications		
1/16/25	D.7 Sewage Pipe Blockage Control Program	Sewage Pipe blockage and Fats, Oils, and Grease	Brook Yared Christina Kopelman	02/02/25
1/20/25	D.6 Spill Emergency Plan	Overflow Emergency Response Plan	Brook Yared Christina Kopelman	02/02/25
	D.11 Communication Program	Communication Plan		
1/22/25	D.8 System Evaluation, Capacity Assurance and Capital Improvement	Capacity Assessment and Design Criteria	Brook Yared Christina Kopelman	02/02/25

Date	General Order	Subject	Participants	Due Date
1/28/25	D.4 Operations and Maintenance program	Sewer Maintenance schedule	Brook Yared Christina Kopelman	02/02/25

EVALUATION OF SSMP EFFECTIVENESS

The effectiveness of the sewer system management plan is evident in the consistently low rate of sewer system overflows, low average response times, and consistency in reporting spills of all sizes demonstrate the effectiveness of the SSMP.

1.1 SANITARY SEWER OVERFLOW RATE

Based on the overflow data trends since the last Audit in 2023, the SSMP program performs exceptionally well. During the Audit period, the District has had one sewer system overflow. The approximate overflow rate is 0.27 spills per 100 miles per year.

1.2 SPILLS IMPACTING SURFACE WATERS

This District contains and recovers overflows as close to the site of the overflow as possible. Once notified of a sewer spill, the response team deploys CVWD’s Emergency Response Trailer that is fully equipped with sandbags and berms to dam any nearby storm drain channels or catch basins. The emergency response trailer is also equipped with bleach sprayers and hoses/pumps to setup temporary bypass. CVWD’s Vactor truck is also available to be deployed to cleanup spills and return it to the sewer system after any blockages in the area have been cleared.

1.3 NUMBER AND SIZE OF SEWER OVERFLOWS

Spill events are categorized into a number rating system. Category 1 spills are considered the most severe because they reach surface waters. Category 4 are the least severe because they are less than 50 gallons and do not reach surface waters. The District’s one spill event in this time

frame was a Category 1 spill. Since the spill an emergency generator has been installed at the site to prevent future spills from making it to the nearby storm drain.

Spill Category	Definitions from Monitoring and Reporting Requirements (Order No. WQ 2022-0103-DWQ)
Category 1	A spill of any volume of sewage from or caused by a sanitary sewer system regulated under this General Order that results in a discharge to: • A surface water, including a surface water body that contains no flow or volume of water; or • A drainage conveyance system that discharges to surface waters when the sewage is not fully captured and returned to the sanitary sewer system or disposed of properly. Any spill volume not recovered from a drainage conveyance system is considered a discharge to surface water, unless the drainage conveyance system discharges to a dedicated stormwater infiltration basin or facility. A spill from an Enrollee-owned and/or operated lateral that discharges to a surface water is a Category 1 spill; the Enrollee shall report all Category 1 spills per section 3.1 of Attachment E1 (Notification, Monitoring, Reporting and Recordkeeping Requirements) of the General Order.
Category 2	A Category 2 spill is a spill of 1,000 gallons or greater, from or caused by a sanitary sewer system regulated under this General Order that does not discharge to a surface water. A spill of 1,000 gallons or greater that spills out of a lateral and is caused by a failure or blockage in the sanitary sewer system is a Category 2 spill.
Category 3	A Category 3 is a spill of equal to or greater than 50 gallons and less than 1,000 gallons, from or caused by a sanitary sewer system regulated under this General Order that does not discharge to a surface water. A spill of equal to or greater than 50 gallons and less than 1,000 gallons, that spills out of a lateral and is caused by a failure or blockage in the sanitary sewer system is a Category 3 spill.

**Spill
Category**

***Definitions from Monitoring and Reporting Requirements
(Order No. WQ 2022-0103-DWQ)***

Category 4 A Category 4 spill is a spill of less than 50 gallons, from or caused by a sanitary sewer system regulated under this General Order that does not discharge to a surface water.

A spill of less than 50 gallons that spills out of a lateral and is caused by a failure or blockage in the sanitary sewer system is a Category 4.

REVIEW OF EFFECTIVENESS OF SSMP ELEMENTS

Since the inception of the SSMP, the District has reviewed it focusing on evaluating the effectiveness of the SSMP and meeting requirements. An internal audit is completed every two years. The SSMP is re-certified every 5 years and filed in the online CIWQS database. The state Waste Discharge Requirements establish that all eleven (11) elements in the SSMP should be thoroughly reviewed for completeness. The following sections focus on evaluating the effectiveness of each element of the SSMP.

1.4 ELEMENT 1 – GOAL AND INTRODUCTION

The goal of the Sewer System Management Plan (Plan) is to provide a plan and schedule to: (1) properly manage, operate, and maintain all parts of the Enrollee's sanitary sewer system(s), (2) reduce and prevent spills, and (3) contain and mitigate spills that do occur.

The Plan must include a narrative Introduction section that discusses the following items:

Regulatory Context

The Plan Introduction section must provide a general description of the local sewer system management program and discuss Plan implementation and updates.

Sewer System Management Plan Update Schedule

The Plan Introduction section must include a schedule for the Enrollee to update the Plan, including the schedule for conducting internal audits. The schedule must include milestones for incorporation of activities addressing prevention of sewer spills.

Sewer System Asset Overview

The Plan Introduction section must provide a description of the Enrollee-owned assets and service area, including but not limited to:

- *Location, including District(s);*
- *Service area boundary;*
- *Population and community served;*
- *System size, including total length in miles, length of gravity mainlines, length of pressurized (force) mains, and number of pump stations and siphons;*
- *Structures diverting stormwater to the sewer system;*
- *Data management systems;*
- *Sewer system ownership and operation responsibilities between Enrollee and private entities for upper and lower sewer laterals;*
- *Estimated number or percent of residential, commercial, and industrial service connections; and*
- *Unique service boundary conditions and challenge(s).*

Additionally, the Plan Introduction section must provide reference to the Enrollee's up-to-date map of its sanitary sewer system, as required in section 4.1 (Updated Map of Sanitary Sewer System) of the General Order.

Audit Findings:

Regulatory Context

The introduction section is missing. Add an introduction and include a general description of the sewer management program as required by the reissued general order. Include a description of services the District provides and an overview of the sewer management program.

The section does not discuss plan updates as required by the reissued General Order. Update the Plan to include a description of the updates.

Sewer System Management Plan Update and Schedule

The Plan does not include an audit and an updated schedule as required by the reissued Order. Add a schedule of planned audits and updates.

Sewer System Asset Overview

The reissued order requires that the plan include an overview of the sewer system assets. The plan does not include an overview in this section. The overview must be relocated from a separate section and include the following:

- Location, including District(s);
- Service area boundary;
- Population and community served;
- System size, including total length in miles, length of gravity mainlines, length of pressurized (force) mains, and number of pump stations and siphons;
- Structures diverting stormwater to the sewer system;
- Data management systems;
- Sewer system ownership and operation responsibilities between Enrollee and private entities for upper and lower sewer laterals;
- Estimated number or percent of residential, commercial, and industrial service connections; and
- Unique service boundary conditions and challenge(s).

1.5 ELEMENT 2 – ORGANZIATION

General Order Requirements:

The Sewer System Management Plan (SSMP) must identify organizational staffing responsible and integral for implementing the local Sewer System Management Plan through an organizational chart or similar narrative documentation, that includes:

- *The name of the Legally Responsible Official as required in section 5.1 (Designation of a Legally Responsible Official) of this General Order;*
- *The position titles, telephone numbers, and email addresses for management, administrative, and maintenance positions responsible for implementing specific Sewer System Management Plan elements;*
- *Organizational lines of authority; and*

- *Chain of communication for reporting spills from receipt of complaint or other information, including the person responsible for reporting spills to the State and Regional Water Boards and other agencies, as applicable. (For example, County health officer, County environmental health agency, and State Office of Emergency Services.).*

Audit Findings:

The name of the Legally Responsible Official as required in section 5.1 (Designation of a Legally Responsible Official) of this General Order;

The Plan provides an organizational chart showing lines of authority. The organizational chart does not show the senior engineer position within the line of authority. As an LRO, the senior engineer and any other positions with that role should be identified within the chart. Update the organization chart to include a label on the organization chart showing which positions are serving as an LRO.

The position titles, telephone numbers, and email addresses for management, administrative, and maintenance positions responsible for implementing specific Sewer System Management Plan elements

The plan includes a table with position names and phone numbers. The staff directory provides names and contact information that is out-of-date. Update the staff directory with correct position names, phone numbers, and email address for positions responsible for implementing specific Sewer System Management Plan elements. The SSMP does not need to include contact information for the whole organization.

Organizational lines of authority

The organizational chart does not show the Senior Engineer position listed as an LRO. The LRO should be identified in the organizational chart.

Chain of communication for reporting spills

Update the sewer system overflow response and reporting organization chart to include communication with other cities when additional support is needed. Update the names, titles and contact details of the members.

1.6 ELEMENT 3- LEGAL AUTHORITY

General Order Requirements:

The Plan must include copies or an electronic link to the Enrollee's current sewer system use ordinances, service agreements and/or other legally binding procedures to demonstrate the Enrollee possesses the necessary legal authority to:

- Prevent illicit discharges into its sanitary sewer system from inflow and infiltration (I&I); unauthorized stormwater; chemical dumping; unauthorized debris; roots; fats, oils, and grease; and trash, including rags and other debris that may cause blockages;*
- Collaborate with storm agencies to coordinate emergency spill responses, ensure access to storm sewer systems during spill events, and prevent unintentional cross connections of sanitary sewer infrastructure to storm sewer infrastructure;*
- Require that sewers and connections be properly designed and constructed;*
- Ensure access for maintenance, inspection, and/or repairs for portions of the service lateral owned or maintained by the Public Agency;*
- Enforce any violation of its sewer ordinances, service agreements, or other legally binding procedures; and*
- Obtain easement accessibility agreements for locations requiring sewer system operations and maintenance, as applicable.*

Audit Findings:

Prevent illicit discharges into its sanitary sewer system from inflow and infiltration (I&I); unauthorized stormwater; chemical dumping; unauthorized debris; roots; fats, oils, and grease; and trash, including rags and other debris that may cause blockages;

The plan does not include a copy of the Districts Rules and Regulations. Update the SSMP to provide a copy or a link of the Districts Rules and Regulations, specifically Article 9, Rules Applicable to Existing Sewer Customers.

1.7

ELEMENT 4 – OPERATION AND MAINTENANCE PROGRAM

General Order Requirements:

The Sewer System Management Plan (SSMP) must include the items listed below that are appropriate and applicable to the Enrollee's system:

Updated Map of the Sanitary Sewer System

An up-to-date map(s) of the sanitary sewer system, and procedures for maintaining and providing State and Regional Water Board staff access to the map(s). The map(s) must show gravity line segments and manholes, pumping facilities, pressure pipes and valves, and applicable stormwater conveyance facilities within the sewer system service area boundaries

Preventive Operation and Maintenance Activities

A scheduling system and a data collection system for preventive operation and maintenance activities conducted by staff and contractors. The scheduling system must include:

- Inspection and maintenance activities;*
- Higher-frequency inspections and maintenance of known problem areas, including areas with tree root problems;*
- Regular visual and closed-circuit television (CCTV) inspections of manholes and sewer pipes.*

The data collection system must document data from system inspection and maintenance activities, including system areas/ components prone to root-intrusion potentially resulting in system backup and/or failure.

Training

- In-house and external training provided on a regular basis for sanitary sewer system operations and maintenance staff and contractors. The training must cover:*
- The requirements of the General Order;*
- The Spill Emergency Response Plan procedures and practice drills;*

Crescenta Valley Water District
Sewer System Management Plan Audit Report – August 2024

- *Skilled estimation of spill volume for field operators; and*
- *Electronic CIWQS reporting procedures for staff submitting data.*

Equipment Inventory

An inventory of sewer system equipment, including identification of critical replacement parts.

Audit Findings:

Inspection and maintenance activities.

An update to table Appendix 9-A is below to highlight the District's maintenance activities:

	2016	2017	2018	2019	2020	2021	2022	2023	2024
Response Time (min)									
Average	12	No Spill Events	No Spill Events	No Spill Events	No Spill Events	No Spill Events	20	No Spill Events	No Spill Events
Maximum	12	No Spill Events	No Spill Events	No Spill Events	No Spill Events	No Spill Events	20	No Spill Events	No Spill Events
Number of SSO's									
Main Line Failure	0	0	0	0	0	0	0	0	0
Capacity Failure	0	0	0	0	0	0	1	0	0
FOG Related Spill	1	0	0	0	0	0	0	0	0
Private	1	0	0	0	0	0	0	0	0
Total	1	0	0	0	0	0	1	0	0
SSO volume (gals)									
Volume of Spill	100	No Spill Events	No Spill Events	No Spill Events	No Spill Events	No Spill Events	385	No Spill Events	No Spill Events
Cleaning and Inspection									

Miles Cleaned	35	15	21	10	13	20	28.3	5.4	0
Miles CCTV Inspected	20	5	15	0	0	3	1.9	30.1	14.1

Regular visual and closed-circuit television (CCTV) inspections of manholes and sewer pipes.

Update the plan to include an accelerated cleaning schedule to catch up on the cleaning schedule. Staff is behind schedule on the 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 2023. Since 2023, Phase 1 has been completed, Phase 2 is in progress, and Phase 3 is projected to be completed in 2026.

Training

Update the SSMP to document training on electronic CIWQS reporting procedures for all staff entering data into the database, as required by the reissued general order. Include Mock sewer overflow in SSMP.

1.8 ELEMENTS 5 – DESIGN AND PERFORMANCE PROVISIONS

General Order Requirements:

The Plan must include the following items as appropriate and applicable to the Enrollee's system:

Updated Design Criteria and Construction Standards and Specifications

Updated design criteria and construction standards and specifications for the construction, installation, repair, and rehabilitation of existing and proposed infrastructure components, including but not limited to pipelines, pump stations and other appurtenances. If existing design criteria and construction standards are deficient to address the necessary component-specific hydraulic capacity as specified in Attachment D, Section 8 (System Evaluation, Capacity Assurance and Capital Improvements) of the General Order, the procedures must include component-specific evaluation of the design criteria.

Procedures and Standards

Procedures and standards for inspecting and testing the installation of newly constructed, installed, repaired, and rehabilitated sewers, pumps, and other appurtenances.

Audit Findings:

The District has standard plans and specifications for the construction of sanitary sewers and appurtenances to ensure that sewer lines and connections are properly designed and constructed within unincorporated areas. All specifications reference standard drawings and incorporate the “Greenbook” Standard Specifications for Public Works Construction. No updates are necessary in this section.

1.9 ELEMENT 6 – SPILL EMERGENCY RESPONSE PLAN

General Order Requirements:

The Plan must include an up-to-date Spill Emergency Response Plan to ensure prompt detection and response to spills to reduce spill volumes and collect information for prevention of future spills.

The Spill Emergency Response Plan must include procedures to:

- Notify primary responders, appropriate local officials, and appropriate regulatory agencies of a spill in a timely manner;*
- Notify other potentially affected entities (for example, health agencies, water suppliers, etc.) of spills that potentially affect public health or reach waters of the State;*
- Comply with the notification, monitoring and reporting requirements of this General Order, State law and regulations, and applicable Regional Water Board Orders;*
- Ensure that appropriate staff and contractors implement the Spill Emergency Response Plan and are appropriately trained;*
- Address emergency system operations, traffic control and other necessary response activities;*

- *Contain a spill and prevent/minimize discharge to waters of the State or any drainage conveyance system;*
- *Minimize and remediate public health impacts and adverse impacts on beneficial uses of waters of the State;*
- *Remove sewage from the drainage conveyance system;*
- *Clean the spill area and drainage conveyance system in a manner that does not inadvertently impact beneficial uses in the receiving waters;*
- *Implement technologies, practices, equipment, and interagency coordination to expedite spill containment and recovery;*
- *Implement pre-planned coordination and collaboration with storm drain agencies and other utility agencies/departments prior, during, and after a spill event;*
- *Conduct post-spill assessments of spill response activities;*
- *Document and report spill events as required in this General Order; and*
- *Annually, review and assess effectiveness of the Spill Emergency Response Plan, and update the Plan as needed.*

Audit Findings:

District staff are available 24 hours a day, 7 days a week to respond to emergency situations. Staff's average response time is less than 30 minutes. Update the SSMP to include the District's official webpage for the public to report urgent problems via the link. Change the webpage to include "questions, feedback, service requests, or other needs".

<https://www.cvwd.com/contact-us>

Update the plan to include mock sewer emergency response plan training records. The documents contain a detailed approach to training staff on the proper procedures to ensure an effective spill recovery.

1.10

ELEMENT 7 – SEWER PIPE BLOCKAGE CONTROL PROGRAM PLAN

General Order Requirements:

The Sewer System Management Plan must include procedures for the evaluation of the Enrollee's service area to determine whether a sewer blockage control program is needed to control fats, oils, grease, rags and debris. If the Enrollee determines that a program is not needed, the enrollee shall provide justification in its Plan for why a program is not needed.

The procedure must include, at minimum:

- An implementation plan and schedule for a public education and outreach program that promotes proper disposal of pipe-blocking substances.*
- A plan and schedule for the disposal of pipe-blocking substances generated within the sanitary sewer system service area. This may include a list of acceptable disposal facilities and/or additional facilities needed to adequately dispose of substances generated within a sanitary sewer system service area;*
- The legal authority to prohibit discharges to the system and identify measures to prevent spills and blockages;*
- Requirements to install grease removal devices (such as traps or interceptors), design standards for the removal devices, maintenance requirements, best management practices requirements, recordkeeping and reporting requirements;*
- Authority to inspect grease producing facilities, enforcement authorities, and whether the Enrollee has sufficient staff to inspect and enforce the fats, oils, and grease ordinance;*
- An identification of sanitary sewer system sections subject to fats, oils, and grease blockages and establishment of a cleaning schedule for each section; and*
- Implementation of source control measures for all sources of fats, oils, and grease reaching the sanitary sewer system for each section identified above.*

Audit Findings:

Update the plan with the new section title "Sewer Pipe Blockage Control Program."

The public outreach program described in the Plan is outdated. Update the plan to provide an updated description of the District's implementation and scheduling of public outreach efforts.

Update the plan to describe existing procedures used to identify the source of fats, oils and grease sites, and how these sections are being tracked. Update the Industrial Waste Management Division (IWMD's) contact information and title.

1.11 ELEMENT 8 – SYSTEM EVALUATION, CAPACITY ASSURANCE AND CAPITAL IMPROVEMENTS

General Order Requirements:

The Plan must include procedures and activities for:

- *Routine evaluation and assessment of system conditions;*
- *Capacity assessment and design criteria;*
- *prioritization of corrective actions, and;*
- *A capital improvement plan.*

System Evaluation and Condition Assessment

The Plan must include procedures to:

- Evaluate the sanitary sewer system assets utilizing the best practices and technologies available;
- Identify and justify the amount (percentage) of its system for its condition to be assessed each year;

Prioritize the condition assessment of system areas that:

- Hold a high level of environmental consequences of vulnerable to collapse, failure, blockage, capacity issues, or other system deficiencies;
- Are located within the vicinity of surface waters, steep terrain, high groundwater elevations, and environmentally sensitive areas;

- *Are within the vicinity of receiving water with a bacterial-related impairment on the most current Clean Water Act section 303(d) List;*

Assess the system conditions using visual observation, video surveillance and/or other comparable system inspection methods;

Utilize observations/evidence of system conditions that may contribute to exiting of sewage from the system which can reasonably be expected to discharge into a water of the State;

Maintain documents and recordkeeping of system evaluation and condition assessment inspections and activities; and

Identify system assets vulnerable to direct and indirect impacts of climate change, including but not limited to: sea level rise; flooding and/or erosion due to increased storm volumes, frequency, and/or intensity; wildfires; and increased power disruptions.

Capacity Assessment and Design Criteria

The Plan must include procedures to identify system components that are experiencing or contributing to spills caused by hydraulic deficiency and/or limited capacity, including procedures to identify the appropriate hydraulic capacity of key system elements for:

- *Dry-weather peak flow conditions that cause or contributes to spill events;*
- *The appropriate design storm(s) or wet weather events that causes or contributes to spill events;*
- *The capacity of key system components; and*
- *Identify the major sources that contribute to the peak flows associated with sewer spills.*
- *The capacity assessment must consider:*
- *Data from existing system condition assessments, system inspections, system audits, spill history, and other available information;*

- *Capacity of flood-prone systems subject to increased infiltration and inflow, under normal local and regional storm conditions;*
- *Capacity of systems subject to increased infiltration and inflow due to larger and/or higher-intensity storm events as a result of climate change;*
- *Increases of erosive forces in canyons and streams near underground and aboveground system components due to larger and/or higher-intensity storm events;*
- *Capacity of major system elements to accommodate dry weather peak flow conditions, and updated design storm and wet weather events; and*
- *Necessary redundancy in pumping and storage capacities.*

Prioritization of Corrective Action

The findings of the condition assessments and capacity assessments must be used to prioritize corrective actions. Prioritization must consider the severity of the consequences of potential spills.

Capital Improvement Plan

The capital improvement plan must include the following items:

- *Project schedules including completion dates for all portions of the capital improvement program.*
- *Internal and external project funding sources for each project; and*
- *Joint coordination between operation and maintenance staff, and engineering staff/consultants during planning, design, and construction of capital improvement projects; and interagency coordination with other impacted utility agencies.*

Audit Findings:

Update the SSMP to Include the Capital Improvement Program and Business Risk Vulnerability Assessments from wastewater master plan. Include the completed hydraulic model. Update sections related to the flows and modeling to reference new SWMM based model.

1.12 ELEMENT 9 - MONITORING, MEASUREMENT, AND PROGRAM MODIFICATIONS

General Order Requirements:

The Plan must include an Adaptive Management section that addresses Plan implementation effectiveness and the steps for necessary Plan improvement, including:

- Maintaining relevant information, including audit findings, to establish and prioritize appropriate Plan activities.
- Monitoring the implementation and measuring the effectiveness of each Plan Element.
- Assessing the success of the preventive operation and maintenance activities.
- Updating Plan procedures and activities, as appropriate, based on results of monitoring and performance evaluations; and
- Identifying and illustrating spill trends, including spill frequency, locations and estimated volumes.

Audit Findings:

Update the plan to include monitoring information such as performance monitoring through the CIWQS database administered by the state and regional Water Quality Control Boards to track information under the statewide general order. Include a link to the public reports portal at:

https://www.waterboards.ca.gov/water_issues/programs/ciwqs/publicreports.html#sso

The District no longer has a Regulatory and Public Affairs Manager performing plan monitoring and evaluation. Update the plan to show the changes. The plan does not summarize how the District is monitoring the implementation and measuring the effectiveness of each plan element. Update the plan to include a checklist or a table to track each element's effectiveness. Revise table 9-1 to include Element 11, Communication.

1.13 ELEMENT 10 – SSMP INTERNAL AUDITS

General Order Requirement:

The Plan shall include internal audit procedures, appropriate to the size and performance of the system, for the Enrollee to comply with Specification Section 5.4 (Sewer System Management Plan Audits) of the General Order.

Specification 5.4 – Sewer System Management Plan Audits

The Enrollee shall conduct an internal audit of its Sewer System Management Plan, and implementation of its Plan, at a minimum frequency of once every three years. The audit must be conducted for the period after the end of the Enrollee's last required audit period. Within six months after the end of the required 3-year audit period, the Legally Responsible Official shall submit an audit report into the online CIWQS Sanitary Sewer System Database per the requirements in section 3.10 (Sewer System Management Plan Audit Reporting Requirements) of Attachment E1 of this General Order.

Audit reports submitted to the CIWQS Sanitary Sewer System Database will be viewable only to Water Boards staff.

The internal audit shall be appropriately scaled to the size of the system(s) and the number of spills. The Enrollee's sewer system operators must be involved in completing the audit. At minimum, the audit must:

- *Evaluate the implementation and effectiveness of the Enrollee's Sewer System Management Plan in preventing spills;*
- *Evaluate the Enrollee's compliance with this General Order;*
- *Identify Sewer System Management Plan deficiencies in addressing ongoing spills and discharges to waters of the State; and*
- *Identify necessary modifications to the Sewer System Management Plan to correct deficiencies.*
- *The Enrollee shall submit a complete audit report that includes:*
- *Audit findings and recommended corrective actions;*
- *A statement that sewer system operators' input on the audit findings has been considered; and*
- *A proposed schedule for the Enrollee to address the identified deficiencies.*

Audit Findings:

The audit schedule described in the SSMP is still based on a 2-year audit cycle. Update the SSMP audit schedule to reflect audit requirements from the 2022 General Order.

1.14 ELEMENT 11 – COMMUNICATION PROGRAM

General Order Requirements:

The Plan must include procedures for the Enrollee to communicate with the public for:

- Spills and discharges resulting in closures of public areas, or that enter a source of drinking water, and
- The development, implementation, and update of its Plan, including opportunities for public input to Plan implementation and updates.

Owners/operators of systems that connect into the Enrollee's system, including satellite systems, for:

- System operation, maintenance, and capital improvement-related activities.

Audit Findings:

Communication plan to inform the public in the event of spills and discharges resulting in closures of public areas, or that enter a source of drinking water.

The District's communication plan to inform the public in the event of a spill or discharge where the public may be exposed to discharge, such as public parks, the sewer spill response team assesses the extent of the spill and posts signage around the impacted areas. The Plan does not include the communication procedure to notify the public about spills and discharges. Update the plan to include a communication procedure to notify the public of spills and discharges that result in public area closures or that enter a source of drinking water.

Communication with the public on the development implementation, and update of its Plan, including opportunities for public input to Plan implementation and updates.

The District routinely updates and maintains a Wastewater webpage on the Districts website:

<https://www.cvwd.com/wastewater/2021-sewer-system-management-plan-ssmp>

The website provides the public with the necessary information associated with the SSMP and its program implementation:

- Latest version of the SSMP
- Homeowner responsibilities

The wastewater page does not include an SSMP audit report. Update the plan to include a link to the audit report.

The District does not provide a "Feedback" link on the Wastewater page to provide the public with opportunities for public input to plan implementation and updates. Update the plan to include a link with a phone number for inquiries and a mailing address for written inquiries.

STRENGTHS IMPLEMENTATION & ACCOMPLISHMENTS

Strengths and Implementation accomplishments of the SSMP and program implementation to support continued growth and success are listed in the table below.

Table 5: Strengths and Implementation Accomplishments

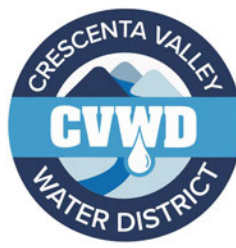
SSMP	Strengths and Implementation Accomplishments
Overall	Overall, the Districts’ sewer overflow performance is satisfactory. It fulfils expectations and has a very low sewer system overflow rate per 100 miles per year.
Organization	Multiple staff members with the proper training to manage SSO events.
Legal Authorities	Legal Authorities to enforce compliance
Operation and Maintenance Program	The District installed four (4) sewer manhole smart covers. Field maps is now available on mobile devises and tablets to access as-builts in the field.
Communication Program	The Public outreach team runs and maintains a webpage as well as an emergency alert notification system to push notifications when necessary.

SSMP AUDIT FINDINGS SUMMARY

During the audit, several findings were identified. The table below summarizes the audit findings.

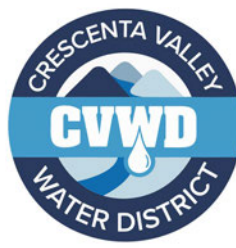
SSMP ELEMENT	AUDIT FINDING	UPDATE DEADLINE
1. SSMP Goal and Introduction	Update Introduction section. Add a schedule of plan audits and updates.	8/2/2025
2. Organization	Update the organization chart to include a label on the organization chart showing which positions are serving as an LRO.	8/2/2025
3. Legal Authority	Update the SSMP to provide a copy or a link of the Districts Rules and Regulations, specifically Article 9, Rules Applicable to Existing Sewer Customers.	8/2/2025
4. Operation and Maintenance Program	Update Table 9.1. Update the plan to include an accelerated cleaning schedule.	8/2/2025
5. Design and Performance Provisions	No updates are necessary in this section.	8/2/2025
6. Spill Emergency Response Plan	Update the SSMP to include the District's official webpage for the public to report urgent problems. Update the plan to include mock sewer emergency response plan training records	8/2/2025
7. Sewer Pipe Blockage Control Program Plan	Update the plan with the new section title "Sewer Pipe Blockage Control Program".	8/2/2025
8. System Evaluation,	Update the SSMP to Include the Capital Improvement Program and Business Risk Vulnerability Assessments	8/2/2025

SSMP ELEMENT	AUDIT FINDING	UPDATE DEADLINE
Capacity Assurance and Capital Improvements	from wastewater master plan. Include the completed hydraulic model.	
9. Monitoring, Measurement, and Program Modifications	Update the plan to include monitoring information such as performance monitoring through the CIWQS database. Revise table 9-1 to include Element 11, Communication.	8/2/2025
10. SSMP Audits	The audit schedule described in the SSMP is still based on a 2-year audit cycle. Update the SSMP audit schedule to reflect audit requirements from the 2022 General Order.	8/2/2025
11. Communication Program	Update the plan to include a communication procedure to notify the public of spills and discharges that result in public area closures or that enter a source of drinking water. Update the plan to include a link to the audit report. Update the plan to include a link with a phone number for inquiries and a mailing address for written inquiries	8/2/2025



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
	Section 2: Organization	
	Section 3: Legal Authority	
	Section 4: Operations and Maintenance	
	Section 6: Emergency Response	
August 2, 2012	Appendix 2-A: Organizational Charts	Updated 7/15/2012
	Appendix 5-A: Design and Construction Manual	
	Appendix 6-C: Emergency Response Action Plans	
	Appendix 9-A: SSO summary	
	Appendix 10-A: Audit Summary	
	Section 2: Organization	
	Section 4: Operations and Maintenance	
	Section 6: Emergency Response	
August 2, 2014	Appendix 2-A & 2-B: Organizational Charts	Proposed – 7/18/2014
	Appendix 9-A: SSO summary	
	Appendix 10-A: Audit Summary	
	Section 2: Organization	
	Section 4: Operations and Maintenance	
	Section 6: Emergency Response	
August 2, 2016	Appendix 2-A & 2-B: Organizational Charts	Updated – 12/7/2016
	Appendix 9-A: SSO summary	
	Appendix 10-A: Audit Summary	
August 2, 2019	Section 2: Organization	Updated – 7/23/2019
	Section 4: Operations and Maintenance	



	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
August 2, 2024	Section 1: Introduction Section 2: Organization Section 3: Legal Authority Section 4: Operations and Maintenance Section 6: Spill Emergency Response Plan Section 7: Sewer Pipe blockage Control Section 8: System Evaluation Section 9: Monitoring, Measurement, Appendix 2-A & 2-B: Organizational Charts Appendix 9-A: SSO summary Appendix 10-A: Audit Summary	Updated – 7/14/2025

PRODUCER INSURANCE BROKER OR COMPANY NAME AND CONTACT INFORMATION, INCLUDING EMAIL ADDRESS	THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW.	
	INSURERS AFFORDING COVERAGE	NAIC #
INSURED COMPANY NAME AND CONTACT INFORMATION, INCLUDING A VALID EMAIL ADDRESS	INSURER A:	
	INSURER B:	
	INSURER C:	
	INSURER D:	
	INSURER E:	

COVERAGES

THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. AGGREGATE LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR ADD'L LTR	INSRD	TYPE OF INSURANCE	POLICY NUMBER	POLICY EFFECTIVE DATE (MM/DD/YY)	POLICY EXPIRATION DATE (MM/DD/YY)	LIMITS
		GENERAL LIABILITY ☐ COMMERCIAL GENERAL LIABILITY ☐ CLAIMS MADE ☐ OCCUR GEN'L AGGREGATE LIMIT APPLIES PER: ☐ POLICY ☐ PRO-JECT ☐ LOC				EACH OCCURRENCE \$ DAMAGE TO RENTED PREMISES (Ea occurrence) \$ MED EXP (Any one person) \$ PERSONAL & ADV INJURY \$ GENERAL AGGREGATE \$ PRODUCTS - COMP/OP AGG \$
		AUTOMOBILE LIABILITY ☐ ANY AUTO ☐ ALL OWNED AUTOS ☐ SCHEDULED AUTOS ☐ HIRED AUTOS ☐ NON-OWNED AUTOS				COMBINED SINGLE LIMIT (Ea accident) \$ BODILY INJURY (Per person) \$ BODILY INJURY (Per accident) \$ PROPERTY DAMAGE (Per accident) \$
		GARAGE LIABILITY ☐ ANY AUTO				AUTO ONLY - EA ACCIDENT \$ OTHER THAN EA ACC \$ AUTO ONLY: AGG \$
		EXCESS/UMBRELLA LIABILITY ☐ OCCUR ☐ CLAIMS MADE DEDUCTIBLE RETENTION \$				EACH OCCURRENCE \$ AGGREGATE \$ \$ \$ \$
		WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? If yes, describe under SPECIAL PROVISIONS below				WC STATU-TORY LIMITS ☐ OTH-ER ☐ E.L. EACH ACCIDENT \$ E.L. DISEASE - EA EMPLOYEE \$ E.L. DISEASE - POLICY LIMIT \$
		OTHER				

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES / EXCLUSIONS ADDED BY ENDORSEMENT / SPECIAL PROVISIONS

Please provide specific details such as project location, type of work, application tracking number, permit number, etc...

CERTIFICATE HOLDER

COUNTY OF LOS ANGELES
DEPARTMENT OF PUBLIC WORKS
LAND DEVELOPMENT DIVISION
P. O. BOX 1460
ALHAMBRA, CA 91802-1460
ATTENTION: _____

CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, THE ISSUING INSURER SHALL MAIL 30 DAYS WRITTEN NOTICE TO THE CERTIFICATE HOLDER.

AUTHORIZED REPRESENTATIVE

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

ADDITIONAL INSURED – STATE OR GOVERNMENTAL AGENCY OR SUBDIVISION OR POLITICAL SUBDIVISION – PERMITS OR AUTHORIZATIONS

This endorsement modifies insurance provided under the following:

COMMERCIAL GENERAL LIABILITY COVERAGE PART

SCHEDULE

State Or Governmental Agency Or Subdivision Or Political Subdivision:

The County of Los Angeles and public entity or Special District for which the Los Angeles County Board of Supervisors is the Governing Body, and their Agents, Officers and Employees, shall be Additional insured(s) while acting within the scope of their duties against all claims arising out of or in connection with the work to be performed.

Information required to complete this schedule, if not shown above, will be shown in the Declarations.

SAMPLE

Section II – Who Is An Insured is amended to include as an insured any state or governmental agency or subdivision or political subdivision shown in the Schedule, subject to the following provisions:

1. This insurance applies only with respect to operations performed by you or on your behalf for which the state or governmental agency or subdivision or political subdivision has issued a permit or authorization.
2. This insurance does not apply to:
 - a. "Bodily injury", "property damage" or "personal and advertising injury" arising out of operations performed for the federal government, state or municipality; or
 - b. "Bodily injury" or "property damage" included within the "products-completed operations hazard".

CRESCENTA VALLEY WATER DISTRICT

BOARD OF DIRECTORS - STAFF REPORT

Action Item No. 6
July 22, 2025

To: Honorable President and Members of the Board of Directors
From: Carla Dillon, P.E. – Director of Engineering and Operations
Subject: Request Authorization to Apply for a Seismic Vulnerability Grant

AGENDA ITEM:

Consideration and motion to authorize the General Manager to apply for a grant to determine the seismic vulnerability of all CVWD reservoirs.

BACKGROUND:

In the process of working with FEMA and the California Governor's Office of Emergency Services (Cal OES) for disaster recovery (wildfire-related), the District learned of the Hazard Mitigation Grant Program (HMGP) and the types of work funded for other water districts. District staff reached out to other water districts and learned that sizable grants had been awarded for assessing the vulnerability of reservoirs and subsequent construction of potential remediatory improvements. With this information and CalOES's guidance, staff submitted a preliminary application.

Following the preliminary application, CalOES reviewed the initial submittal to determine if the District should proceed with a full application and provide feedback. CalOES gave CVWD the notice to proceed with submitting for the full application if desired. The CalOES feedback also recommended that CVWD increase the requested amount, based on their experience with successful grantees, to \$1M. This was significantly higher than initially assumed.

DISCUSSION:

The objective for this project would be to complete a seismic vulnerability assessment of the District's 17 reservoirs, along with 60% or more engineering design, benefit-cost analysis, and other elements, as necessary, to apply for future project sub-application. While the District previously installed seismic valves on 10 reservoirs, there are other elements that may need to be addressed for robust seismic tolerance, and advances or code changes may have occurred since the valve installations. Knowing the recommended improvements would aid in prioritizing capital projects and ultimately in resiliency following an earthquake.

The grant, if awarded, would provide 70% reimbursement after completion of the project.

FUNDING AVAILABILITY:

This project was not budgeted for FY 25/26.

RECOMMENDATION:

Staff recommends that the Board authorize the General Manager to submit an application for funding of a seismic vulnerability assessment for the District's 17 reservoirs.

Prepared by:

A handwritten signature in cursive script, reading "Carla Dillon", is written over a horizontal line.

Carla Dillon

Director of Engineering & Operations

Attachments: none

G:\Management\Board Meeting Staff Reports\2025\07-22-25 Staff Report - Reservoir Seismic Vulnerability.docx



IMPORTANT ANNOUNCEMENT

Effective July 1, 2025, CVWD has transitioned from bi-monthly billing to monthly billing to provide more timely information to all customers.

www.cvwd.com
customerservice@cvwd.com
818-248-3925



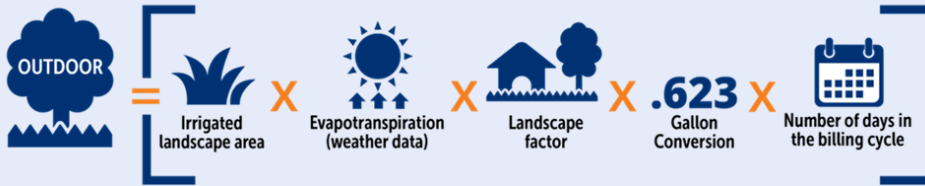
BUDGET-BASED RATES EXPLAINED



For single-family customers, indoor water budgets and wastewater charges are based on household size. The default household size is four (4).



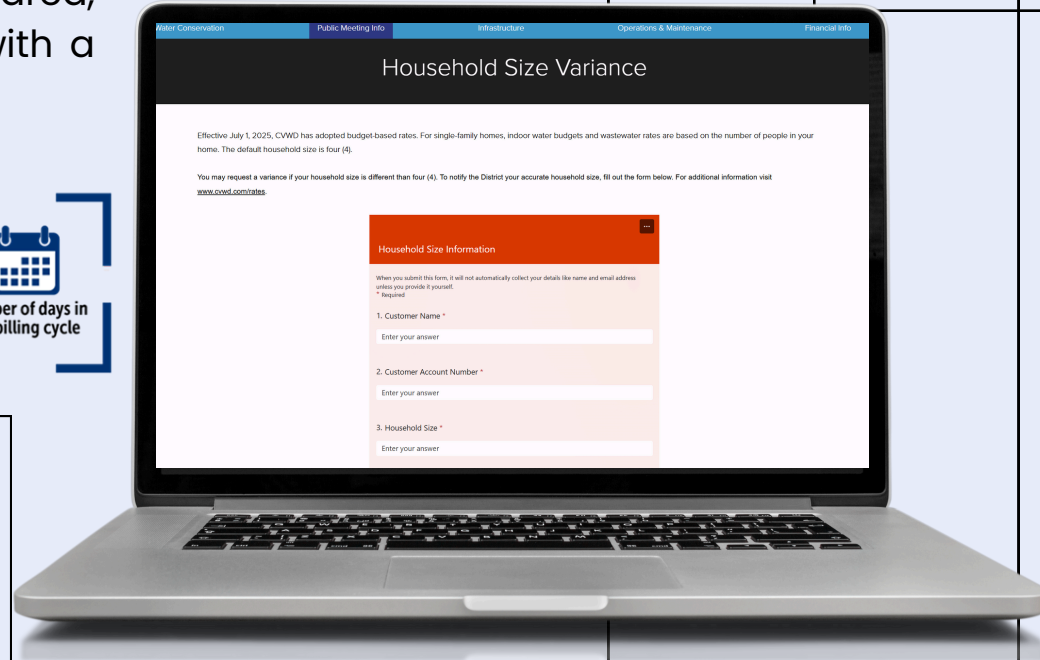
Outdoor budgets are based on irrigable area, calculated as 33 percent of the lot size, with a maximum of 4,353 square feet.



You may request a variance if your household size is different than four (4).

Fill out the form at

www.cvwd.com/household-size-variance



818-248-3925



customerservice@cvwd.com



www.cvwd.com



2700 Foothill Blvd, La Crescenta, CA 91214

CRESCENTA VALLEY WATER DISTRICT

General Manager Report

To: Honorable President and Members of the Board of Directors
From: James Lee, General Manager
Subject: General Manager Report

GM Report
July 22, 2025

General Manager's Report Topics:

- National Incident Management System (NIMS) training

STAFFING

3 work anniversaries in July – Christina Kopelman – 19 years; Morgen DuRose – 24 years; Wayne Boyce – 8 years

Employee Spotlight: Omar Verduzco

Welcoming: Jason Jose, Engineering Intern

As of July 14th, the District has gone 170 days without a lost time incident.

GENERAL MANAGER ACTIVITIES

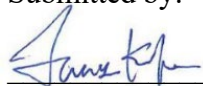
Meetings:

Managers Meeting(s)	- July 10 th ; July 17 th
California Natural Resources Agency	- July 8 th
Quarterly Safety Lunch (<i>celebration of Vardavar</i>)	- July 9 th
National Incident Management System Training	- July 9 th
Engineering, Operations & Technology Committee	- July 9 th (<i>GM absent</i>)
Executive Committee	- July 9 th
City of La Cañada Flintridge	- July 10 th
Valley County Water District	- July 11 th
Mono Lake Committee	- July 12 th
Glendale City Fire	- July 15 th
All-Hands Staff Meeting	- July 17 th
AFSCME Local 1902	- July 21 st
District Tour: CV Historical Society	- July 22 nd

Agreements/Contracts Executed:

Harper and Associates – <i>contract</i>		
Goss Canyon #2 Reservoir Inspection	\$6,000	July 6, 2025

Submitted by:



James Lee
General Manager

EMPLOYEE

Spotlight

Since joining CVWD in June 2025, Omar has contributed to the mission of the District through his dedication to maintaining and enhancing CVWD's infrastructure. Omar is motivated by the opportunity to make an impact on his community.



OMAR VERDUZCO

Operations & Maintenance Worker

CRESCENTA VALLEY WATER DISTRICT

2700 FOOTHILL BOULEVARD
LA CRESCENTA, CALIFORNIA

To be held on
July 9, 2025 at 4:30 PM

Agenda for the Meeting of the Engineering, Operations and Technology Committee of the Crescenta Valley Water District

This meeting will be conducted in person at the address listed above. Members of the public may also participate virtually by using a touchtone phone. You may select any of the following phone numbers (there are more than one for increased reliability during this time of increased phone traffic)

(669) 900-6833

(346) 248-7799

(929) 205-6099

(253) 215-8782

(301) 715-8592

(312) 626-6799

Then, enter Access Code: 625 360 3648

Those members of the public who are able to and would like to additionally participate through a computer may access the Zoom audio & video conferencing tool available at the following link:

<https://us02web.zoom.us/j/6253603648?omn=83492418804>

If there is a disruption of service, this meeting will continue without remote participation. The remote participation option is provided as a convenience to the public and is not required.

Public comment may be made either by emailing comments ahead of the meeting or by speaking over the phone. Comments emailed to customerservice@cvwd.com by 1pm on May 14, 2025, will be sent to the Committee prior to the meeting.

Any person may make a request for a disability-related modification or accommodation needed for that person to be able to participate in the public meeting by contacting the District by phone or in writing at the above email address. Requests must specify the nature of the disability and the type of accommodation requested. A telephone number or other contact information should be included so that District staff may discuss appropriate arrangements. Persons requesting a disability-related accommodation should make the request with adequate time before the meeting for the District to provide the requested accommodation.

Call to Order

Public Comments

At this time, the public shall have an opportunity to comment on any item listed or not listed on the agenda that is relevant to the subject matter jurisdiction of the Committee. This opportunity is non-transferable, and speakers are limited to one three-minute comment unless further time is granted by the Presiding Officer.

Adoption of Agenda

Action Item(s)

Discussion Item(s)

1. Technology - Phone System Updates
2. Capital Improvement Program for FY25-26
 - Externally Contracted
 - In-House Pipeline
 - Other Projects/Capital Outlay
 - CIP Master Plan
3. Reservoir Seismic Evaluation – Grant Application

Committee Members' Request for Future Agenda Items

Closed Session - None

Adjournment

CRESCENTA VALLEY WATER DISTRICT

2700 FOOTHILL BOULEVARD
LA CRESCENTA, CALIFORNIA

To be held on
July 09, 2025 at 4:00 PM

Agenda for the Special Meeting of the Executive Committee
of the Crescenta Valley Water District

This meeting will be conducted in person at the address listed above.

Public comment may be made either by emailing comments ahead of the meeting or by speaking over the phone. Emailed comments will be sent to the Committee prior to the meeting and posted on the District's website. Comments may be sent to customer service, at (818) 248-3925 or customerservice@cvwd.com by 1 PM on July 9, 2025.

Any person may make a request for a disability-related modification or accommodation needed for that person to be able to participate in the public meeting by contacting the District by phone or in writing at the above email address. Requests must specify the nature of the disability and the type of accommodation requested. A telephone number or other contact information should be included so that District staff may discuss appropriate arrangements. Persons requesting a disability-related accommodation should make the request with adequate time before the meeting for the District to provide the requested accommodation.

Call to Order

Public Comments

At this time, the public shall have an opportunity to comment on any item listed or not listed on the agenda that is relevant to the subject matter jurisdiction of the Committee. This opportunity is non-transferable, and speakers are limited to one three-minute comment unless further time is granted by the Presiding Officer.

Adoption of Agenda

Discussion Item(s)

1. Discussion on planning for upcoming District tours
2. Follow-up discussion on districting / at-large issues
3. Follow-up discussion on Board governance training
4. Follow-up discussion on hiring/diversity practices
5. Update on advocacy activities
6. Staffing updates
7. Continuing discussion on General Manager evaluation

Committee Members' Request for Future Agenda Items

Closed Session - None

Adjournment