Date Posted: 9/10/2026

NORTH MARIN WATER DISTRICT
AGENDA - REGULAR MEETING
September 15, 2026 – 4:00 p.m.
Location: 999 Rush Creek Place
Novato, California

Information about and copies of supporting materials on agenda items are available for public review at the District Office, at the Reception Desk, by calling the District Secretary at (415) 897-4133 or on our website at nmwd.com. A fee may be charged for copies. District facilities and meetings comply with the Americans with Disabilities Act. If special accommodations are needed, please contact the District Secretary as soon as possible, but at least two days prior to the meeting.

Item	Subject
	CALL TO ORDER
1.	***GENERAL MANAGER'S REPORT***
2.	***OPEN TIME: (Please observe a three-minute time limit)***

This section of the agenda is provided so that the public may express comments on any issues not listed on the agenda that are of interest to the public and within the jurisdiction of the North Marin Water District. When comments are made about matters not on the agenda, Board members can ask questions for clarification, respond to statements or questions from members of the public, refer a matter to staff, or direct staff to place a matter of business on a future agenda. The public may also express comments on agenda items at the time of Board consideration.

3. ***STAFF/DIRECTORS REPORTS***

CONSENT CALENDAR

The General Manager has reviewed the following items. To his knowledge, there is no opposition to the action. The items can be acted on in one consolidated motion as recommended or may be removed from the Consent Calendar and separately considered at the request of any person.

4. ***Consent – Approve:*** Minutes from Regular Meeting, August 18, 2026
5. ***Consent – Approve:*** Minutes from Special Meeting, August 27, 2026
6. ***Consent – Approve:*** Water Main Relocation Agreement – 125 Landing Court Development
7. ***Consent – Approve:*** Contract Extension for NMWD Trench Restoration Paving – W.K. McLellan Company
8. ***Consent – Approve:*** Association of California Water Agencies (ACWA) Region 1 Board Nomination

ACTION CALENDAR

9. ***APPROVE:*** Oceana Marin Wastewater System – Acceptance of 2026 Sewer System Management Plan

INFORMATION ITEMS

10. Preliminary FY 2025/2026 Financial Statement
11. Revisions to Regulations 6 and 36 Related to Cross-Connection Control
12. FY 2025/26 End of Year Progress Report – Engineering Department
13. FY 2025/26 End of Year Progress Report – Operations Department
14. ***NEWS AND MISCELLANEOUS REPORTS***
    Disbursements – Dated August 27, 2026
    Disbursements – Dated September 3, 2026

The Board of Directors may consider an item at a different time than set forth herein.

Item	Subject
	Disbursements – Dated September 10, 2026 Monthly Progress Report Auditor-Controller's Monthly Report of Investments for July 2026 NOAA Seasonal Precipitation Outlook – September – November 2026 Sonoma Water Interim GM Announcement Message to Grant Davis Coalition Urges California Court to Consider Wildfire Implications on Public Water Systems ERPA Presentation Aug 6, 2026 SCWA Water Year Webinar <u>News Articles:</u> Marin IJ – Candidate field gets larger at deadline Marin IJ – Candidates emerge as election filing closes Marin IJ – MMWD General Manager selected Marin IJ – $28.5M bridge replacement project gains momentum Marin IJ – City approves $16.8M contract for Novato Blvd work Marin IJ – New fee could hit wireless holdouts Marin IJ – Ban on watering decorative grass nears despite no signs of drought Pt. Reyes Light – Water district plans to modernize Nicasio spillway <u>Social Media Posts:</u> NMWD Web and Social Media Report – August 2026
15.	***ADJOURNMENT***

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DRAFT
NORTH MARIN WATER DISTRICT
MINUTES OF REGULAR MEETING
OF THE BOARD OF DIRECTORS
AUGUST 18, 2026

CALL TO ORDER

President Eichstaedt called the regular meeting of the Board of Directors of North Marin Water District to order at 4:00 p.m. at the District Headquarters, and the agenda was accepted as presented. Present were Directors Jack Baker, Ken Eichstaedt, Rick Fraites, Michael Joly, and Stephen Petterle. Also, present were General Manager Tony Williams, AGM/Director of Engineering Eric Miller, and Executive Assistant/District Secretary Eileen Mulliner. Director of Administrative Services Julie Blue was absent.

Staff members Tim Kennedy, Director of Operations, Nancy Williamson, Ling Reilly, Karen Clyde, Ryan Grisso, Pablo Ramudo, Vincent Verissimo, Sebastian Rubio-Gomez, Blake Hall, Tim Fuette, and Interns Alisa Costello and Ellis Stahley were also in attendance.

GENERAL MANAGER'S REPORT

Tony Williams said he attended a Marin County Special Districts Association meeting on August 6 and that the topic was the recent Marin County Grand Jury report regarding Special Districts. He mentioned that staff from the County Executive's office also attended.

Mr. Wiliams said that the County adopted their Emergency Operations Plan in June. He said the plan identified alternate sites to function as Emergency Operations Centers and NMWD's headquarters, including the Board room, was named as one of the alternate sites. He said that the County did a site visit recently and that a proposed agreement that spells out joint use will be brought to the Board in October.

Director Joly asked if the District will be doing anything to commemorate Grant Davis recognizing him as he will be retiring August 25. Mr. Williams said that the Water Advisory Committee did a proclamation and the TAC Ad-hoc committee recognized him at their meeting.

Director Joly inquired about the August 5 ERPA Board meeting. Mr. Williams said he listened in on the meeting and that there was a presentation on hydraulic studies that have been done which shows that the recent transfer volumes can be maintained under the future NERF essentially. He said he will put the presentation in the next Board agenda.

OPEN TIME

President Eichstaedt asked if anyone in the audience wished to bring up an item not on the agenda and there was no response.

STAFF AND DIRECTOR'S REPORTS

President Eichstaedt asked if there were any Staff or Director's reports.

Tim Fuette spoke briefly to the Board describing the internship program this year that the Engineering Department utilized and had hired in two interns for the summer. He then introduced Ellis Stahley, who is one of the two Engineering interns who had interned in the department last summer as well. Ellis spoke to the Board and described his time in the department and how beneficial it has been for him. He thanked the Board and District for the opportunity and said it has been a very positive experience.

Karen Clyde spoke to the Board about the HR/Administrative internship and introduced Alisa Costello. Alisa addressed the Board and described her time in the Administrative Services Department and what she has worked on. She mentioned the Health and Wellness Fair that she is working on putting together with Karen's assistance. She said the internship has been very rewarding and helpful for her and that she has really enjoyed the time at the District. She thanked Karen for her mentorship as well as the Administrative Services Department.

President Eichstaedt mentioned that he went camping recently at Lake Mendocino and learned a lot about the water resources. There were no other Directors reports.

CONSENT CALENDAR

On the motion of Director Joly, seconded by Director Petterle, the Board approved the consent calendar by the following vote:

AYES: Director(s) Baker, Eichstaedt, Fraites, Joly, and Petterle

NOES: None

ABSENT: None

ABSTAIN: None

Approve August 4, 2026 Board Regular Meeting minutes.

ACTION CALENDAR

APPROVE: OCEANA MARIN 2026 MASTER PLAN UPDATE & 2027 RATE STUDY – GENERAL SERVICES AGREEMENTS

Eric Miller gave an overview of the item including a history of the master plan.

On the motion of Director Joly, seconded by Director Baker, the Board approved the Oceana Marin 2026 Master Plan Update & 2027 Rate Study – General Services Agreements by the following vote:

AYES: Director(s) Eichstaedt, Fraites, Joly, and Petterle

NOES: None

ABSENT: None

ABSTAIN: Director Baker

DRAFT

FINAL RESPONSES TO MARIN COUNTY CIVIL GRAND JURY REPORT: BETTER SERVICE AT A LOWER COST: OPTIMIZING ESSENTIAL SERVICES FOR THE FUTURE OF MARIN, JUNE 11, 2026

Tony Williams gave a summary of the item, noting the summary sheet of responses that was included. Director Joly suggested adding additional language for the response for Finding 2 noting the priority of revenue generation for maintenance and capital needs. President Eichstaedt had a question about Recommendation 1 and the planned visioning for West Marin by the County which Mr. Williams addressed. He commended Mr. Williams on the response letter.

On the motion of Director Joly, seconded by Director Petterle, the Board approved the Final Responses to Marin County Civil grand Just Report: Better Service at a Lower Cost: Optimizing Essential Servies for the Future of Marin, June 11, 2026 by the following vote:

AYES: Director(s) Eichstaedt, Fraites, Joly, and Petterle

NOES: None

ABSENT: None

ABSTAIN: Director Baker

BOARD REVIEW OF DISTRICT POLICY: BOARD POLICY NUMBER 14 - BOARD OF DIRECTORS MANUAL

Tony Williams gave an overview of the final draft Board manual and appendices. He said that it included feedback from the Directors. Director Joly said the changes are very helpful. Director Baker asked for clarification that the Manual doesn't address any potential future changes to the District services, especially Oceana Marin. Mr. Williams confirmed it did not.

On the motion of Director Petterle, seconded by Director Joly, the Board approved District Board Policy Number 14 – Board of Directors Manual by the following vote:

AYES: Director(s) Baker, Eichstaedt, Fraites, Joly, and Petterle

NOES: None

ABSENT: None

ABSTAIN: None

BOARD REVIEW OF DISTRICT POLICY: BOARD POLICY NUMBER 26 – ON-CALL AND STAND-BY DUTY

Tony Wlliams summarized this item which was included as an informational item in a prior Agenda.

On the motion of Director Joly, seconded by Director Fraites, the Board approved District Board Policy Number 26 – On-call and Stand-by Duty by the following vote:

AYES: Director(s) Baker, Eichstaedt, Fraites, Joly, and Petterle

NOES: None

DRAFT

ABSENT: None

ABSTAIN: None

INFORMATION ITEMS

FY 2025-26 END OF YEAR PROGRESS REPORT – WATER CONSERVATION AND PUBLIC COMMUNICATION

Ryan Grisso gave a presentation on the FY2025-26 End of Year Progress Report for Water Conservation and Public Communication. There was some discussion and questions from the Board which Mr. Grisso addressed. The Board thanked Mr. Grisso.

FY 2025-2026 END OF YEAR PROGRESS REPORT – WATER QUALITY

Pablo Ramudo provided an overview of the 2025-2026 End of Year Progress Report for Water Quality and gave a presentation. The Board had some questions which were addressed by Mr. Ramudo. The Board thanked Mr. Ramudo.

FY 2025-2026 STAFFORD DAM ACTIVITIES REPORT

Eric Miller gave an overview of the report and a presentation. The Board had some questions which were addressed by Mr. Miller. The Board thanked Mr. Miller.

NEWS AND MISCELLANEOUS REPORTS

The Board received the following miscellaneous items: Disbursements – Dated August 6 and 13, 2026; Monthly Progress Report – July, Auditor-Controller's Monthly Report of Investments for June 2026, NMWD Candidates who have filed papers for Office – November 6 New Study introduces a transferable framework for evaluating the potential for Forecast-Informed Reservoir Operations in watersheds across the country.

The Board received the following News Articles: Marin IJ – Full ballots for voters in Marin election.

The Board received the NMWD Web and Social Media Report – July 2026.

ADJOURNMENT

President Eichstaedt adjourned the meeting at 6:05 p.m.

Submitted by

Eileen Mulliner
District Secretary

DRAFT

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DRAFT
NORTH MARIN WATER DISTRICT
MINUTES OF SPECIAL MEETING
OF THE BOARD OF DIRECTORS
AUGUST 27, 2026

CALL TO ORDER

President Eichstaedt called the special meeting of the Board of Directors of North Marin Water District to order at 4:00 p.m. at the District Headquarters, and the agenda was accepted as presented. Present were Directors Jack Baker, Ken Eichstaedt, Rick Fraites, Michael Joly, and Stephen Petterle. Also, present were General Manager Tony Williams, AGM/Director of Engineering Eric Miller, Director of Administrative Services Julie Blue, and Executive Assistant/District Secretary Eileen Mulliner.

Staff member Tim Fuette was also in attendance.

OPEN TIME

President Eichstaedt asked if anyone in the audience wished to bring up an item not on the agenda and there was no response.

ACTION CALENDAR

APPROVE: WATER BID EXCEEDANCE – NOVATO BOULEVARD WATER IMPROVEMENTS

The Board was provided a revised memorandum which had minor edits on page 4. Eric Miller gave an overview of the item and staff's recommendation to approve the bid exceedance amount. There was some discussion and some questions from the Board which were addressed by Mr. Miller.

On the motion of Director Petterle, seconded by Director Joly, the Board approved the Water Bid Exceedance – Novato Boulevard Water Improvements item by the following vote:

AYES: Director(s) Baker, Eichstaedt, Fraites, Joly, and Petterle
NOES: None
ABSENT: None
ABSTAIN: None

ADJOURNMENT

President Eichstaedt adjourned the meeting at 4:14 p.m.

Submitted by

Eileen Mulliner
District Secretary

DRAFT

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NORTH MARIN WATER DISTRICT

MEMORANDUM

To: Board of Directors Date: September 15, 2026

From: Tim Fuette, Senior Engineer
Eric Miller, AGM | Director of Engineering

Subject: Water Main Relocation Agreement – 125 Landing Court Development
R:\Projects\2000s\2800s\2869 Landing Court\A. BOD-GM\2869 Landing Court Pipeline Relocation.doc

RECOMMENDED ACTION: Authorize the Water Main Relocation Agreement with Affordable Housing Land Consultants for APN 153-162-70

FINANCIAL IMPACT: None (Developer Funded)

Background

AMG & Associates (Developer) is developing a 301-unit multi-family apartment building at 125 Landing Court, on a 2.02-acre unimproved parcel (see attached map), on behalf of Affordable Housing Land Consultants (Property Owner). The development has been approved by the City of Novato Community Development Planning Division and is currently in the final stages of the building permit process. To implement the planned development, the Developer has requested and will pay the full cost to relocate 300 feet of existing 6-inch pipeline installed in 1959 and easement currently located in the central portion of the property. Once the new 450-foot 8-inch pipeline is installed in the westerly portion of the property, the existing pipeline will be abandoned in-place, and the existing easement will be quitclaimed back to the Property Owner. A new 15-foot-wide water line easement will be granted to the District. The Developer will decide on whether to completely remove the abandoned pipeline as part of its final approved site plan.

This agreement is for water main relocation and pipeline abandonment only. The installation of new water service facilities improvements and associated water entitlements for the planned development will be accomplished during a future Phase 2 Agreement, anticipated to occur within the next 12 months.

Environmental Document Review

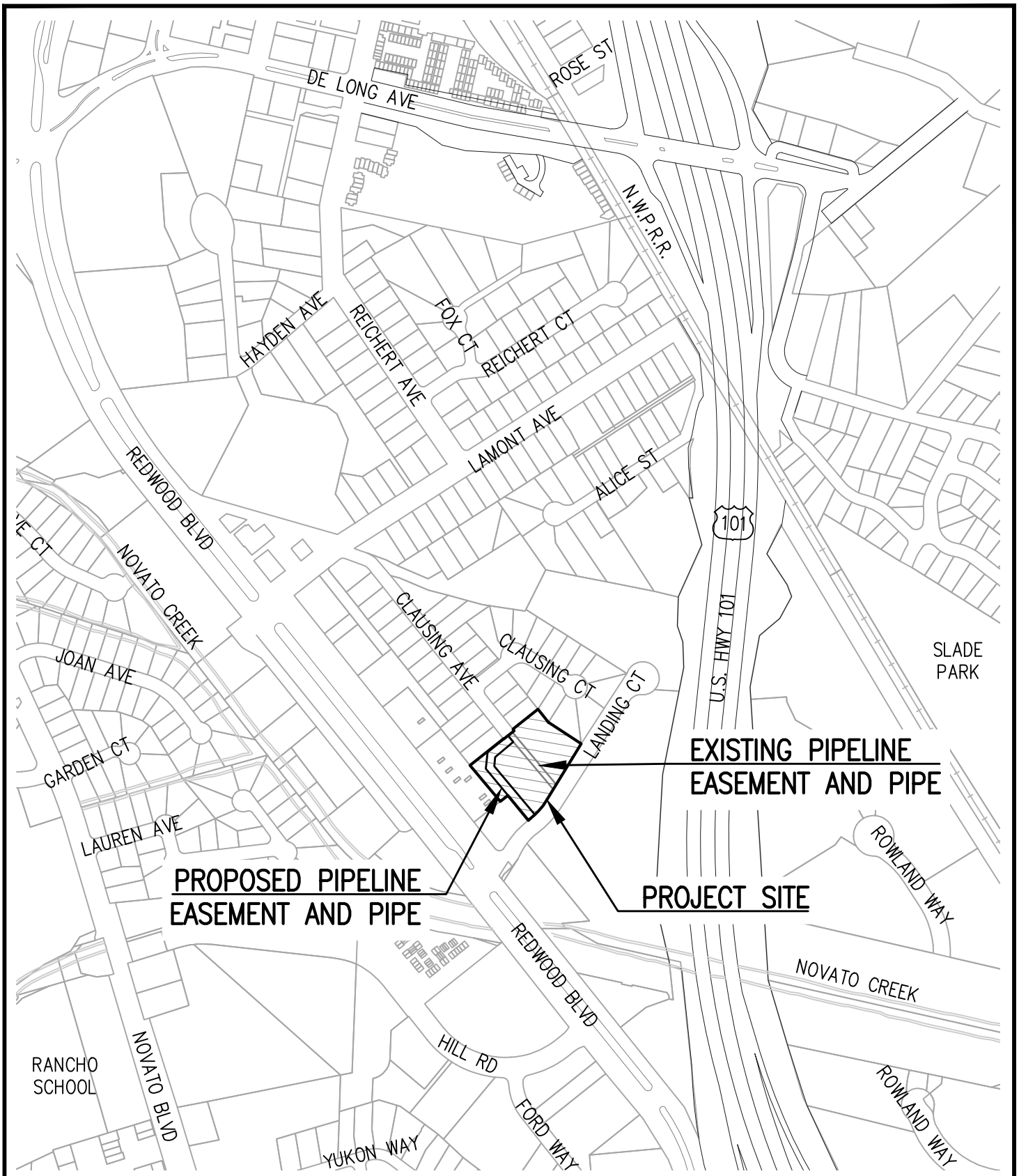
The project conforms to the requirements of CA Assembly Bill 2011, the Affordable Housing and High Roads Jobs Act of 2022, and is therefore exempt from CEQA Guidelines.

RECOMMENDATION

That the Board approve a Water Main Relocation Agreement with Affordable Housing Land Consultants to accommodate a future housing development at 125 Landing Court (APN 153-162-70).

ATTACHMENTS:

1. Vicinity Map
2. NMWD Project 2869 Agreement – Water Main Relocation Phase 1



NORTH MARIN WATER DISTRICT

LANDING COURT
APN 153-162-70
WATER MAIN RELOCATION

DATE	SCALE	JOB. NO.	DWG. NO.
09/02/26	NTS	2869	MAP

Sep 02, 2026 - 1:33pm W:\JOB\1_NOVATO\2869 Landing Court\3_ISSUED\B\2869_Vicinity Map.dwg User: SDOVE

RESOLUTION NO. 26-XX

A RESOLUTION OF THE BOARD OF DIRECTORS OF THE NORTH MARIN WATER DISTRICT AUTHORIZATING THE EXECUTION OF WATER SERVICE FACILITIES CONSTRUCTION AGREEMENT FOR WATER MAIN RELOCATION PHASE 1

BE IT RESOLVED by the Board of Directors of NORTH MARIN WATER DISTRICT that the President and Secretary of this District be and they hereby are authorized and directed for and on behalf of this District to execute that certain water service facilities construction agreement between this District and Affordable Housing Land Consultants, an Limited Liability Company, providing for the installation of water distribution facilities to provide domestic water service to that certain real property known as Marin County Assessor's Parcel Number 153-162-70, NOVATO, CALIFORNIA.

* * *

I hereby certify that the foregoing is a true and complete copy of a resolution duly and regularly adopted by the Board of Directors of NORTH MARIN WATER DISTRICT at a regular meeting of said Board held on the 15th day of September, 2026, by the following vote:

AYES:
NOES:
ABSENT:
ABSTAINED:

(SEAL)

Eileen Mulliner, Secretary
North Marin Water District

PART ONE
WATER SERVICE FACILITIES CONSTRUCTION AGREEMENT
125 LANDING COURT
WATER MAIN RELOCATION PHASE 1

THIS AGREEMENT, which consists of this Part One and Part Two, Standard Provisions, attached hereto and hereby made a part hereof, is made and entered into as of _____, 2026, by and between NORTH MARIN WATER DISTRICT, herein called "District," and AFFORDABLE HOUSING LAND CONSULTANTS, An Limited Liability Company, herein called "Applicant."

WHEREAS, the Applicant, pursuant to District Regulation 1, the State of California Subdivision Map Act, and all applicable ordinances of the City of Novato, has pending before the City a conditionally approved Tentative Subdivision Map, Precise Development Plan, Tentative Parcel Map or other land use application for the development of the real property in the District commonly known as Marin County Assessor's Parcel Number 153-162-70 and the project known as WATER MAIN RELOCATION, consisting of one (1) lot for residential development; and

WHEREAS, prior to final approval by the City of a Subdivision Map, Precise Development Plan, Parcel Map or other land use application and recording of a final map for the project, the Applicant shall enter into an agreement with the District and complete financial arrangements to relocate existing water facilities for said development; and

WHEREAS, the Applicant is the owner of real property in the District commonly known as 125 Landing Court, Novato (Marin County Assessor’s Parcel 153-162-70); and

WHEREAS, Phase 1 will consist of on-site relocation of District utilities in conflict with the project development plans and no additional Facility Reserve Charge fees are due at this time, and;

WHEREAS, Initial charges including required Facilities Reserve Charges and District costs to install new water service facilities improvements for the future development will be due in a future Phase 2 Agreement.

NOW THEREFORE, the parties hereto agree as follows:

1. The Applicant hereby applies to the District for relocation of existing water facilities through said real property and project and shall comply with and be bound by all terms and conditions of this agreement, the District's regulations, standards and specifications.

2. Prior to the District issuing written certification to the City, County or State that financial arrangements have been made for construction of the required water facilities, the Applicant shall complete such arrangements with the District in accordance with Section 6 of this agreement.

3. Prior to release or delivery of any materials by the District or scheduling of either construction inspection or installation of the facilities by the District, the Applicant shall:

a. deliver to the District a PDF or CAD copy of any revised utility plans approved by the City to enable the District to determine if any revisions to the final water facilities construction drawings are required. The proposed facilities to be installed are shown on Drawing No. 1 2869.001, entitled, "LANDING COURT WATER MAIN RELOCATION PHASE 1", a copy of which is attached, marked Exhibit "A", and made a part hereof.

b. grant or cause to be granted to the District without cost and in form satisfactory to the District all easements and rights of way shown on Exhibit "A" or as otherwise may be required by the District for the facilities.

c. deliver to the District a written construction schedule to provide for timely withdrawal of guaranteed funds for ordering of materials to be furnished by the District and scheduling of either construction inspection or construction pursuant to Section 6 hereof.

4. Initial Charges for new services, estimated District Costs, and estimated applicant installation costs, based on the most recent plans made available for review by the District, are as follows;

Initial Charges

Meter Charges (Included in Estimated District Costs).....	Zero @	$	0.00	$	0.00
Reimbursement Fund Charges ……..……..	Zero @	$	0.00	$	0.00
Facilities Reserve Charges…….	Zero @	$	0.00	$	0.00
Subtotal - Initial Charges……				**$**	**0.00**

Estimated District Costs

Pipe, Fittings & Appurtenances……...	$	14,970.00
District Construction Labor……...	$	44,160.00
Engineering & Inspection…….	$	18,850.00
Bulk Materials…….	$	15,280.00
Subtotal –Estimated District Costs……..……	**$**	**93,260.00**

Estimated Applicant Installation Costs

Installation Labor…….	$	52,870.00
Contractor Furnished – Pipe Fittings & Appurtenances……..	$	29,870.00
Bulk Materials…….	$	22,230.00

Subtotal- Estimated Applicant Installation Costs…….…… $ 104,970.00

TOTAL ESTIMATED WATER FACILITIES COSTS…… $198,230.00

(Bulk materials are such items as crushed rock, imported backfill, concrete, reinforcing steel, paving materials, and the like, which are to be furnished by the contractor performing the work.)

5. In addition, the associated "bulk materials" for the portion of applicant installation as defined above, shall be furnished by the Applicant or by the contractor performing the work for Applicant at no cost to the District. The quantities, type, and quality of said materials shall be approved by the District prior to purchase by the Applicants and shall conform to District standards, which are available on the District website (at nmwd.com) and made a part hereof and such other standards as otherwise may be required. The District reserves the right to reject and prohibit installation of any and all nonconforming materials furnished by the Applicants.

6. Financial Arrangements to be made by the Applicant shall consist of the following:

Initial Charges and Estimated District Costs

The Applicant shall either pay the amount of **$93,260**, which is the sum of Initial Charges and Estimated District Costs as set forth in Section 4 of this Agreement to the District, or provide to the District a two (2) year irrevocable letter of credit in form satisfactory to the District and payable at sight at a financial institution in the Novato area in said amount. If the Applicant provides the two (2) year irrevocable letter of credit, the District shall immediately draw down Initial Charges and shall draw upon the remaining funds guaranteed by the letter at any time the District deems appropriate to recover the Estimated District Costs which time will normally be at least thirty (30) days prior to the anticipated start of construction, for the ordering of materials to be furnished by the District.

Estimated Installation Costs

Alternative No. 1 Installation By Applicant: If the Applicant elects to relocate a portion of the facilities or hire a private contractor to relocate the facilities, the Applicant shall provide financial guarantees satisfactory to the District in the form of a performance bond in the amount of **$104,970** conditioned upon relocating the facilities and furnishing of bulk materials, and a maintenance bond in the amount of **$26,242.50** conditioned upon payment of the cost of maintaining, repairing, or replacing the facilities during the period of one (1) year following completion of all the facilities and acceptance by the District. Performance and maintenance bonds shall be executed by a California admitted surety insurer with a minimum A.M. Best rating of A-VII. In lieu of posting bonds, the Applicant may provide an irrevocable letter or letters of credit payable at sight at a financial institution in the Novato area guaranteeing funds in the respective amounts described in the preceding sentence. All financial

guarantees shall be provided by the Applicant rather than the contractor. The Applicant or contractor, whichever performs the work, shall be properly licensed therefor by the State of California and shall be acceptable to the District.

Alternative No. 2 Installation By District: If the Applicant requests the District to relocated a portion of the facilities, and the District consents to do so, the Applicant shall either pay to the District the total Estimated Installation Costs set forth in Section 4 hereof in the amount of **$104,970** or shall include such amount in the irrevocable letter of credit provided for the Initial Charges and Estimated District Costs set forth first above. The District shall draw upon installation funds guaranteed by the letter at any time the District deems appropriate, which time will normally be at least thirty (30) days prior to the anticipated start of construction.

Whenever an irrevocable letter of credit is required by this agreement, the Applicant may substitute a certificate of deposit at a financial institution in the Novato area provided the certificate may be cashed at sight by the District at any time.

7. No demands associated with the future development of the real property are included in this agreement. A separate agreement will be required when the development project occurs. Additional Facility Reserve Charges and other Initial Charges may be required to be paid by the Applicant in order to acquire the necessary EDUs determined at that time by the District to meet the water service demands of the development project.

8. All estimated costs set forth in this agreement shall be subject to periodic review and revision at the District's discretion. In the event the Applicant has not completed financial arrangements with the District in accordance with Section 6 hereof prior to expiration of six (6) months from the date of this agreement, all Initial Charges and estimated costs set forth in Section 4 hereof shall be revised to reflect then current District charges and estimates. In the event the Applicant has not secured final land use approval for the project from the City of Novato, recorded a final map and diligently commenced construction of improvements required by those agencies and the District prior to expiration of one (1) year from the date of this agreement, the District may, at its option, either retract financial certifications issued to City, County and State agencies and terminate this agreement, or require amendment of this agreement and review of all Initial Charges and estimated costs contained herein. The Applicant shall either pay any balance due upon demand or furnish a guarantee of such payment satisfactory to the District in form and substance.

9. All extensions of time granted by the City of Novato for the Applicant to comply with conditions of land use approval or to construct improvements pursuant to a subdivision improvement agreement shall require concurrent extensions of this agreement and shall be cause for review and

revision of all Initial Charges and estimated costs set forth in Section 4 hereof. The Applicant shall apply to the District for extension of this agreement prior to approval of the Applicant's requests for such extensions by either the City of Novato.

10. In the event of sale of this parcel, the Applicant shall provide to the buyer(s) a copy of this Agreement so that there is complete disclosure of the limited nature of the water service. In addition, upon execution of this Agreement, District shall have it recorded (except that, as specified above, Exhibits A and B will not be part of the version of the agreement to be recorded).

11. This agreement shall bind and benefit the successors and assigns of the parties hereto; provided, however, that this agreement may be assigned by the Applicant only with the prior written consent of the District. Assignment shall be accomplished only by a separate assignment document prepared by the District upon the Applicant's written request.

NORTH MARIN WATER DISTRICT
"District"

_____
Ken Eichstaedt, President Date

ATTEST:

_____
Eileen Mulliner, Secretary Date

(SEAL)

AFFORDABLE HOUSING LAND CONSULTANTS
LIMITED LIABILITY COMPANY
ALEXIS GEVORGIAN
"Applicant"

_____
Alexis Gevorgian, Managing Member Date

(SEAL)

NOTES: *If the Applicant executing this agreement is a corporation, a certified copy of the bylaws or resolutions of the Board of Directors of said corporation authorizing designated officers to execute this agreement shall be provided.*

This agreement must be executed by the Applicant and delivered to the District within thirty (30) days after it is authorized by the District's Board of Directors. If this agreement is not signed and returned within thirty days, it shall automatically be withdrawn and void. If thereafter a new agreement is requested, it shall incorporate the Initial Charges (connection fees) and cost estimates then in effect.

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NORTH MARIN WATER DISTRICT

MEMORANDUM

To: Board of Directors September 15, 2026

From: Chris Kehoe, Director of Utilities

Subject: Contract Extension for NMWD Trench Restoration Paving – W.K. McLellan Company

K:\Construction Superintendent\2026-2027\Memos\WK Contract Amend BOD Memo 9.15.26.doc

RECOMMENDED ACTION: The Board authorize the General Manager to execute a trench restoration paving contract with W.K. McLellan Company

FINANCIAL IMPACT: Estimated at $400,000

W.K. McLellan Company (McLellan) has been the District's contractor for trench restoration work since 1997. The current contract was approved by the Board at the August 20, 2019 meeting, and subsequently extended at the June 2, 2020, June 1, 2021, May 13, 2022, June 6, 2023, and again at the September 17, 2024 Board meetings.

McLellan has agreed to maintain their current pricing into FY 26/27 (see Attachment 1). Annual billings from McLellan for FY26/27 are estimated to be approximately $400,000. Annual costs for this work over the last eleven years are summarized in Table 1.

TABLE 1

YEAR	*BILLINGS*
FY15-16	$295,616
FY16-17	$173,868
FY17-18	$201,489
FY18-19	$378,143
FY19-20	$258,679
FY20-21	$390,529
FY21-22	$401,268
FY22-23	$367,690
FY23-24	$396,154
FY24-25	$391,215
FY25-26	$169,824

To execute the work, task orders will be issued monthly for trench areas to be paved, stripped, and compaction tested at the approved unit pricing.

McLellan has had an excellent working relationship with the District, City of Novato, and County of Marin and they go out of their way to ensure that the District's paving needs are met. The quality of McLellan's work has been excellent and there have been very few complaints from City or County staff, or customers on the workmanship or longevity of trench restoration paving.

RECOMMENDATION

That the Board authorize the General Manager to execute a trench restoration paving contract amendment with W.K. McLellan Company.

ATTACHMENT:

1. W.K. McLellan Pricing Schedule FY 26/27

ITEM	*BID DESCRIPTION*		*MCLELLAN PRICING FY 26/27*
1.	EXCAVATE, PRIME AND RESURFACE		
	2-INCH GRIND AND PAVE		
	a) 0-1000	square feet	$9.24
	b) 1000-2500	square feet	$9.24
	c) 2500-5000	square feet	$9.24
2.	EXCAVATE, PRIME AND RESURFACE		
	WITH 4-INCH ASPHALT CONCRETE		
	a) 0-29	square feet	$11.64
	b) 30-99	square feet	$11.64
	c) 100-499	square feet	$11.34
	d) Excess of 500	square feet	$11.08
3.	EXCAVATE, PRIME AND RESURFACE		
	WITH 6-INCH ASPHALT CONCRETE		
	a) 0-29	square feet	$13.90
	b) 30-99	square feet	$13.59
	c) 100-499	square feet	$13.26
	d) Excess of 500	square feet	$12.94
4.	EXCAVATE, PRIME AND RESURFACE		
	WITH 8-INCH ASPHALT CONCRETE		
	a) 0-29	square feet	$18.11
	b) 30-99	square feet	$18.11
	c) 100-499	square feet	$18.11
	d) Excess of 500	square feet	$18.11
5.	EXCAVATE, PRIME AND RESURFACE		
	WITH 12-INCH ASPHALT CONCRETE		
	a) 0-100	square feet	$23.29
	c) 100-499	square feet	$23.29
	d) Excess of 500	square feet	$23.29
6.	VALVES		
	Includes a 3'x3' patch		
	Installing of aluminum ring in valve riser		
	Rising to grade		$300.00
	Cast- in- Place Concrete		
7.	4" Sidewalk / sf.		$17.49
8.	6" Sidewalk / sf.		21.12
9.	Dowels / ea.		$10.56
10.	Curb and Gutter / lf.		$72.60

Note: Striping will be billed separately with 5% mark up.
Compaction tests will be billed separately with 5% mark up.
Traffic Control will be billed separately with 5% mark up.

8

NORTH MARIN WATER DISTRICT

MEMORANDUM

To: Board of Directors Date: September 15, 2026

From: Tony Williams, General Manager

Subject: Association of California Water Agencies (ACWA) Region 1 Board Nomination
T:\BOD\MEMOS\2026\ACWA Ken Eichstaedt BOD Memo .docx

RECOMMENDED ACTION: Consider Adopting Resolution No. 26-06 Nominating Director Ken Eichstaedt for the ACWA Region 1 Board

FINANCIAL IMPACT: To be Determined (Expenses for Participation in ACWA Events)

The North Marin Water District is a long-standing member of the Association of California Water Agencies (ACWA) and is part of the ACWA Region 1. The ACWA Region 1 Board has a vacancy (see Attachment 1), and Director Eichstaedt has expressed interest in serving in this regional leadership role. As part of the nomination process, ACWA requests a Board Resolution officially nominating Director Eichstaedt (Attachment 2).

RECOMMENDATION

That the Board adopt Resolution No. 26-06 Nominating Director Ken Eichstaedt for the ACWA Region 1 Board.

ATTACHMENTS:

1. ACWA Region 1 Nomination Packet
2. Resolution 26-06 Nomination of Ken Eichstaedt for ACWA Region 1 Board

ACWA REGIONS

MEMORANDUM

Date: August 7, 2026

To: Region 1 Member Agency Presidents and General Managers
(sent via e-mail)

From: ACWA Region 1 Board

The Region 1 Board is looking for ACWA members who are interested in leading the direction of ACWA Region 1 for the 2026-'27 term. The Board is seeking candidates from Region 1 to fill one board vacancy.

The leadership of ACWA's ten geographical regions is integral to the leadership of the Association as a whole. The Chair and Vice Chair of Region 1 serve on ACWA's Statewide Board of Directors and recommend all committee appointments for Region 1. The members of the Region 1 Board determine the direction and focus of region issues and activities. Additionally, they support the fulfillment of ACWA's goals on behalf of members.

If you, or someone within your agency, are interested in serving in a leadership role within ACWA by becoming a Region 1 Board Member, please familiarize yourself with the Role of the Regions and Responsibilities HERE; and the Region 1 Rules and Regulations HERE and complete the following steps:

- **Complete the Nomination Form HERE**
- **Obtain a Resolution of support from your agency's Board of Directors (sample resolution HERE)**
- **Submit the requested nomination form to ACWA by 5:00 p.m. on Friday, September 11, 2026**

The Region 1 Board will make their appointments shortly thereafter and will inform the region of the results. The Region 1 Board may keep the call for candidates open until the vacancies are filled, as needed.

If you have any questions, please contact ACWA Senior Regional Affairs Representative Jennifer Rotz at JenniferR@acwa.com or (916) 669-2373.

THE ROLE OF THE REGIONS

ACWA Regions provide the grassroots support to advance ACWA's legislative and regulatory agenda.

Background

As a result of ACWA's 1993 strategic planning process, known as Vision 2000, ACWA modified its governance structure from one that was based on sections to a regional-based configuration. Ten regions were established to provide geographic balance and to group agencies with similar interests.

Primary Charge of Regions

- To provide a structure where agencies can come together and discuss / resolve issues of mutual concern and interest and based on that interaction, provide representative input to the ACWA board.
- To assist the Outreach Task Force in building local grassroots support for the ACWA Outreach Program in order to advance ACWA's legislative and regulatory priorities as determined by the ACWA Board and the State Legislative, Federal Affairs or other policy committees.
- To provide a forum to educate region members on ACWA's priorities and issues of local and statewide concern.
- To assist staff with association membership recruitment at the regional level.
- To recommend specific actions to the ACWA Board on local, regional, state and federal issues as well as to recommend endorsement for various government offices and positions.

Region chairs and vice chairs, with support from their region boards, provide the regional leadership to fulfill this charge.

Note: Individual region boards CANNOT take positions, action or disseminate communication on issues and endorsements without going through the ACWA Board structure.

GENERAL DUTIES / RESPONSIBILITIES FOR REGION OFFICERS

Region Chair

- Serves as a member of the ACWA Board of Directors at bimonthly meetings at such times and places as the Board may determine. The Chair will also call at least two Region membership meetings to be held at each of the ACWA Conferences and periodic Region Board meetings.
- Serves as a member of ACWA's Outreach Program, and encourages region involvement. Appoints Outreach Captain to help lead outreach effort within the region.
- Presides over all region activities and ensures that such activities promote and support accomplishment of ACWA's Goals.
- Makes joint recommendations to the ACWA President regarding regional appointments to all ACWA committees.
- Appoints representatives in concurrence of the region board, to serve on the region's nominating committee with the approval of the region board.
- Facilitates communication from the region board and the region membership to the ACWA board and staff.

Region Vice Chair

- Serves as a member of the ACWA Board of Directors at bimonthly meetings at such times and places as the Board may determine. The Vice Chair will also participate in at least two Region membership meetings to be held at each of the ACWA Conferences and periodic Region Board meetings.
- Performs duties of the Region Chair in the absence of the chair.
- Serves as a member of ACWA's Outreach Program, and encourages region involvement.
- Makes joint recommendations to the ACWA president regarding regional appointments to all ACWA committees.

Region Board Member

- Participate in at least two Region membership meetings to be held at each of the ACWA Conferences and periodic Region Board meetings.
- Supports program planning and activities for the region.
- Actively participates and encourages region involvement in ACWA's Outreach Program.
- May serve as alternate for the chair and/or vice chair in their absence (if appointed) to represent the region to the ACWA Board.

ACWA Region 1
Rules & Regulations

Each region shall organize and adopt rules and regulations for the conduct of its meetings and affairs not inconsistent with the Articles of Incorporation or bylaws of the Association (ACWA Bylaw V, 6.).

Officers

The chair shall appoint a secretary to the Board if one is deemed necessary.

Meetings

Region 1 will meet quarterly, subject to call of the chair, with two of those meetings to be held at ACWA spring and fall conferences.

Attendance

If a region chair or vice chair is no longer allowed to serve on the Board of Directors due to his / her attendance, the region board shall appoint from the existing region board a new region officer. (ACWA Policy & Guideline Q, 1.)

If a region chair or vice chair misses three consecutive region board / membership meetings, the same process shall be used to backfill the region officer position. (ACWA Policy & Guideline Q, 1.)

If a region board member has three consecutive unexcused absences from a region board meeting or general membership business meeting, the region board will convene to discuss options for removal of the inactive board member. If the vacancy causes the board to fail to meet the minimum requirement of five board members, the region must fill the vacancy according to its rules and regulations. (ACWA Policy & Guideline Q, 3.)

Vacancy

If the chair's position becomes vacant, the vice chair will fill the chair's position.

If the vice chair's position becomes vacant, the alternate chair will fill the vice chair's position.

Elections

All nominations received for the region chair, vice chair and board positions must be accompanied by a resolution of support from each sponsoring member agency, signed by an authorized representative of the Board of Directors. Only one individual may be nominated from a given agency to run for election to a region board. Agencies with representatives serving on the nominating committees should strive not to submit nominations for the region board from their agency. (ACWA Policy & Guideline P, 2.)

Election ballots will be e-mailed to ACWA member agency general managers and presidents.

The nominating committee shall consist of three to five members.

The nominating committee should pursue qualified members within the region to run for the region board, and should consider geographic diversity, agency size and focus in selecting a slate.

See the current region election timeline for specific dates.

Endorsements

ACWA, as a statewide organization, may endorse potential nominees and nominees for appointment to local, regional, and statewide commissions and boards. ACWA's regions may submit a recommendation for consideration and action to the ACWA Board of Directors to endorse a potential nominee or nominee for appointment to a local, regional or statewide commission or board. (ACWA Policy & Guideline P, 3.)

Committee Recommendations & Representation

All regions are given equal opportunity to recommend representatives of the region for appointment to a standing or regular committee of the Association. If a region fails to provide full representation on all ACWA committees, those committee slots will be left open for the remainder of the term or until such time as the region designates a representative to complete the remainder of the term. (ACWA Policy & Guideline P, 4. A.)

At the first region board / membership meeting of the term, regions shall designate a representative serving on each of the standing and regular committees to serve as the official reporter to and from the committee on behalf of the region to facilitate input and communication. (ACWA Policy & Guideline P, 4. B.)

Tours

ACWA may develop and conduct various tours for the regions. All tour attendees must sign a "release and waiver" to attend any and all region tours. Attendees agree to follow environmental guidelines and regulations in accordance with direction from ACWA staff; and will respect the rights and privacy of other attendees. (ACWA Policy & Guideline P, 6.)

Finances

See "Financial Guidelines for ACWA Region Events" document.

Amending the Region Rules & Regulations

ACWA policies and guidelines can be amended by approval of the ACWA Board of Directors.

The Region 1 Rules & Regulations can be amended by a majority vote of those present at any Region 1 meeting as long as a quorum is present.

REGION BOARD VACANCY
CANDIDATE NOMINATION

ACWA
Association of California Water Agencies

Submit completed form to **regionelections@acwa.com**

Name of Candidate: Ken Eichstaedt, P.E.	Title: Director
Agency: North Marin Water District	Agency Phone: 415/897-4133
Direct Phone: 415/515-9423	E-mail: keichstaedt@nmwd.org
Address: 999 Rush Creek Place, Novato, CA 94945	ACWA Region: 1 County: Marin

Agency Function(s) *Check all that apply*	
☐ Ag Water Supply	☐ Urban Water Supply
☐ Flood Control	☐ Wastewater Reclamation
☐ Groundwater Management / Replenishment	☐ Wholesale
☑ Retailer	☐ Other:
☐ Sewage Treatment	

Describe your ACWA-related activities that help qualify you for this office:

Currently, I serve as a Director and current Board president for the North Marin Water District. I am on the ad hoc committee for West Marin water service.

Write below or attach a half-page bio summarizing the experience and qualifications that make you a viable candidate for ACWA Region leadership. Please include the number of years you have served in your current agency position, the number of years you have been involved in water issues and in what capacity you have been involved in the water community. You may share a candidate photo along with your application. Candidate photos and bios will be shared on the ACWA region election webpage.

Presently I have been on the North Marin Water District Board for 2 years. As a registered civil and traffic engineer, I worked in the engineering field for more than 40 years. This has allowed me to develop expertise with utility systems, roadways, environmental clean-ups and civil infrastructure. Water related projects I have worked on include the East Bay Municipal Utility District's (EBMUD) $200 million Seismic Improvement Program (SIP) that made major progress to increase the seismic reliability of the region's water supply; and, the San Francisco Public Utility District's Water System Improvement Program (WSIP), a $4.8 billion-dollar, multiyear capital program to repair, replace, and seismically upgrade crucial portions of the Hetch Hetchy Regional Water System. I retired from the City of Petaluma serving as the Traffic Engineer (after 5 years). Previously, I was the General Manager for a water company in West Marin. Committee work includes Board Member (former) West Marin Chamber of Commerce; Olema Valley Association Member (part of the Alliance of Coastal Marin Villages); and, KWMR radio station

I acknowledge that the role of a region board member is to actively participate on the Region Board during my term, including attending region board and membership meetings, participating in region conference calls, participating in ACWA's Outreach Program, as well as other ACWA functions to set an example of commitment to the region and the association.

I hereby submit my name for consideration by the Nominating Committee.

Ken Eichstaedt	Director	9/5/26
Signature	Title	Date

Please attach a copy of your agency's resolution of support / sponsorship for your candidacy.

RESOLUTION NO. _____

A RESOLUTION OF THE BOARD OF DIRECTORS OF THE (DISTRICT NAME) PLACING IN NOMINATION (NOMINEE NAME) AS A MEMBER OF THE ASSOCIATION OF CALIFORNIA WATER AGENCIES REGION ___ (POSITION)

BE IT RESOLVED BY THE BOARD OF DIRECTORS OF (DISTRICT NAME) AS FOLLOWS:

A. Recitals

(i) The Board of Directors (Board) of the (District Name) does encourage and support the participation of its members in the affairs of the Association of California Water Agencies (ACWA).

(ii) (Nominee Title), (Nominee Name) is currently serving as (Position) for ACWA Region ___

and/or

(iii) (Nominee Name) has indicated a desire to serve as a (Position) of ACWA Region ____.

B. Resolves

NOW, THEREFORE, BE IT RESOLVED THAT THE BOARD OF DIRECTORS OF (DISTRICT NAME),

(i) Does place its full and unreserved support in the nomination of (Nominee Name) for the (Position) of ACWA Region ____.

(ii) Does hereby determine that the expenses attendant with the service of (Nominee Name) in ACWA Region ____ shall be borne by the (District Name).

Adopted and approved this ____ day of ____ (month) 2026.

_____
(Nominee Name), (Title)
(District Name)

(SEAL)

SAMPLE

ATTEST:

_____
(Secretary Name), Secretary

I, (SECRETARY NAME), Secretary to the Board of Directors of (District Name), hereby certify that the foregoing Resolution was introduced at a regular meeting of the Board of Directors of said District, held on the ____ day of ____ (month) 2026, and was adopted at that meeting by the following roll call vote:

AYES:

NOES:

ABSENT:

ATTEST:

_____
(Secretary Name), Secretary to the
Board of Directors of
(District Name)

SAMPLE

Region 1 Board 2026-27 Term

Chair

David Rabbitt, Sonoma Water
404 Aviation Blvd.
Santa Rosa, CA 95403
Phone: 707.322.8192
Email: drabbitt@sonoma-county.org
CC: brad.sherwood@scwa.ca.gov
CC: tina.thomas@sonoma-county.org
Position: Director

Vice Chair

Ranjiv Khush, Marin Municipal Water District
220 Nellen Ave.
Corte Madera, CA 94925
Phone: 415.945.1455
Direct: 415.680.5846
Email: rkhush@marinwater.org
Position: Director

Board Members

Peter Martin, City of Santa Rosa Water
69 Stony Circle
Santa Rosa, CA 95401
Phone: 707.543.4200
Direct: 707.543.4294
Email: pmartin@srcity.org
Position: Deputy Director Water Resources

Dennis Mayo, McKinleyville Community Services District
1656 Sutter Road
McKinleyville, CA 95519
Phone: 707.839.3251
Direct: 707.832.9334
Email: caveboy_m@yahoo.com
CC: jblaine@mckinleyvillecsd.com
Position: Director

Kent Nelson, PE, Stinson Beach County Water District
3785 Shoreline Hwy
Stinson Beach, CA 94970
Phone: 415.868.1333, ext. 100
Email: knelson@stinsonwater.org
Position: General Manager

J. Bruce Rupp, Humboldt Bay Municipal Water District
828 7th Street
Eureka, CA 95501
Phone: 707.443.5018
Direct: 707.498.0522
Email: rupp@hbmwd.com
Position: Director

Vacant

REGION **MAP**

www.acwa.com

REGIONS **1, 3, 5**

Jennifer Rotz
Senior Regional Affairs Representative
jenniferr@acwa.com

REGIONS **2, 6, 7**

Matt Overton
Regional Affairs Representative II
matto@acwa.com

REGION **4**

Ana Javaid
Senior Region & Member Engagement Specialist
anaj@acwa.com

REGIONS **8, 9, 10**

Michael Cervantes
Senior Regional Affairs Representative
michaelc@acwa.com

ACWA
Association of California Water Agencies

Rev. 05/02/2025

ACWA Public Water Agency Members by County

Alameda
Alameda County Water District
City of Pleasanton
Dublin San Ramon Services District
East Bay Municipal Utility District
Zone 7 Water Agency

Alpine
Bear Valley Water District
Kirkwood Meadows PUD

Amador
Amador Water Agency

Butte
Biggs-West Gridley WD
Butte Water District
Ducor Community Services District
Paradise Irrigation District
Reclamation District #2047
Richvale Irrigation District
South Feather Water + Power Agency
Thermalito Water & Sewer District
Western Canal Water District

Calaveras
Calaveras County Water District
Calaveras Public Utility District
San Andreas Sanitary District
Union Public Utility District
Utica Water Power Authority

Colusa
Knights Landing Ridge Drainage District
Princeton-Codora-Glenn ID
Reclamation District #1004
Reclamation District #108
Sacramento River West Side Levee District
Sites Project Joint Powers Authority

Contra Costa
Byron Bethany Irrigation District
Contra Costa Water District
Diablo Water District
East Contra Costa Irrigation District

El Dorado
El Dorado County Water Agency
El Dorado Irrigation District
Georgetown Divide PUD
South Tahoe Public Utilities District

Fresno
Consolidated Irrigation District
Dudley Ridge Water District
Firebaugh Canal Water District
Free Water County Water District
Fresno Irrigation District
Fresno Metropolitan Flood Control District
Fresno Slough Water District
Friant North Authority
James Irrigation District
Kings River Water District
Laguna Irrigation District
Laton Community Service District
McMullin Area Groundwater Sustainability Agency
Mid-Valley Water District
Orange Cove Irrigation District
Pacheco Water District
Panoche Drainage District
Panoche Water District
Pinedale County Water District
Raisin City Water District
Reclamation District #1606
Riverdale Irrigation District
Root Creek Water District
Sierra Cedars CSD
Tranquility Irrigation District
Westlands Water District

Glenn
Glenn-Colusa Irrigation District
Glide Water District
Kanawha Water District
Provident Irrigation District
Reclamation District #2047
Tehama Colusa Canal Authority

Humboldt
Humboldt Bay Municipal Water District
Humboldt CSD
McKinleyville CSD

Imperial
Bard Water District
Imperial Irrigation District

Inyo
Wheeler Crest CSD
Sierra Highlands CSD

Kern
Arvin-Edison Water Storage District
Belridge Water Storage District
Berrenda Mesa Water District
Boron CSD
Buena Vista Water Storage District
Cawelo Water District
City of Tehachapi
Delano-Earlimart ID Groundwater Sustainability
Delano-Earlimart Irrigation District
Frazier Park Public Utilities District
Golden Hills CSD
Groundwater Banking JPA
Indian Wells Valley Water District
Kern County Water Agency
Kern Delta Water District
Kern Tulare Water District
Lost Hills Water District
Mojave PUD
North Kern WSD
Rand Communities WD
Rosamond CSD
Rosedale-Rio Bravo WSD
Semitropic WSD
Shafter-Wasco ID
Southern San Joaquin MUD
South Valley Water Resources Authority
Tehachapi-Cummings County WD
West Kern WD
Westside Water Authority
Wheeler Ridge-Maricopa WSD

Kings
Angiola Water District
Atwell Island Water District
Corcoran Irrigation District
Deer Creek Storm Water District
El Rico GSA
Empire West Side Irrigation District
Green Valley Water District
Kings County Water District
Lakeside Irrigation Water District
Tri-County Water Authority
Tulare Lake Basin WSD
W.H. Wilbur Rec. District #825

Lake
Clearlake Oaks County WD
Hidden Valley Lake Community Services District

Los Angeles
Antelope Valley State Water Contractors
Antelope Valley-East Kern WA
Azusa Light & Water
Burbank Water & Power
Central Basin MWD
Cresenta Valley Water District
City of Glendora-Water Division
City of La Verne
City of Long Beach Water Dept.
Devils Den Water District
Foothill Municipal Water District
Glendale Water & Power
Kinneloa Irrigation District
La Canada Irrigation District
La Puente Valley County WD
Las Virgenes Municipal WD
Littlerock Creek Irrigation District
Los Angeles County Waterworks Districts
Los Angeles Dept. of Water Power
Main San Gabriel Basin Watermaster
Metropolitan Water District of Southern California
Orchard Dale Water District
Palm Ranch Irrigation District
Palmdale Water District
Pasadena Water & Power
Pico Water District
Pomona-Walnut-Rowland JWLC
Puente Basin Water Agency
Quartz Hill Water Districts
Rowland Water District
San Gabriel Basin Water Quality Authority
San Gabriel County Water District
San Gabriel Valley MWD
Santa Clarita Valley Water Agency
Spadra Basin Groundwater Sustainability Agency
SCV Groundwater Sustainability Agency
Southeast Water Coalition JPA
South Montebello ID
Three Valleys Municipal WD
Upper San Gabriel Valley MWD
Upper Santa Clara Valley Joint Power Authority
Valley County Water District
Walnut Valley Water District
Water Replenishment District of Southern California
West Basin Municipal Water District

Madera
Chowchilla Water District
Gravelly Ford Water District
Le Grand-Athlone Water District
Madera County Water and Natural Resources
Madera Irrigation District
Madera Water District
Madera-Chowchilla Water and PA

Marin
Bolinas Community PUD
Marin Municipal Water District
North Marin Water District
Stinson Beach County Water District

Mariposa
Mariposa Public Utilities District

Mendocino
Brooktrails Township CSD
Calpella County Water District
Laytonville County Water District
Millview County Water District
Redwood Valley County WD
Willow County Water District

Merced
Central California Irrigation District
Delhi County Water District
Eastside Water District
East Turlock Subbasin Groundwater Sustainability Agency
Grassland Water District
Henry Miller Rec. District #2131
Le Grand CSD
Merced Integrated Regional Water Management Authority
Merced Irrigation District
Merced Irrigation-Urban GSA
Planada CSD
San Luis & Delta-Mendota WA
San Luis Water District

Mono
June Lake PUD
Mammoth Community WD

Monterey
Aromas Water District
Castroville Community Services District
Marina Coast Water District
Monterey County Water Resources Agency
Monterey One Water
Monterey Peninsula Water Management District
Pebble Beach Community Services District

Napa
Circle Oaks County Water District

Nevada
Nevada Irrigation District
San Juan Ridge County WD
Sierra Lakes County Water District
Truckee Donner PUD

Orange
City of Newport Beach
City of Santa Ana
East Orange County Water District
El Toro Water District
Irvine Ranch Water District
La Habra Heights County Water District
Laguna Beach County Water District
Mesa Water District
Moulton Niguel Water District
MWD of Orange County
Orange County Water District
Santa Margarita Water District
Santiago Aqueduct Commission
Serrano Water District
South Coast Water District
Trabuco Canyon Water District
West Orange County Water Board
Yorba Linda Water District

Placer
City of Lincoln
City of Roseville
Midway Heights County WD
Placer County Water Agency
San Juan Water District
Tahoe City Public Utilities District

Riverside
Beaumont-Cherry Valley WD
Benford-Coldwater Groundwater Sustainability Agency
City of Corona Dept. of Water & Power
Coachella Valley Water District
Coachella Water Authority
Desert Water Agency
Eastern Municipal Water District
Elsinore Valley MWD
Idyllwild Water District
Indio Water Authority
Jurupa Community Services District
Lake Hemet Municipal WD
Mission Springs Water District
Palo Verde Irrigation District
Pinyon Pines County Water District
Rancho California Water District
Riverside County Flood Control & Water Conservation District
Riverside Public Utilities
Salton Sea Authority
San Gorgonio Pass Water Agency
Santa Ana Watershed Project Authority
Santa Rosa Regional Resources Authority
Western Municipal Water District

Sacramento
American River Flood Control District
Carmichael Water District
Citrus Heights Water District
City of Folsom
City of Sacramento - Dept. of Utilities
Delta Conveyance Design and Construction Authority
Elk Grove Water District, Dept. of FRCD
Fair Oaks Water District
North Delta Water Agency
Omochumne-Hartnell WD
Reclamation District #744
Reclamation District #1000
Rio Linda/Elverta Community WD
Sacramento County Water Agency
Sacramento Suburban WD
South Yuba Water District

San Benito
City of San Juan Bautista
San Benito County Water District
Sunnyslope County Water District

San Bernardino
Apple Valley Foothill County WD
Apple Valley Heights County WD
Bear Valley Basin Groundwater Sustainability Agency
Big Bear City Community Services District
Big Bear Municipal Water District
Chino Basin Water Conservation District
Chino Basin Watermaster
City of Rialto/Rialto Utility Authority
Crestline Village Water District
Crestline-Lake Arrowhead WA
Cucamonga Valley Water District
East Valley Water District
Hi-Desert Water District
Inland Empire Utilities Agency
Joshua Basin Water District
Lake Arrowhead CSD
Mariana Ranchos County WD
Mojave Water Agency
Monte Vista Water District
San Bernardino Valley Municipal Water District
San Bernardino Valley Water Conservation District
Twentynine Palms Water District
West Valley Water District

San Diego
Borrego Water District
Carlsbad Municipal Water District
City of Escondido
City of Oceanside-Water Utilities Dept.
City of San Diego Public Utilities
Fallbrook Public Utility District
Helix Water District
Lakeside Water District
Majestic Pines Community Services District
Olivenhain Municipal Water District
Otay Water District
Padre Dam Municipal Water District
Rainbow Municipal Water District
Ramona Municipal Water District
Rincon del Diablo Municipal Water District
San Diego County Water Authority
San Dieguito Water District
Santa Fe Irrigation District
South Bay Water
Sweetwater Authority
Upper San Luis Rey RCD
Vallecitos Water District
Valley Center Municipal Water District
Vista Irrigation District
Wynola Water District
Yuima Municipal Water District

San Francisco
San Francisco Public Utility Commission

San Joaquin
Banta-Carbona Irrigation District
Central San Joaquin Water Conservation District
North San Joaquin Water Conservation District
Pescadero Reclamation District #2058
Reclamation District #2026
South San Joaquin Irrigation District
Stockton East Water District
The West Side Irrigation District
Woodbridge Irrigation District

San Mateo
Bay Area Water Supply & Conservation Agency
Coastside County Water District
Mid-Peninsula Water District
Montara Water & Sanitary District
North Coast County Water District
San Francisquito Creek Joint Powers Authority
San Mateo Flood and Sea Level Rise Resiliency District
Westborough Water District

Santa Barbara
Cachuma Operation and Maintenance Board
Carpinteria Valley Water District
Central Coast Water Authority
City of Buellton
City of Santa Barbara
Goleta Water District
Los Alamos Community Services District
Mission Hills Community Services District
Montecito Sanitation District
Montecito Water District
Santa Ynez River Water Conservation District Improvement District No. 1
Vandenberg Village Community Services District

Santa Clara
Purissima Hills Water District
Valley Water

Santa Cruz
Central Water District
City of Santa Cruz Water Dept.
Pajaro Valley Water Management Agency
Pajaro/Sunny Mesa Community Services District
Scotts Valley Water District
Soquel Creek Water District

Shasta
Bella Vista Water District
Centerville Community Services District
City of Redding Water Utility
Clear Creek Community Services District
Cottonwood Water District
Fall River Valley Community Services District
Mountain Gate Community Services District
Rio Alto Water District
Shasta County Water Agency

Sierra
Sierra County WWD #1

Siskiyou
Montague Water Conservation District
Scott Valley Irrigation District
Tulelake Irrigation District

Solano
City of Benicia
City of Fairfield
City of Vacaville, Utilities Department
City of Vallejo
Maine Prairie Water District
Reclamation District #2068
Rural North Vacaville Water District
Solano County Water Agency
Solano Irrigation District
Suisun-Solano Water Authority

Sonoma
Bodega Bay PUD
City of Petaluma
City of Santa Rosa - Water Dept.
Forestville Water District
Sonoma Mountain County WD
Sonoma Water
Valley of the Moon Water District

Stanislaus
City of Modesto, Utilities Department
Del Puerto Water District
Lake Don Pedro Community Services District
Modesto Irrigation District
Oakdale Irrigation District
Patterson Irrigation District
Stanislaus Regional Water Authority
Turlock Irrigation District
West Stanislaus Irrigation District

Sutter
Brophy Water District
Feather Water District
Reclamation District #1500
South Sutter Water District
Sutter Extension Water District

Tehama
Corning Water District

Trinity
Weaverville Community Services District

Tulare
Alpaugh Community Services District
Alpaugh Irrigation District
Alta Irrigation District
Exeter Irrigation District
Friant Power Authority
Friant Water Authority
Ivanhoe Irrigation District
Ivanhoe Public Utilities District
Kaweah Delta Water Conservation District
Kings River East Groundwater Sustainability Agency
Kings River Water District
Lindsay-Strathmore Irrigation District
Lower Tule River Irrigation District
Lower Tule River Irrigation District GSA
Mid-Kaweah Groundwater Sustainability Agency
Orosi Public Utilities District
Pixley Irrigation District
Pixley Irrigation District GSA
Porterville Irrigation District
Saucelito Irrigation District
South Valley Water Association
South Valley Water Banking Authority
St. Johns Water District
Stone Corral Irrigation District
Terra Bella Irrigation District
Tri-Districts Water Authority
Tri-Valley Water District
Tulare Irrigation District

Tuolumne
Tri-Dam Project
Tuolumne County Water Agency
Tuolumne Utilities District

Ventura
Arroyo Santa Rosa GSA
Calleguas Municipal Water District
Camrosa Water District
Casitas Municipal Water District
Channel Islands Beach Community Services District
City of Camarillo
County of Ventura Public Works
Pleasant Valley County Water District
Triunfo Water & Sanitation District
United Water Conservation District
Ventura River Water District
Ventura Water, City of Ventura

Yolo
Dunnigan Water District
Reclamation District #2035
Reclamation District #307
Reclamation District #999
Woodland Davis Clean Water Agency
Yolo County Flood Control and Water Conservation District

Yuba
Browns Valley Irrigation District
Camp Far West Irrigation District
City of Yuba City
North Yuba Water District
Ramirez Water District
Reclamation District 784
Yuba County Water Agency

Last Updated: August 5, 2026

RESOLUTION 26-06

**RESOLUTION OF THE BOARD OF DIRECTORS OF
NORTH MARIN WATER DISTRICT
PLACING IN NOMINATION KEN EICHSTAEDT
AS A MEMBER OF THE ASSOCIATION OF CALIFORNIA WATER AGENCIES
REGION 1 BOARD**

WHEREAS, The Board of Directors of the North Marin Water District does encourage and support the participation of its members in the affairs of the Association of California Water Agencies (ACWA); and

WHEREAS, Director Ken Eichstaedt has indicated a desire to serve as a Board Member of ACWA Region 1.

NOW, THEREFORE, BE IT RESOLVED that the Board of Directors of the North Marin Water District as follows:

1. Does hereby declare each of the foregoing recitals true and correct and fully incorporated herein.
2. Does place its full and unreserved support in the nomination of Ken Eichstaedt for the Board Member of ACWA Region 1.
3. Does hereby determine that the expenses attendant with the service of Ken Eichstaedt in ACWA Region 1 shall be borne by the North Marin Water District.

* * * * * * *

I hereby certify that the foregoing is a true and complete copy of a resolution duly and regularly adopted by the Board of Directors of NORTH MARIN WATER DISTRICT at a regular meeting of said Board held on the 15th day of September, 2026, by the following vote:

AYES:
NOES:
ABSTAIN:
ABSENT:

(SEAL)

_____
Eileen Mulliner, District Secretary
North Marin Water District

9

NORTH MARIN WATER DISTRICT

MEMORANDUM

To: Board of Directors September 15, 2026

From: Tim Kennedy, Director of Operations TK

Subj: Oceana Marin Wastewater System – Acceptance of 2026 Sewer System Management Plan Update
X:\MAINT SUP\2026\SSMP_Update BOD memo_2026.doc

RECOMMENDED ACTION: That the Board accept the Oceana Marin 2026 Sewer System Management Plan Update

FINANCIAL IMPACT: None at this time

Staff enlisted the services of V.W. Housen and Associates to update the Oceana Marin Sewer System Management Plan (SSMP), as required by the State Water Resource Control Board (SWRCB) Order No. 2022-0103-DWQ, "Statewide Waste Discharge Requirements General Order for Sanitary Sewer Systems". The general order requires the SSMP to be updated every six years. The 2026 SSMP was prepared with information from an internal audit of the 2021 SSMP and contains more recent information on system operating conditions, maintenance practices, and regulatory requirements. The 2026 SSMP includes a Spill Emergency Response Plan and a Pump Station Emergency Response Plan.

Alignment with Strategic Plan

Goal 2: Foster Organizational Excellence; Action 2.2 Standardize safety training and emergency preparedness using new Emergency Response Plan as a guide.

The 2026 SSMP bolsters the District's emergency preparedness as it pertains to the Oceana Marin enterprise by implementing emergency response plans for the sewer system and pump stations.

RECOMMENDATION

That the Board accept the Oceana Marin 2026 Sewer System Management Plan Update.

ATTACHMENT:

1. Oceana Marin 2026 Sewer System Management Plan Update

ATTACHMENT 1

NORTH MARIN WATER DISTRICT

SEWER SYSTEM MANAGEMENT PLAN

NMWD Job# 8-4080-00
North Marin Water District – Oceana Marin Sewer
Updated August 2026

Waste Discharge I.D. No.: 1SSO10052

Prepared by:

V.W. HOUSEN & ASSOCIATES

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- SSMP Overview System Map

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- North Marin Water District FY 2026/27 Operating Expenses, Budget Summary, Five-Year Financial Forecast, CIP, and CIP Projects
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LIST OF ACRONYMS

BMP	Best Management Practice
CCTV	Closed-Circuit Television
CIP	Capital Improvement Plan
CIWQS	California Integrated Water Quality System
DISTRICT	North Marin Water District
FOG	Fats, Oils and Grease
GIS	Geographical Information System
GPM	Gallons per Minute
GWDR	General Waste Discharge Requirements, also called the Statewide WDR
I&I	Inflow & Infiltration
LRO	Legally Responsible Official
NASSCO	National Association of Sewer System Companies
NMWD	North Marin Water District
NPDES	National Pollution Discharge Elimination System
OES	California Office of Emergency Services (Previously Cal-EMA)
PACP	Pipeline Assessment and Certification Program
PM	Preventive Maintenance
PPE	Personal Protective Equipment
SERP	Spill Emergency Response Plan
SSMP	Sewer System Management Plan
Spill	Sanitary Sewer Spill, previous referenced as Spill
SWRCB	State Water Resources Control Board
WDID	Waste Discharge ID Number

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LIST OF TERMS

Blockage – An object that partially or fully hinders flow through a sewer pipeline. The blockage can be caused by debris in the sewer, grease buildup, root intrusion, or a partial or full collapse of the pipeline. Also known as a stoppage.

California Integrated Water Quality System (CIWQS) – A computer system used by the State and Regional Water Quality Control Boards to track information about Spills, among other information. CIWQS is the tool used for online submittal of Spill details, which are then made available to the public. Website: http://www.swrcb.ca.gov/ciwqs/

Enrollee – The legal public entity that owns a sanitary sewer system, as defined by the GWDR. Also known as a sewer system agency or wastewater collection system agency.

FOG Control Program –Program implemented at the discretion of the agency, based on the identified causes of sewer spills, to reduce the discharge of fats, oils and grease into the sewer system.

Geographic Information System (GIS) – A database linked with mapping that records sewer system information. The GIS database could include sewer features such as pipe location, diameter, material, condition, or last date cleaned or repaired. GIS maps also typically contain base information such as streets and parcels.

Infiltration – The seepage of groundwater into a sewer system, including from service connections. Seepage frequently occurs through defective or cracked pipes, pipe joints, connections or manhole walls and joints.

Inflow – Water discharged into a sewer system from such sources as roof leaders, cellars, yard and area drains, foundation drains, through holes in manhole covers, cross connections from the storm system or street wash waters. Inflow differs from infiltration in that it is a direct discharge into the sewer rather than a leak through defects in the sewer.

Lateral or Private Lateral – The privately-owned sewer pipeline that conveys wastewater from the premises of a user to the District's sewer system. The upper lateral extends from the building to property line (or easement line). The lower lateral extends from the property or easement line to the connection to the District-owned sewer main pipe.

Preventive Maintenance (PM) – Regularly scheduled servicing of machinery, infrastructure or other equipment using appropriate tools, tests, and lubricants.

Rehabilitation and Replacement Plan (also referred to as a Capital Improvement Plan) – Identifies and prioritizes system deficiencies and implements short-term and long-term rehabilitation actions to address each deficiency.

Sanitary Sewer Spill (Spill) – Any spill, release, discharge or diversion of untreated or partially treated wastewater from a sanitary sewer system, including spills or releases that reach waters of the United States, spills or releases that *do not* reach water of the United States, and backups into buildings and/or private property caused by conditions within the publicly owned portion of the sewer system.

Sanitary Sewer System – Any system of pipes, pump (lift) stations, sewer lines, or other conveyances, upstream of the wastewater treatment plant ponds used to collect and convey wastewater to the wastewater treatment pond.

Satellite Collection System – The portion, if any, of a sanitary sewer system that is owned or operated by a different public agency or user.

Sewer System Management Plan (SSMP) – A series of written programs that address how a collection system owner/operator conducts daily business. Each SSMP is unique for an individual discharger. The plan includes provisions to provide proper and efficient management, operation, and maintenance of sanitary sewer systems, while taking into consideration risk management and cost benefit.

Spill Emergency Response Plan (SERP) – This document identifies measures that are needed to respond to sanitary sewer spills in a way that maximizes the protection of public health and the environment.

State Water Resources Control Board – Also called the State Board. This agency developed and passed the Statewide Waste Discharge Requirements for collection systems and maintains the Spill reporting web site. The North Coast Regional Water Quality Control Board has the oversight of the Oceana Marin Sewer System.

System Evaluation and Capacity Assurance Plan – A required component of an agency's SSMP that provides hydraulic capacity of key sanitary sewer system elements for dry weather peak flow conditions, as well as the appropriate design storm or wet weather event.

Statewide Waste Discharge Requirements – The Statewide General Waste Discharge Requirements for Sanitary Sewer Systems was adopted by the SWCRB in 2006 to provide a structure and guidance for SSMP development. Also known as Order No. 2006-0003-DWQ.

Wastewater Collection System – See Sanitary Sewer System.

ELEMENT 1 – GOALS AND INTRODUCTION

This element of the North Marin Water District (District) Sewer System Management Plan (SSMP) describes the SSMP's purpose, organization, and the regulatory requirements that it satisfies.

1.1 SSMP Requirements

Requirements for the Goals and Introduction element of the SSMP are described in the SWRCB GWDR as follows:

- Provide a plan and schedule to properly manage, operate, and maintain all parts of its wastewater collection system in order to reduce and prevent spills, as well as contain and mitigate any spills that occur;
- Describe the sewer system management program, including Plan implementation and updates;
- Include an SSMP update schedule;
- Provide an overview of the sewer system assets and service area.

1.2 SSMP Objectives

The objectives of the SSMP are to accomplish the following:

1. Establish goals that align the District's sewer collection system operation, management and capacity assurance activities , in support of this SSMP and as falls within the Oceana Marin operating and capital budgets.
2. Comply with the GWDR through provision of the following:
    - Elements I through XI, following the outline of the GWDR, including a description of the regulatory requirements and a summary of existing and planned documents and plans related to each element
    - Appendices that are amended over time to reflect changes in contact personnel, job descriptions, policies, procedures and programs

1.3 North Marin Water District SSMP Goals

The goals of the District's SSMP are to accomplish the following:

- To properly manage, operate, and maintain all parts of the wastewater collection system, so as to preserve and protect the public's investment in the system within available budget.
- To provide adequate capacity to convey peak flows to the wastewater treatment plant without Spills.

- To minimize the frequency and duration of Spills, including implementing regular, proactive maintenance of the system to remove issues that may cause sewer backups or Spills.
- To mitigate the impact of Spills on public health and the environment.
- To respond quickly and respectfully to public notifications of Spills or other collection system problems.
- To collect complete and accurate information regarding Spills for reporting to the appropriate regulatory agencies.
- To uphold the District's standards and specifications on newly constructed public and private sewers.
- To provide District staff with the tools and training needed to perform their work effectively and achieve the District's goals.

1.4 Regulatory Context

1.4.1 State Water Resources Control Board Order No. 2022-0103-DWQ

The District's SSMP has been updated to be in compliance with the recently-adopted State Water Resource Control Board (SWRCB) Order No. 2022-0103-DWQ, "Statewide Waste Discharge Requirements General Order for Sanitary Sewer Systems" (GWDR). The SSMP is maintained on the District's website, and is available to the public upon request. The GWDR requires all public entities that own or operate a wastewater collection system greater than one mile in length to comply with the elements of the GWDR. Noncompliance with the Order constitutes a violation of the California Water Code and is grounds for enforcement action. In summary, the GWDR requires that:

- In the event of a spill, all feasible steps shall be taken to control the released volume and prevent untreated wastewater from entering storm drains and water bodies.
- If a spill occurs, it must be reported to the SWRCB using California Integrated Water Quality System (CIWQS), the online reporting system developed by the SWRCB, as outlined in the GWDR.
- An SSMP with all mandatory elements must be developed and approved by the governing body that owns or is responsible for the operation of the wastewater collection system. The SSMP must include provisions to provide proper and efficient management, operation, and maintenance of the sanitary sewer system.

A copy of this Order can be found through the State Water Resources Control Board's website:

https://www.waterboards.ca.gov/water_issues/programs/sso/

The District's Waste Discharge ID Number (WDID) for the California Integrated Water Quality System (CIWQS) is 1SSO10052.

1.4.2 Additional Regulatory Requirements

The following regulatory requirements also establish the need for the District to maintain and implement a comprehensive SSMP, follow procedures to minimize the potential of spills, and demonstrate the proper and efficient management, operation and maintenance of its wastewater collection systems.

California Water Code Section 13271, California Code of Regulations: Section 13271 of the California Water Code, Title 23 of the California Code of Regulations, prohibits the discharge of sewage and hazardous material into the Waters of the State and requires the proper notification of authorized agencies in the event of a spill. Entities that do not properly follow the requirements of this section may be found guilty of a misdemeanor and punished by fine, imprisonment, or both.

Clean Water Act, Section 1251 of Chapter 33 of the United States Code: In 1972, the federal Congress enacted the Federal Water Pollution Control Act, commonly known as the Clean Water Act (CWA). The CWA prohibits the discharge of pollutants, including sewage, into public waters of the United States. The federal government has the authority to enforce compliance with the CWA via specific permits, such as National Pollutant Discharge Elimination System (NPDES) permits, as well as court action, such as administrative orders and consent decrees.

1.5 SSMP Organization

This SSMP has been prepared in accordance with the requirements of Order No. 2022-0103-DWQ and includes all eleven mandatory elements identified in the General Order. This document begins with an introduction to the SSMP and an overview of the District and its collection system. The body of the document is organized to discuss the eleven GWDR elements in the order that they are presented in SWRCB Order No.2022-0103-DWQ.

<u>SSMP Elements</u>

1. Goals and Introduction;
2. Organization;
3. Legal Authority;
4. Operations and Maintenance Program;
5. Design and Performance Provisions;
6. Spill Emergency Response Plan;

7. Sewer Pipe Blockage Control Program;
8. System Evaluation, Capacity Assurance and Capital Improvements;
9. Monitoring, Measurement and Program Modifications;
10. Internal Audits;
11. Communication Program.

1.6 Schedule for SSMP Updates and Audits

Table 1-1 presents a schedule for Plan updates, including the schedule for conducting internal audits. The schedule includes milestones for incorporation of activities addressing prevention of sewer spills.

Table 1-1. Required Elements and Dates of Original Submittal/Adopted SSMP Update

UPDATE	REQUIRED DATE OF SUBMITTAL	ACTUAL COMPLETION DATE
3-Year SSMP Audit ending August 2, 2025	February 2, 2026	May 2026
2026 SSMP Update including audit findings	August 2, 2026	September 15, 2026
3-Year SSMP Audit ending August 2, 2028	February 2, 2029	
3-Year SSMP Audit ending August 2, 2031	February 2, 2032	
2032 SSMP Update including audit findings	August 2, 2032	
3-Year SSMP Audit ending August 2, 2034	February 2, 2035	
3-Year SSMP Audit ending August 2, 2037	February 2, 2038	
2038 SSMP Update including audit findings	August 2, 2038	

1.7 District Service Area and Collection System

The North Marin Water District ("NMWD" or "District") primarily serves the City of Novato and surrounding unincorporated areas in Marin County with potable water services, and is also responsible for providing wastewater services to the Oceana Marin Community. Oceana Marin, located in Marin County, was originally developed in the 1960's and has now been built into a 251-lot subdivision (approximately one square mile). Oceana Marin is located directly north of the unincorporated community of Dillon Beach, with Bodega Bay to the west, as shown on Figure 1-1. The District provides wastewater collection services to 241 residential service

Figure 1-1. Approximate Boundary of North Marin Water District Oceana Marin Sewer Service Area

connections and approximately 500 residents in the Oceana Marin service area[1]. Sewage is conveyed to a wastewater treatment plant that is located at the top of the headlands, just east of Oceana Marin, where wastewater is held and treated by aerobic decomposition.

The District's wastewater collection system includes approximately 4.4 miles of gravity sewer pipe and 0.7 miles of force main pipe, as well as two lift stations. The District's system conveys approximately 15,000 gallons per day of average dry weather flow to the wastewater treatment

[1] From Annual Comprehensive Financial Report for FY ended June 30, 2025 and 2024. https://nmwd.com/wp-content/uploads/2025/12/ACFR-Final-2025-2.pdf

plant. A map of the District's sewer system can be found in Appendix A. The District maintains maps of the sewer system in PDF format and information related to cleaning, inspections, and repairs in an Excel spreadsheet.

The District's sanitary sewer system serves 241 residential service connections and no commercial or industrial service connections. The District does not own or have operational responsibilities for sewer laterals. Based on District staff knowledge and available collection-system records, NMWD is not aware of any structures that intentionally divert stormwater into the sanitary sewer system.

Tables 1-2 below and 1-3 on the following page provide information about the District's sewer collection system assets as reported in the 2025 CIWQS Annual Report. Table 1-4, also on the following page, provides information about the District's two pump stations, Oceana Marin and North Street, which were constructed and/or upgraded between 1960 and 1979.

Table 1-2. Sewer Pipe Size by Percent of System from 2025 Annual Report

Pipe Diameter (inches)	Gravity Pipe Length (miles)	Percentage of Gravity System (by length)	Force main Pipe Length (miles)	Percentage of Force main System (by length)
6 or less	4.14	94%	0.70	100%
8	0.13	3%	0	0%
9 to 18	0.13	3%	0	0%
18 or larger	0	0%	0	0%
TOTAL	**4.40**	**100%**	**0.70**	**100%**

Table 1-3. Sewer System by Construction, Replacement, or Rehabilitation Period from 2025 Annual Report

Year Range	Percent of System Upgraded / Installed
2020-Present	0%
2000-2019	2%
1980-1999	3%
1960-1979	95%
1940-1959	0%
1920-1939	0%
1900-1919	0%
Before 1900	0%
Unknown Age	0%
TOTAL	**100%**

Table 1-4. Lift Station Information

Lift Station Name	No. of Pumps	Firm Capacity (gpm)
Oceana Marin	4 (2 sets of 2 pumps, each set in series)	120
North Street	2	150

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ELEMENT 2 - ORGANIZATION

The purpose of this section is to identify District staff responsible for implementing this SSMP, responding to Spill events, and meeting the Spill reporting requirements. This section also includes the designation of the Legally Responsible Official (LRO), who is the authorized representative to meet GWDR requirements for completing and certifying spill reports.

2.1 SSMP Requirements

The requirements for the Organization element of the SSMP are described in the SWRCB GWDR as follows:

The SSMP Must Identify:

- The name of the Legally Responsible Official as required in Section 5.1 of the GWDR;
- The position titles, telephone numbers, and email addresses for management, administrative, and maintenance positions responsible for implementing specific measures in the SSMP elements;
- Organizational lines of authority through an organization chart or similar narrative document; and
- The chain of communication for reporting spills, from receipt of a complaint or other information, including the person responsible for reporting spills to the State and Regional Water Board and other agencies if applicable (such as County Health Officer, County Environmental Health Agency, and/or State Office of Emergency Services (OES)).

2.2 Organization Chart and SSMP Responsibilities

The District's organization chart as related to the SSMP is shown in Figure 2-1. Roles and responsibilities of key personnel involved in the wastewater collection system are as noted below.

Board of Directors: Adopts SSMP plan and policy. Approves budget to implement SSMP.

General Manager: Appointed by the Board of Directors; Responsible for the overall management of SSMP budget and performance.

Director of Operation: Serves as the Legally Responsible Official (LRO); may initiate Spill reports; finalizes Spill reports; develops, plans, and implements the SSMP; monitors SSMP budget and performance; coordinates and reviews capital improvement program projects with the Assistant General Manager (AGM)/Director of Engineering; ensures that Spill emergency response and subsequent investigations are appropriately documented for reporting purposes.

Director of Utilities: Coordinates and oversees field personnel and their associated responsibilities. Reviews and provides input on Spill response activities.

Maintenance Supervisor: Coordinates and oversees preventative and corrective maintenance at the lift station pump stations.

Treatment and Distribution Supervisor: May initiate Spill reports; oversees day-to-day activities of Operator in Charge and Designated Operator in Charge. Provides direction and input to Operator in Charge and Designated Operator in Charge. Helps to manage SSMP budget and performance.

Operator in Charge: May initiate Spill reports; directs contractor activities in cleaning and television inspection of the collection system and any system improvements. Responsible for the overall day-to-day operation of the sewer system. Updates and maintains sewer system maps.

AGM/Director of Engineering: Manages District's engineering records; works with Director of Operations to define and coordinate CIP projects. Manages District-wide systems engineering, project design, construction management and project inspection.

Maintenance Program Assistant: Documents preventive and corrective maintenance through the District's Computerized Maintenance Management System.

Engineering Administrative Assistant: Assists AGM/Director of Engineering in managing District's Engineering records.

Director of Administration Services: Addresses insurance claims related to public property damage caused by Spills originating from the public sewer main.

Figure 2-1. SSMP Organization Chart

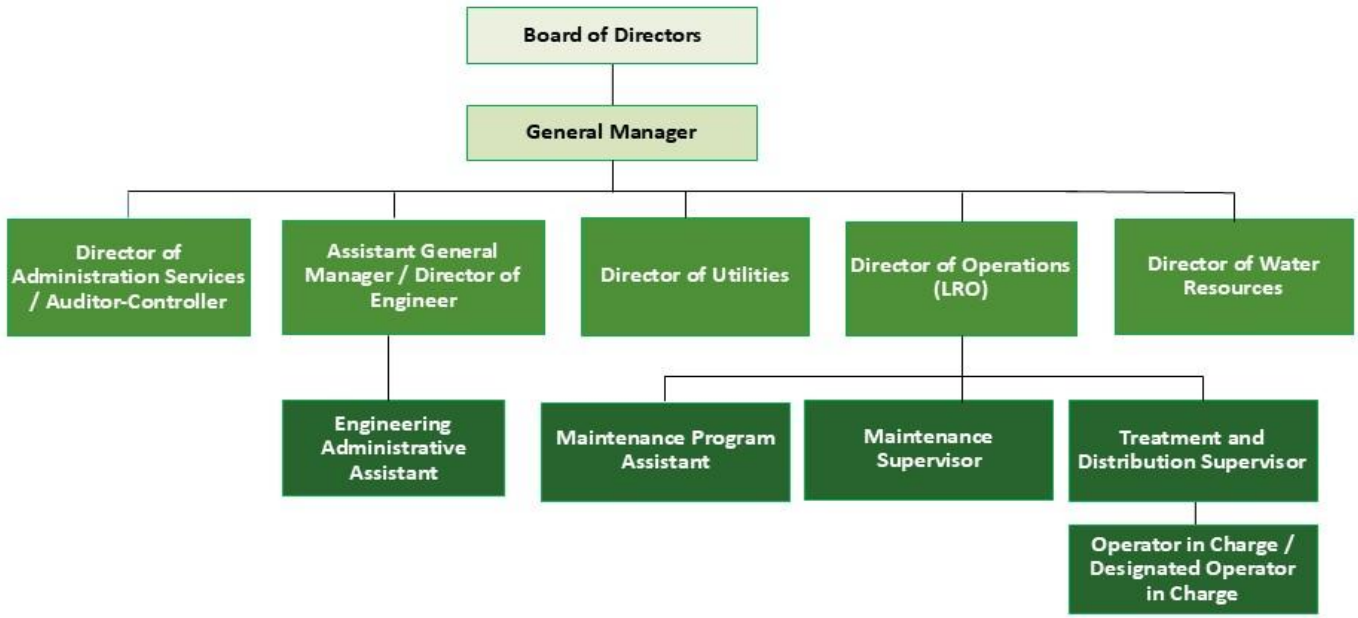


Table 2-1 on the following page summarizes the individuals who are responsible for each section of the SSMP.

Table 2-1. SSMP Responsibilities

SSMP Element	Responsible Position
I. Goals and Introduction	The General Manager leads staff in the implementation of the SSMP goals.
II. Organization	The Board of Directors updates the organization structure. The General Manager, with the help of the Director of Operations, manages SSMP implementation assignments and amends Spill response and reporting chains of communication, as needed.
III. Legal Authority	The General Manager upholds the Municipal Code and drafts new ordinances as needed.
IV. Operations & Maintenance	The General Manager and AGM/Director of Engineering manage resources and budget with support from the Director of Operations. The Director of Operations prioritizes preventive maintenance (cleaning and pipe inspection), and trains District staff. The AGM/Director of Engineering maintains the system map, with input from the Operations Department.
V. Design and Construction Standards	The Engineering Department reviews design and construction documents to ensure that all construction projects meet the adopted standards. Construction inspection is managed by District engineering staff.
VI. Spill Emergency Response Plan	The Director of Operations, with help from operations and maintenance personnel, ensures that the SERP is up to date and followed when a spill occurs.
VII. Pipe Blockage Control Program	The District has no commercial connections and does not have a history of repeat spills due to FOG, debris, or rags within the past 5 years. Therefore, the District does not require a formal Pipe Blockage Control Program.
VIII. System Evaluation and Capacity Assurance	The District has no capacity constraints. The Director of Operations plans repairs to reduce I&I, in collaboration with Treatment and Distribution Supervisor, the Operator in Charge, and the AGM/Director of Engineering.
IX. Monitoring, Measurement and Program Modifications	The Director of Operations and the Treatment and Distribution Supervisor monitor implementation and assess success of the SSMP program elements with assistance from staff.
X. Internal Audits	The Director of Operations oversees triennial SSMP audits.
XI. Communication Plan	The Board of Directors, General Manager, Director of Operations, and staff communicate with the public and nearby agencies of the SSMP.

2.3 Chain of Communication for Reporting

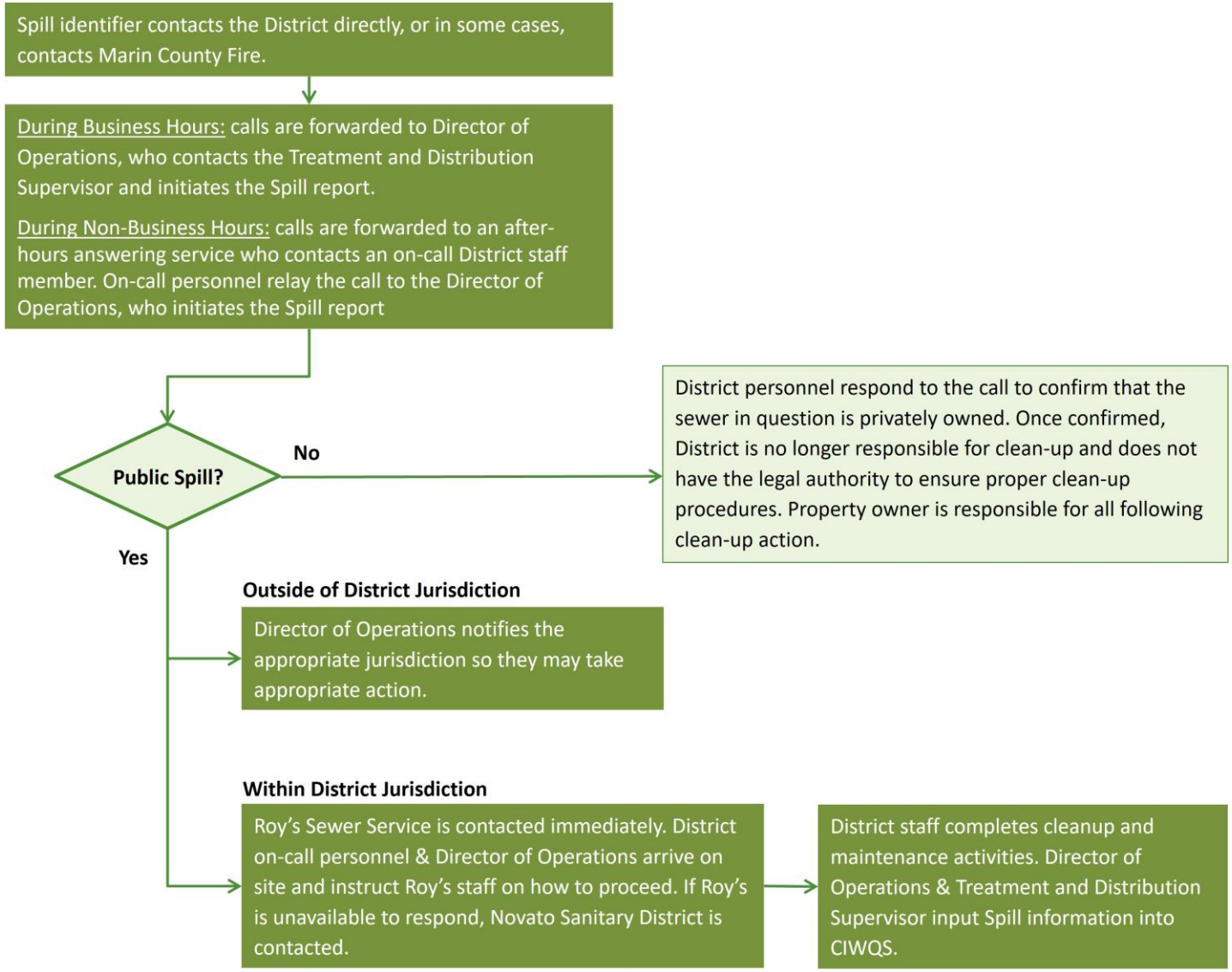
Figure 2-2 on the following page shows a simplified Chain of Communication for reporting spills.

Appendix A – Element 2 Documents

Appendix A includes the following documents related to this section. The information in these documents will change from time to time, and the documents in Appendix A may have been superseded. Please contact the Director of Operations for the most recent updates to the Appendix A documents.

- SSMP and SERP Contact List
- Mutual Aid and Assistance Agreement with Novato Sanitary District
- SSMP Overview System Map

Figure 2.2. Chain of Communication



ELEMENT 3 - LEGAL AUTHORITY

This element of the SSMP discusses the District's Legal Authority and establishes wastewater discharge requirements for the users of the Oceana Marin sewer system.

3.1 SSMP Requirements

The District must demonstrate, through collection system use ordinances, service agreements, or other legally binding procedures, that it 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 sewer 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, 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.

3.2 Legal Authority to Enforce SSMP Requirements

The District has legal authority to enforce SSMP requirements through Regulations 100 through 107, and Regulation 109. Copies of these regulations can be found on the District's website at: https://nmwd.com/about/regulations/. Specific sections related to the WDR requirements are described below.

3.2.1 Authority to Prevent Illicit Discharges into the Wastewater System

Regulation 105 prohibits the connection of leaders from roofs or surface drains for rainwater runoff to sewer mains or side-sewers. This regulation prohibits flow from surface or subsurface drainage rainwater, storm water, or seepage water into sewer mains or side sewers; additionally, no water from yard fountains, ponds, lawn sprays, yard drainage, cooling water or other unpolluted commercial or industrial process water shall be permitted.

Regulation 105 also prohibits the discharge of certain materials into sewers, including:

a. Any gasoline, naphtha, fuel oil or other flammable or explosive liquid, solid or gas;

b. Garbage that hasn't been shredded to such a degree that all particles shall be carried freely under the flow conditionals normally prevailing in sewer mains;

c. Ashes, cinders, sand, mud, straw, shavings, metal, glass, rags, feathers, tar, plastics, woof, fat, oil, grease, or any other solid or viscous substance capable of causing obstruction to the flow in sewer mains or other interferences with the proper operation of the sewage facilities;

d. Water or wastes having a pH lower than 5.5 or higher than 9.0, or having any corrosive property capable of causing harm, damage, or hazard to structures, equipment, personnel, or operation of the sewage facilities;

e. Water or wastes containing a toxic or poisonous substance in sufficient quantity to injure or interfere with any sewage treatment process or constitute a hazard to humans or animals or create any hazard in the sewage treatment facilities;

f. Effluent from any industrial garbage grinder or disposal unit or any other water or wastes containing suspended solids of such character and quantity that requires unusual attention or expense for transport or treatment;

g. Mineral oils, greases or products of a petroleum oils, motor oils, cutting oils, or grease trap wastes either as grease or as emulsified grease;

h. Any noxious, malodorous or toxic liquids, gases, fumes, vapors or substances capable of creating a public nuisance or hazard to life or are sufficient to prevent District personnel from safely entering into the sewer facilities for maintenance and repair;

i. Septic tank sludge, chemical toilet wastes, waste to which chemicals have been added for odor control or preservation, or the contents of grease traps or sand interceptors;

j. Water or waste with a temperature greater than 150 degrees F;

Regulation 105 discusses the pre-treatment of wastes, stating that the Applicant or owner shall provide all necessary wastewater treatment as required to comply with this Regulation and shall achieve compliance with all federal categorical pretreatment standards within the time limitations as specified by the Federal Pretreatment Regulations. The Applicant or Owner shall provide such pretreatment of sewage, if deemed necessary by the District:

A. Reduce the biochemical oxygen demand to 300 parts per million and the suspended solids to 500 parts per million by weight;

B. Reduce objectionable characteristics or constituents to within the limits specified by the district and the Regional Water Quality Control Board

3.2.2 Collaboration with Storm Sewer Agencies

The District does not currently have documented procedures to collaborate with storm sewer agencies for access during spill response activities. Procedures for coordination with storm sewer agencies will be developed and documented in the SSMP by June 30, 2027.

3.2.3 Authority to Require that Sewers and Connections are Properly Designed and Constructed

Regulation 103 requires construction of private sewer laterals to follow the NMWD Standard Drawings pertaining to Sewer Construction. Further, every building must be connected to the sewer main with its own lateral, except for buildings located on property owned by the same individual that may be served by the same lateral under specific conditions.

Regulation 103 allows an old building lateral to be used in connection with a new building only if an inspection is passed and the District determines that the lateral meets all current District requirements.

Regulation 103 requires laterals to be tested under the following circumstances:

a. Remodeling or enlargement of the property served involving the installation of any plumbing fixture;

b. Change of use of the building served as residential, commercial or industrial;

c. Connection to repair or replacement of the side-sewer;

d. Request by the District.

Regulation 103 requires that all laterals allow for gravity flow to the existing sewer main, and prohibits occupancy until all of the requirements listed above are met.

Similarly, Regulation 104 discusses requirements for the construction of sewer mains. All work must be performed by a competent and experienced contractor licensed for underground construction and with experienced laborers, in accordance with the approved plans and specifications. Installed facilities receive inspection by the District.

Regulation 105 requires any type or business or establishment where grease or other objectionable materials may be discharged in unusual quantities into a public sewer system to have a grease trap or oil and sand interceptor of the size and design to be approved by the District.

3.2.4 Authority to Have Access for Maintenance, Inspection, or Repairs for Portions of the Lateral Owned or Maintained by the Public Agency

The District does not own any portion of the lateral. The property owner has full responsibility for the private lateral up to the connection with the sewer main.

3.2.5 Authority to Limit the Discharge of Fats, Oils, and Grease and Oher Debris that may Cause Blockages

The District has the authority to limit the discharge of FOG and other debris through Regulation 105, as discussed above.

3.2.6 Authority to Enforce any Violation of its Sewer Ordinances

Regulation 107 states:

"Any person found to be violating any provision of these regulations shall be served by the General Manager or other authorized person with written notice stating the nature of the violation and providing a reasonable time limit for satisfactory correction. Continued habitation of any building or continued operation of any facility in violation of the provisions of these regulations is hereby declared to be a public nuisance."

Regulation 109 provides additional detail as to how the District's Regulations apply specifically to the Oceana Marin Sewer Service Area.

3.2.7 Obtain Easement Accessibility Agreements for Locations Requiring Sewer System O&M

Regulation 104 requires that all extensions of the sewer system shall be owned and controlled by the District. Regulation 104 states that: "District sewage facilities shall be located only in dedicated and accepted public streets, or within dedicated utility easements or within satisfactory easements granted to the District." For facilities located on private property, when access is required, the District confirms the associated easement or right of entry as required to maintain the facility.

Appendix B – Element 3 Documents

Appendix B includes the following documents related to this section. The information in these documents will change from time to time, and the documents in Appendix B may have been superseded. Please contact the Director of Operations for the most recent updates to the Appendix B documents.

- Regulation 100 – General Provisions
- Regulation 101 – Use of Sewer Main Required
- Regulation 102 – Private Sewage Disposal

- Regulation 103 – Side-Sewer Connections
- Regulation 104 – Sewage Facility Construction
- Regulation 105 – Use of Sewer Mains
- Regulation 106 – Application, Agreement, and Fees
- Regulation 107 – Enforcement
- Regulation 109 – Oceana Marin Sewer Service Rates and Charges

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ELEMENT 4 - OPERATION AND MAINTENANCE PROGRAM

This section of the SSMP discusses the District's mapping, operations, preventive maintenance (PM), inspection, training and outreach activities.

The categories that are addressed in Element 4 include:

- Collection System Mapping
- Resources and Budget
- Prioritized Preventive Maintenance
- Scheduled Inspections, Condition Assessments and Replacement Planning
- Critical Equipment and Spare Parts
- Training

4.1 SSMP Requirements

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

- An up-to-date map of the sanitary sewer system, showing all gravity line segments and manholes, pumping facilities, pressure pipes and valves, and applicable stormwater conveyance facilities;
- Scheduling and data collection system for preventive operation and maintenance activities by staff and contractors, including a system for scheduling regular inspections and maintenance of the sanitary sewer system with more frequent cleaning and maintenance targeted at known problem areas, including tree root areas;
- Regular visual and closed-circuit television (CCTV) inspections of manholes and sewer pipes;
- Internal and external training on a regular basis for staff and contractors in sanitary sewer system operations and maintenance; and
- Inventory of equipment and replacement parts, including identification of critical replacement parts.

4.2 Collection System Map Description

The District currently maintains its sewer collection system map in PDF format, as shown in Appendix A. The Operator in Charge is responsible for maintaining the collection-system map; the Engineering Department provides map revisions and technical support as needed. The map

shows the service area parcels, pipelines, cleanouts and cleanout IDs, manholes and manhole IDs, and lift stations. Stormwater facilities are currently not shown and may be added during the next map update.

4.3 Resources and Budget

The District prepares an annual budget, and funds improvements to the collection system as well as its potable water facilities. For FY2026-27, the District budgeted $431,000 for Oceana Marin O&M operating expenditures. Additionally, the District developed a 5-year, Capital Improvement Projects Plan that projects a budget through FY2030/31 for the District's sewer system. The District's budget and Capital Improvement Program is included in Appendix C.

4.4 Prioritized Preventative Maintenance

The District has administered its preventative maintenance program through Purchase Orders with Roy's Sewer Service. At times, when Roy's Sewer Service is not available, the District also has a mutual aid and assistance agreement with Novato Sanitary District ("NSD"), and has also contracted with Roto Rooter (Petaluma/Novato). A copy of the NSD agreement is included in Appendix A.

Preventive cleaning and maintenance activities are scheduled based on system need, as indicated by Supervisory Control and Data Acquisition (SCADA) alarms, CCTV findings, or onsite observations by the system operators. Sewer pipes with recurring or elevated maintenance needs are inspected or maintained more frequently, as warranted.

The District maintains available cleaning, inspection, and maintenance information through contractor records, work orders, and CCTV records. Most typically, CCTV inspection results identify pipes that require cleaning and/or other follow-up work. Inspected pipes are evaluated to determine whether future maintenance frequencies should be adjusted. The District will continue to refine its scheduling and recordkeeping practices as additional system information is collected.

4.5 Scheduled Inspections, Condition Assessment and Rehabilitation Plan

The District schedules CCTV inspection based on the time elapsed since the previous inspection, maintenance history, observed conditions, service calls, and available resources. Inspection results are used to prioritize future CCTV activities, maintenance, condition assessment, and rehabilitation needs.

The District utilizes Roy's Sewer Service for CCTV inspections and related cleaning services. Inspections utilize National Association of Sewer Services Companies (NASSCO) Pipeline Assessment Certification Program (PACP) standards for the coding and ranking of the defects. This data is used to help develop the CIP program, as well as inform the District of necessary or

immediate maintenance or structural repairs. Available funding is allocated to the highest priority collection system needs.

4.6 Training

All personnel and contractor employees who may have a role in responding to, reporting and/or mitigating a sewer system spill should receive training on the contents of the District's SERP. All new employees should receive training before they are placed in a position where they may have to respond. Current employees should receive annual refresher training on this plan and the procedures to be followed.

The District provides training on wastewater spill and cleanup activities, repairs, risks/hazards, and cleanup. This training includes information on spill notification, available equipment, initial response procedures, sewer bypass pumping, spill estimation, responding to force main breaks, and cleanup and disinfection. At the end of the training session, a quiz is provided to the attendees.

Currently, operators receive periodic training. In the future, personnel in the Utilities Department, the Maintenance Division, and the Water Resources Department will be provided the same training. The District's spill response contractor(s), including Roy's Sewer Service will conduct its own training.

Sewer spill response personnel should attend periodic training drills to ensure that employees are up to date on these procedures, equipment is in working order, and the required materials are readily available. The training drills should cover scenarios typically observed during sewer related emergencies (e.g., mainline blockage, mainline failure, force main failure, lift station failure, and lateral blockage). The District will develop a program for these training drills in concurrence with expanding the training program as discussed above.

The District maintains training and test records related to its annual training.

4.7 Contingency Equipment and Replacement Inventories

The District maintains contingency equipment and replacement inventories. The District's contractor responders also provide backup pumping equipment. A list of available maintenance equipment is located in Appendix C.

Appendix C – Operation and Maintenance Program Documents

Appendix C includes the following documents related to this section. The information in these documents will change from time to time, and the documents in Appendix C may have been

superseded. Please contact the Director of Operations for the most recent updates to the Appendix C documents.

- North Marin Water District FY 2026/27 Operating Expenses, Budget Summary, Five-Year Financial Forecast, CIP, and CIP Projects

List of Available Maintenance Equipment (District and Roy's Sewer Service).

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ELEMENT 5 - DESIGN AND PERFORMANCE PROVISIONS

This section of the SSMP discusses the District's design and construction standards.

5.1 SSMP Requirement

SWRCB Waste Discharge Requirement:

- Design and construction standards and specifications for the installation of new sanitary sewer systems, pump stations, and other appurtenances; and for the rehabilitation and repair of existing sanitary sewer systems; and
- Procedures and standards for inspecting and testing the installation of new sewers, pumps, and other appurtenances and for rehabilitation and repair projects.

This section documents the District's sanitary sewer design and performance standards and provisions. The standards and provisions ensure that the sanitary sewer system is designed and constructed properly in order to prevent operational issues and spills.

5.2 Standards for Installation, Rehabilitation, Repair, and Testing

District Regulation 103 states, "Construction of side-sewers shall be in accordance with the NMWD Standard Drawings, Sewer." Further, District Regulation 104 states, "All extensions of the District's sewage facility shall be designed by the District and constructed in accordance with the District's plans and specifications. The location, size, type, and design of all sewer extensions shall be sufficient to provide adequate sewage collection, pumping, treatment, and disposal capacity for the entire area that can economically be served therefrom as conclusively determined by the District."

Additionally, District Regulation 104 describes that "all sewer mains, side-sewers and other sewage facility work shall be inspected by the District to ensure compliance with all requirements of the District."

The District's Standard Drawings are a compilation of design guidelines, specifications, and standard drawings necessary for use in the construction of public works improvements and site grading within the District. The District's Standards, which are included in Appendix D, address the following:

- Standard manhole frame and cover
- Manholes with and without a drop connection
- Cleanout and backwater prevention device
- Rodding and flushing inlets
- Side sewer details

- Saddle connections
- Overflow and backflow devices
- Sewer protection above and beyond utility crossings
- Grease and sand interceptors
- Concrete encasement
- Trench dams
- Trench details
- Air test leakage chart
- Redwood check dam
- Standard surface replacement
- Water, recycled water, and sewer main parallel separations
- Water, recycled water, and sewer main perpendicular separations
- Sewer main spot repair detail

Appendix D also includes the District's Standard Specifications applicable to sewer construction. These specifications establish requirements for materials, installation, inspection, and testing, including earthwork; trench excavation, bedding, backfilling, and compaction; PVC gravity sewer pipe and appurtenances; sewer laterals and connections; cleaning; mandrel testing; leakage and infiltration testing; CCTV inspection; and final inspection.

Appendix D – Design and Performance Provisions Documents

Appendix D includes the following documents related to this section. The information in these documents will change from time to time, and the documents in Appendix D may have been superseded. Please contact the AGM/Director of Engineering for the most recent updates to the Appendix D documents.

- North Marin Water District Standard Sewer Drawings
- North Marin Water District Standard Specifications
- Sewer Main Spot Repair Detail

ELEMENT 6 – SPILL EMERGENCY RESPONSE PLAN

This section of the SSMP includes the District's Spill Emergency Response Plan (SERP). The SERP provides guidelines for responding to, cleaning, containing, and reporting sanitary sewer spills (Spills) that occur within the District's collection system service area.

6.1 SSMP Requirements

The requirements for Element 6 are as follows.

The Spill Emergency Response Plan shall ensure prompt detection and response to spills to reduce spill volumes and collect information for the prevention of future spills. At a minimum, this 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 the GWDR, 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 by the GWDR; and

- Annually, review and assess effectiveness of the Spill Emergency Response Plan and update it as needed.

The following section can be removed and used as a standalone document.

NORTH MARIN WATER DISTRICT

SPILL EMERGENCY RESPONSE PLAN

(SERP)

North Marin Water District – Oceana Marin

August 2026

WDID No.: 1SSO10052

V.W. HOUSEN & ASSOCIATES

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1. INTRODUCTION

The North Marin Water District, Oceana Marin Community Wastewater System Spill Emergency Response Plan (SERP) provides guidelines for responding to, cleaning, containing, and reporting spills that occur during the collection system service area.

1.1 Spill Emergency Response Plan Objectives

The Spill Emergency Response Plan includes measures to protect public health and the environment. This plan includes information to support the District's response to spills from its system in a timely manner that minimizes water quality impacts and nuisance by:

- Stopping the spill and preventing/minimizing a discharge to Waters of the State[2];
- Intercepting sewage flows to prevent/minimize spill volume discharged into waters of the State;
- Recovering, cleaning up and disposing of sewage and wash down water; and
- Cleaning publicly accessible areas while preventing toxic discharges to Waters of the State.

1.2 Regulatory Requirements

On May 2, 2006, the State Water Resources Control Board (SWRCB) issued a directive through Order No. 2006-0003-DWQ to require all public wastewater collection system agencies in California with greater than one mile of sewers to be regulated under the Statewide WDR. Portions of this Order related to monitoring and reporting were amended by Order No. 2013-0058-EXEC, dated July 30, 2013.

All of the previous SWRCB Orders were superseded by Order No. 2022-0103-DWQ, effective June 5, 2023, which is referenced in this document as the Statewide WDR.

The District must develop and implement a Spill Emergency Response Plan to ensure prompt detection and response to spills to reduce spill volumes and collect information for the prevention of future spills. At a minimum, this 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 the Statewide WDR, State law and regulations, and applicable Regional Water Board Orders;

[2] Waters of the State include any surface water or groundwater, including saline waters, within the boundaries of the state as defined in Water Code section 13050(e), and are inclusive of waters of the United States.

- 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 by the Statewide WDR; and
- Annually, review and assess effectiveness of the Spill Emergency Response Plan and update it as needed.

2. SANITARY SEWER SPILL CATEGORIES

Four categories of spills, Categories 1 through 4, are defined in the Statewide WDR, as defined in Table 2.1. For reporting purposes, the Statewide WDR also has requirements for a "No Spill" category. Table 2.2 on the following page lists regulatory reporting timelines for each category of spill.

All agencies that own or operate sanitary systems greater than one mile in length that collect and/or convey untreated or partially treated wastewater to a publicly owned treatment facility are required to report all spills, excluding private lateral spills.

TABLE 2.1 STATEWIDE WDR SPILL CATEGORIES

Category 1	• A spill of any volume of sewage from or caused by a sanitary sewer system or publicly owned lateral 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.
Category 2	• A spill from a sewer main of 1,000 gallons or greater that does not discharge to a surface water.
Category 3	• A spill from a sewer main of equal to or greater than 50 gallons and less than 1,000 gallons that does not discharge to a surface water.
Category 4	• A spill from a sewer main of less than 50 gallons that does not discharge to a surface water.

TABLE 2.2 REGULATORY REPORTING TIMELINES

Element	Requirement	Method
NOTIFICATION	Category 1 Spill Greater than 1,000 Gallons: • Notify OES within two hours of becoming aware of the spill • Obtain an OES notification control number. • Also notify the Marin County Health Officer	• Call Cal OES at: **(800) 852-7550** • County Health Officer **(415) 473-4163** and County Environmental Health Services **(415) 473-6907** should also be contacted. • During evenings/weekends, call the Sheriff Communication Center at **(415) 473-7250.**
REPORTING	Category 1 Spill: • Draft Report within three business days of becoming aware of the spill. LRO certifies within 15 calendar days of spill end date. • Spill Technical Report within 45 calendar days after the spill end date if 50,000 gallons or more. Category 2 Spill: • Draft Report within 3 business days of becoming aware of the spill | LRO certifies within 15 calendar days of the spill end date. Category 3 & 4 Spills: • CAT 3 - Certified report within 30 calendar days of the end of month in which the spill occurred. • CAT 4 – Estimate the monthly total spill volume exiting the sanitary sewer system, and the total number of all Category 4 spills within 30 calendar days after the end of the calendar month in which the spills occurred • LRO certifies annually a report of all Category 4 spills, by February 1 after the end of the calendar year in which the spills occurred "No Spill" or "Category 4" Spill Certification • LRO certifies that no Spill or only Category 4 spills occurred within 30 calendar days of the end of the month. are no spills.	• Enter data into the CIWQS Online Spill Database (http://ciwqs.waterboards.ca.gov), certified by the Legally Responsible Official(s). • All information required by CIWQS will be captured in the Sanitary Sewer Spill Report. • Certified spill reports may be updated by amending the report or adding an attachment to the spill report within 90 calendar days after the spill end date. After 90 days, the State Spill Program Manager must be contacted to request to amend an spill report along with a justification for why the additional information was not available prior to the end of the 90 days.
WATER QUALITY MONITORING	The District will conduct water quality sampling within 18 hours after being aware of Category 1 spills in which 50,000 gallons or greater are spilled to surface waters. EHS may require daily water quality sampling until compliance is achieved.	Water quality results will be included in the Spill Technical Report for Category 1 spills in which 50,000 gallons or greater reach surface waters.

3. NOTIFICATION PROCEDURES

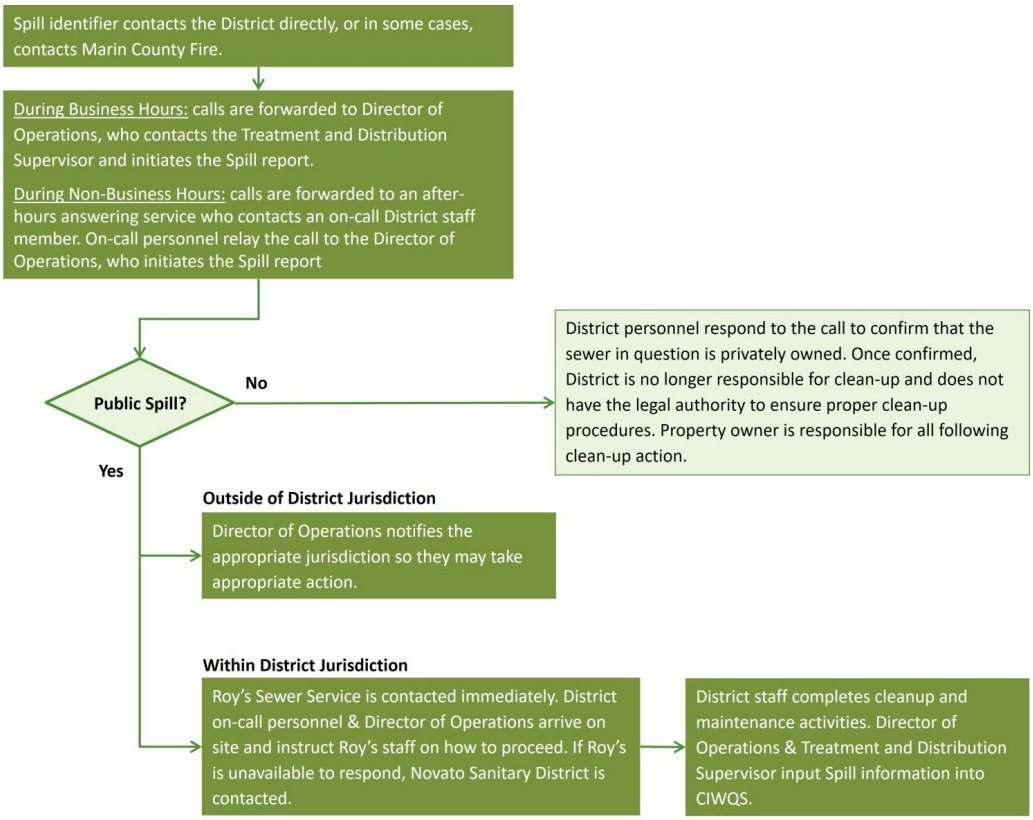
3.1 General

The District is most often notified by the public or field staff of a spill. The public contacts the District telephone number, which is (415) 897-4133, day or night. Contact numbers are also included on the District website, at the following url: Contact - North Marin Water District. In the event of a pump station alarm, the notification is relayed to the on-call Operator through a SCADA call-out system.

Spills may also be reported in person at the District Office, or via 9-1-1. If the call is made to 9-1-1, the receiving agency (likely the Marin Fire Department) notifies the District of the spill to provide First Response. As described on the "Emergencies & After Hours" procedure on the Contact Info page of the NMWD website, after hours, the call is routed to an outside call center and then to the on-call operator. One staff member is assigned to be on-call for a 7-day rotational period to support after hours duties. If the on-call operator feels the event needs to be elevated, they will contact the Treatment and Distribution Supervisor. The Treatment and Distribution Supervisor will deploy additional personnel and will inform the Director of Operations.

Figure 3.1 at the end of this section presents a flowchart showing the spill chain of communication during business hours and non-business hours. This flowchart is also included in SSMP Element 2, Organization.

FIGURE 3.1 CHAIN OF COMMUNICATION



3.2 Notification During Normal Working Hours

Normal working hours are from Monday through Friday from 8:00 a.m. to 5:00 p.m. for office staff, and 7:00 am to 3:30 p.m. for field staff, excluding holidays. During these times, calls are received at the District Office front desk and forwarded to the Treatment and Distribution Supervisor, who then notifies the Director of Operations.

The first party to the spill site is the First Responder. The First Responder may be any District Operations or Maintenance staff.

The Treatment and Distribution Supervisor deploys available staff for spill investigation and response. District staff investigate as to whether the spill is from a public or private sewer blockage and also determine whether an outside contractor is needed for containment and to clear a blockage. When necessary, information collected at the site is also relayed by the Treatment and Distribution Supervisor to the Director of Operations, who informs the District's General Manager.

If the spill is from a private facility, the District is available to make recommendations to the property owner on how to proceed with clean-up. However, the District is not legally authorized to mandate private spill response procedures.

If the spill is from a District sewer blockage and an outside party is needed for containment and clearing of the blockage, Roy's Sewer Service is contacted. If Roy's staff is unavailable, depending on the urgency of the situation, Novato Sanitary District is called. District personnel, will arrive on scene to accompany Roy's staff.

In the event of a blockage resulting in a spill, Roy's is asked to remove the blockage using their equipment. In the event of a sewer break, sewage is diverted around the break area (most likely by pumping from the upstream to the downstream manhole), and then the line is repaired by District staff or by a third party. All visible debris is collected and diverted back into the sewer system. Any spill remnants that cannot be directly put back into the sewer system are contained, decontaminated, and retrieved for disposal.

If the spill is a Category 1 spill, the Director of Operations makes the initial (2-hour) notification to Cal OES.

3.3 Notification During Non-Business Hours

During non-business hours, notification is automatically forwarded from the District's main number to on-call staff, who notifies the on-call operator. Alternatively, the on-call operator could receive a SCADA alarm. If required, the on-call operator elevates the issue to the Treatment and Distribution Supervisor. If further elevation is required, the issue is discussed with the Director of Operations. If the call is made to 9-1-1, the receiving agency, which is often the Marin County Fire Department, redirects the call to the District's main number.

One staff member is assigned to be on-call for a 7-day rotational period to support after-hours duties. The Treatment and Distribution Supervisor and/or Director of Operations deploy other staff as needed, to support the on-call staff member. Other responders may include contract support.

After the call is received by the District, spill response and reporting proceed in the same manner as during normal working hours.

4. SPILL RESPONSE PROGRAM

4.1 Responsibilities & Priorities

The following District and Contract Operators are responsible for responding to spills:

- First Responder to Spills: District personnel trained in spill response typically serve as the First Responder to the spill location. The First Responder may be any District staff. Roy's Sewer Service will be contacted to assist if necessary. If Roy's Sewer Service is not available, Novato Sanitary District will be contacted.
- First Responder to Lift Station Failures: Maintenance personnel trained in spill response typically serve as the First Responder to lift station failures. If maintenance personnel are unavailable, Operations staff would respond.
- Claims Processing: Director of Administrative Services with legal support from District Counsel.

The contact information for those currently holding the positions named above are included in Appendix SERP-A at the end of this section.

The first responder's priorities are as follows:

- To follow safe work practices, including those related to traffic control, confined space, and employee and public safety
- To respond promptly with the appropriate equipment
- To evaluate the cause of spill and determine responsibility
- To restore the flow as soon as possible
- To contain the spill when feasible
- To minimize public access to and/or contact with the spilled sewage

4.2 Available Equipment

The District works with Roy's Sewer Service or an alternative response personnel to provide sufficient equipment for spill response. Equipment available from the District includes the following:

Pumps including electric sewer sump pump

- 2-inch hose – hard hose comes out of manhole; lay-flat hose in 50' sections to transfer to downstream manhole
- Generator and power cord
- Pig bags for absorbing liquid to become sand bags
- 6-inch repair clamps and pipe

- Inflatable sewer plug
- Tyvec suits
- Nitrile gloves

Additional equipment to be provided by Contractor Operator may include:

- Combination Vacuum and Hydrojet truck
- Push cameras
- Hand-held GPS unit
- Trash pump and hoses
- Vacuum trailer
- Disposable cameras
- Spill berm & Spill mat
- Spill Shark (water based spill absorbent)
- 6-inch and 2-inch pumps

In addition, the Main Lift Station has a stationary stand-by generator that automatically starts with a power outage.

4.3 Initial Response

Figure 4.1 provides a general spill response flowchart. The First Responder targets an initial response time of 120 minutes from the initial spill report with the objective of minimizing and/or eliminating a spill. The appropriate response measure varies based on the circumstances and nature of the spill and the information provided by the caller. Actions related to external and internal spills are summarized below. Internal spills affect private properties.

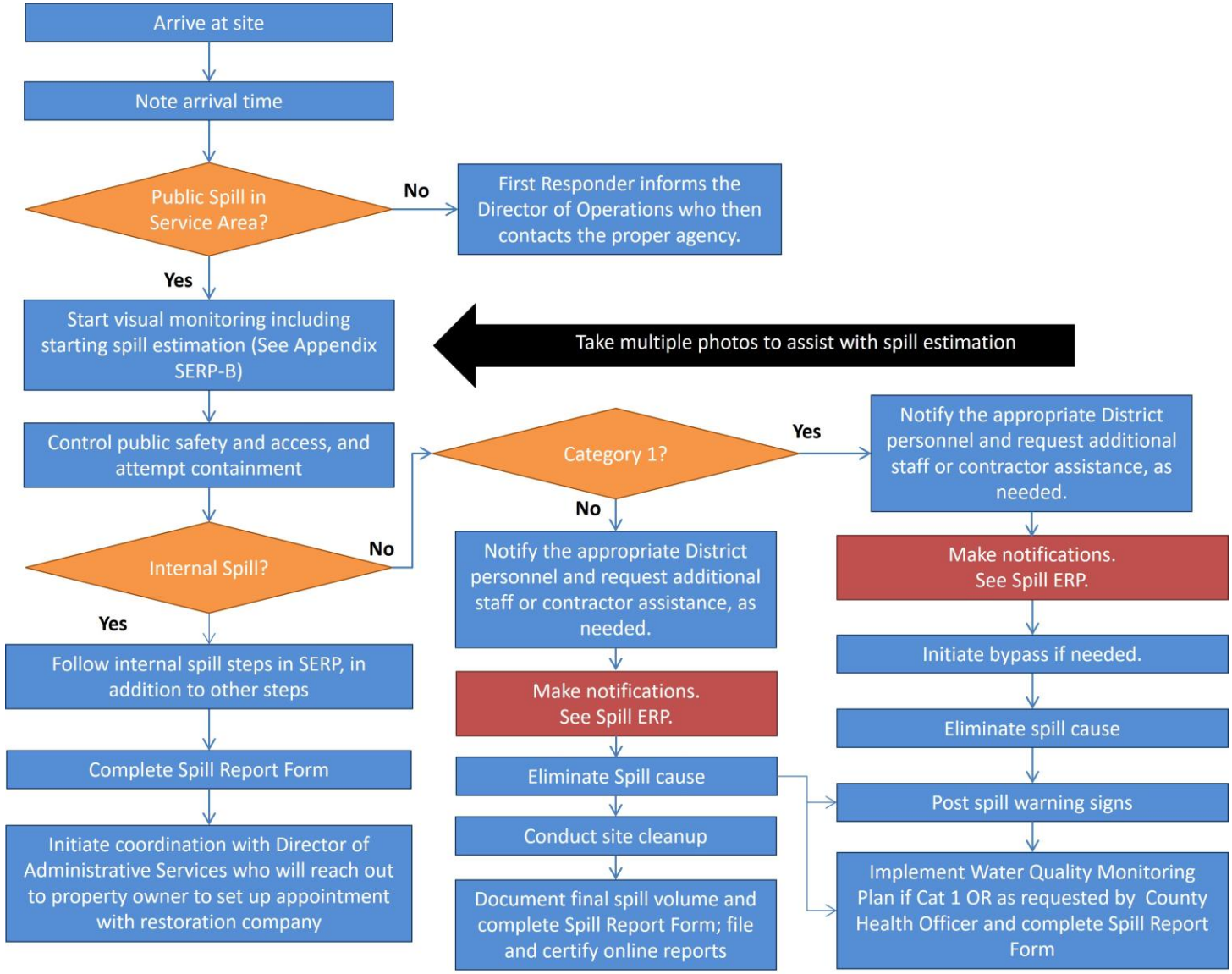
4.3.1 External Spill

External spills occur in the public right-of-way. Upon arrival at the site, the First Responder should complete the following:

- Note arrival time at spill site, and include the time in the applicable Spill Reporting Form (See Appendix SERP-A). Record basic incident information on site, and complete the form after finishing the response.
- Verify the existence of the spill.
- Field-verify the address and nearest cross street, and confirm that the spill is part of the District's sewer/conveyance system.
- Conduct visual monitoring to determine immediate actions, including determination if the spill reached surface waters or drainage culverts, and documentation of spill volume using the methods included in Appendix SERP-B.
- Notify Treatment and Distribution Supervisor and relay preliminary observations. The Treatment and Distribution Supervisor will notify the Director of Operations. Request additional assistance if necessary.

- If the spill is a Category 1 spill and is greater than or equal to 1000 gallons, the District Director of Operations will notify Cal OES and the County Health Department within 2 hours following identification of the spill. Spill categories are defined in Table 2.1, above.
- Begin activities to contain, mitigate, and minimize impacts from the spill, and restore flow.
- If the blockage cannot be cleared within a reasonable time, or the sewer requires construction repairs to restore flow, then initiate containment and/or bypass pumping.
- Identify and clearly assess the affected area and extent of spill, including possible impacts on surface water. Where it is safe and practical, visually inspect surface water in the vicinity of the spill and record observations on the applicable Spill Report Form. Signs of receiving water impacts include clear signs of sewage (solids, grease, paper), abnormal color, fish kills, etc.
- The California Department of Fish and Wildlife (CDFW), Bay Delta Region (Table 6.2), should be notified in the event a spill impacts any creeks, cullies, or natural waterways. CDFW will provide guidance associated with cleanup. Cleanup should proceed quickly, and any water used in the process should be dechlorinated prior to reaching a storm drain.
- The Director of Operations notifies the General Manager if the spill appears to be large (over 1,000 gallons), in a sensitive area, may imminently and substantially endanger human health, results in fish kills, if there is doubt regarding the extent, impact, or how to proceed, or if additional help is needed for line cleaning or repair, containment, recovery, lab analysis, and/or site cleanup.
- Where safe and feasible, take necessary water quality samples at the point of discharge and at upstream and downstream locations. Use best judgment and consult with contract responders and/or the Treatment and Distribution Supervisor and Director of Operations if uncertain. Water quality monitoring is not given precedence over stopping the spill or protecting public health. However, if sufficient personnel are available, monitoring is conducted in parallel with these activities or with the cleanup effort.
- Comply with all safety precautions (traffic, confined space, etc.).
- Contact caller, if time permits. Identify spill cause, including conducting closed-circuit television (CCTV) inspection as appropriate.
- Document all activities through photos and written documentation.
- The First Responder should provide the completed Spill Reporting Form to the Director of Operations. The Director of Operations will enter the information in the CIWQS database as required to meet SWRCB deadlines.

FIGURE 4.1 GENERAL SPILL RESPONSE FLOWCHART



4.3.2 Internal Spill

An internal spill occurs inside a private property. Upon arrival at the location of a spill into a house or a building, the First Responder should evaluate and determine if the spill was caused by a blockage in the lateral or in the District-owned sewer main. If a blockage is found in a property owner's lateral, it should be clearly communicated that response and repair of private laterals is not the District's responsibility. The homeowner is responsible for clearing any blockage in the home's plumbing system or private lateral and for any resulting flood damage to the structure. The homeowner is also responsible for damage that happens because a lateral was not properly installed.

If a backup in the District's main line is found to have caused the spill in a house or building, the First Responder should take steps to address the issue as described above. The First Responder should instruct the property owner to follow the following guidelines:

- Keep all family members and pets away from the affected area.
- Place towels, rags, blankets, etc. between areas that have been affected and areas that have not been affected.
- Move any uncontaminated property away from the spill area. Do not remove any contaminated items.
- Turn off the HVAC system.

The First Responder should follow the following steps to assist the homeowner:

- Gather information from the homeowner.
- Initiate coordination to schedule cleaning by a restoration company.
- Forward applicable Spill Report Form and related documents to the Director of Operations and Director of Administrative Services.

4.3.3 Lift Station or Force Main Spill

In the event of equipment failure resulting in a spill at a Lift Station, the protocol and response is similar to that of a spill occurring in a pipe. Temporary repairs will be completed by District staff or an external contractor and operations must be restored quickly. The force main lift station at the Tahiti Way site has a standby generator that will automatically start and provide back-up power. The North Street lift station will require a portable generator to be connected to the lift station until power is restored; typical lead time is up to 4 hours for a generator to be set up.

In the event of structural failure in a force main resulting in a spill, the first action is to turn off the pump to prevent additional pressurized discharge. Following this step, similar protocol as above should be followed. The force main should be repaired as quickly as possible. If failure is too severe to allow an immediate repair, emergency measures should be taken. These measures could include contracting with a septic tank pumping company to haul sewage from the lift

station to the District's treatment ponds. A list of haulers and contractors that perform work for the District is listed below:

- City Sewer Service, Pt. Reyes Station: (415) 663-1926
- Roto Rooter, San Rafael: (415) 454-7281
- Roy's Sewer Service: (415) 892-5480
- Petaluma Septic Service: (707) 888-2822

All visible debris should be cleaned up within the vault and any spill outside of the vault will require decontamination, retrieval, and disposal of solids.

The District has developed a separate lift station emergency response plan ("PS-ERP") that is included in Appendix SERP-B. The PS-ERP provides additional information about the stations, and is a supplement to (i.e., does not replace) the information in this SERP.

4.3.4 Containment or Bypass

The First Responder should attempt to contain as much of the spilled sewage as possible using the following steps:

- Determine the immediate destination of the spill.
- Plug storm drains using available equipment and materials to contain the spill, where feasible. If spilled sewage has made contact with the storm drainage system, attempt to contain the spilled sewage by plugging downstream storm drainage facilities.
- Contain/direct the spilled sewage using dikes/dams or sandbags.
- Pump around the blockage/pipe failure/lift station or vacuum flow from upstream of the blockage and dispose of downstream of the blockage to prevent further spills.
- If a spill reaches a water body, follow the requirements below for posting and spill notification signage (see Appendix SERP-B for example signs). Also, conduct water quality sampling as discussed above.

4.3.5 Spill Volume Estimation

Accurate spill volume estimation and thorough documentation of the processes used to estimate spill volumes have a high priority in spill response.

Use the methods outlined in the Appendix SERP-B to estimate the volume of the spilled sewage. Wherever possible, document the estimate using photos of the spill site before and during the recovery operation. If possible, use at least two methods to confirm the accuracy of the estimated spill volume.

Some spills may occur in locations where the wastewater can seep into the ground or flow away from the spill location. In such conditions, consider when the spill was first detected and observations from bystanders in order to determine the total spill volume.

4.4 Impact to Waters of State

If a spill is confirmed to have entered waters of the State[3], the Director of Operations must be notified immediately. The Director of Operations will notify the General Manager. The response team would then proceed with the following additional activities:

- Determine the extent of the spill by investigating downstream until there is no evidence of sewage or debris along the creek or water body.
- Conduct Water Quality Sampling, following the process described below. If the spill is 50,000 gallons or greater, collect water quality samples **within 18 hours** of becoming aware of the spill. Water quality sampling will be conducted by District Water Quality Division staff. If unavailable, qualified District operators may collect the samples.
- Perform daily water quality sampling (or sampling per EHS) until compliance is achieved.
- Immediately post contaminated water sign(s) and protect the water body from public access on all sides.
- Photograph sign placement and evidence of the spill in and around the water body to the farthest point reached by the sewage.
- Determine if the water body is safe to enter. During the winter storm season, cleaning the water body may not be feasible due to high water flows.
- If feasible, block the water body downstream of the affected area in a location that is safe to enter and is accessible to set up a pump or utilize other sewer cleaning equipment.
- To the extent feasible, recover and return contaminated water to the collection system.
- Perform follow-up sampling until the area shows no water quality impairment and the posted signs can be removed. The Director of Operations ultimately determines when this happens and makes any follow up calls to affected agencies.

4.4.1 Water Quality Sampling

Water quality sampling and testing is required by the Statewide WDR whenever 50,000 gallons or greater of spilled sewage enter a water body. The purpose of testing is to determine the extent and impact of the spill. The guidelines listed below must be followed.

- The Operator in Charge, Treatment and Distribution Supervisor, or the Director of Operations should arrange for the collection of samples. Samples should be collected as soon as possible, and **within 18 hours** of initial knowledge of the spill event.
- Records of monitoring information should include the date, exact place, and time of sampling or measurements, the individual(s) who performed the sampling or

[3] Waters of the State include any surface water or groundwater, including saline waters, within the boundaries of the state as defined in Water Code section 13050(e), and are inclusive of waters of the United States.

measurements, the date(s) analyses were performed, the individual(s) who performed the analyses, the analytical technique or method used, and the results of such analyses.

- The required water quality sampling procedures are as follows:
  - Collect one water sample, each day of the duration of the spill, upstream of the spill entry point if sewage discharges to a surface water via a drainage conveyance system, and/or
  - Three receiving water sampling locations (upstream, at the spill entry point, and downstream)
  - If the receiving water has no flow during the duration of the spill, report "No Sampling Due To No Flow" for the receiving water sampling locations
  - Analyze the collected receiving water samples for Ammonia and the appropriate other bacterial indicator(s) that include one or more of the following, unless directed otherwise by the Regional Water Board: Total Coliform Bacteria, Fecal Coliform Bacteria, E-coli, and/or Enterococcus.
  - Collect and analyze additional samples as required by the applicable Regional Water Board Executive Officer or designee.

Sample locations are described further in Table 4.1.

TABLE 4.1 SAMPLING LOCATIONS FOR SPILLS 50,000 GALLONS OR GREATER

Sampling Location	Description
• DCS-001	• A point in a drainage conveyance system before the drainage conveyance system flow discharges into a receiving water.
• RSW-001 Point of Discharge	• A point in the receiving water where sewage initially enters the receiving water.
• RSW-001U: Upstream of Point of Discharge	• A point in the receiving water, upstream of the point of sewage discharge, to capture ambient conditions absent of sewage discharge impacts.
• RSW-001D: Downstream of Point of Discharge	• A point in the receiving water, downstream of the point of sewage discharge, where the spill material is fully mixed with the receiving water.

- Sample analysis must be conducted according to sufficiently sensitive test methods approved under 40 Code of Federal Regulations Part 136 for the sample analysis of pollutants. A method is considered sufficiently sensitive when the minimum level of the analytical method approved under 40 Code of Federal Regulations Part 136 is at or below the receiving water pollutant criteria.
- The analysis of water quality samples required per this General Order must be performed by a laboratory that has accreditation pursuant to Article 3 (commencing with section 100825) of Chapter 4 of Part 1 of Division 101 of the Health and Safety Code. (Water Code

section 13176(a).) The State Water Board accredits laboratories through its Environmental Laboratory Accreditation Program (ELAP).

For spills less than 50,000 gallons, water quality sampling may be required by, and directions should be taken from EHS.

The water quality sampling procedures should follow EHS procedures as follows:

- Keep the sterile collection bottle closed until it is to be filled. Do not contaminate the inner surface of the lid or bottle rim.
- Collect a water sample just below the surface, in knee deep water, approximately 3 feet deep (full arm's length), without rinsing. If needed, extend the sampling pole to the fullest length to reach deeper water depth. Minimize contact with the bank or beach bed as water fouling may occur.
- Remove the cap and hold the bottle near its base and plunge it, neck downward, below the surface.
- Turn the bottle until the neck points slightly upward and the mouth is directed toward the current. Fill the bottle, leaving about 1 inch of air to allow the lab to mix by shaking. Collect a minimum of 100 mL. (If applicable, insert sterile collection bottle into the holder on the sample pole. Extend the sample pole and plunge the bottle end into the water, bottle opening downward.)
- Immediately place the cap securely on the bottle to avoid leaks and contamination
- Dry the bottle.
- Label container with distinctive sample site name, date, and time collected.
- Complete the laboratory requisition slip with requested information (site, bottle number, collector, date and time of collection, type of sample, test requested, name and phone number of the responsible person for reporting purposes, and deliverer name). Note any field observations that may have occurred during the sampling.
- Samples should be tested for ammonia (if 50,000 gallons or greater), fecal coliform, total coliform, and enterococcus.
- Samples should be stored and shipped by placing the water sample bottle in a cooler with frozen blue ice. The water sample must be kept cool. Ice may be used but care must be taken so water samples are not contaminated or diluted by the ice.

Water samples are taken to **District Laboratory, located at 999 Rush Creek Pl, Novato, CA 94945**. The water samples must be brought to the laboratory within 8 hours of collection, before 3:00 p.m., for processing.

If a spill occurs during the weekend, the First Responder shall coordinate with the laboratory on-call personnel to provide the water samples. If on-call District Water Quality laboratory staff are unavailable, the First Responder may use an alternate qualified laboratory or other prearranged analytical support capable of meeting required sample-handling and analytical timeframes.

4.4.2 Spill Technical Report

If 50,000 gallons or greater spill reaches surface waters, a Spill Technical Report must be prepared and submitted to the CIWQS online spill database within 45 calendar days of the spill end date. A template for the Spill Technical Report is included in Appendix SERP-C. The Spill Technical Report must include, at a minimum, the following:

1. Spill causes and circumstances, including at minimum:
    a. Complete and detailed explanation of how and when the spill was discovered;
    b. Photographs illustrating the spill origin, the extent and reach of the spill, drainage conveyance system entrance and exit, receiving water, and post-cleanup site conditions;
    c. Diagram showing the spill failure point, appearance point(s), the spill flow path, and ultimate destinations;
    d. Detailed description of the methodology employed, and available data used to calculate the discharge volume and, if applicable, the recovered spill volume;
    e. Detailed description of the spill cause(s);
    f. Description of the pipe material, and estimated age of the pipe material, at the failure location;
    g. Description of the impact of the spill;
    h. Copy of original field crew records used to document the spill; and
    i. Available historical maintenance records for the failure location.
2. The District's response to the spill:
    a. Chronological narrative description of all actions taken by the District to terminate the spill;
    b. Explanation of how the SERP was implemented to respond to and mitigate the spill; and
    c. Final corrective action(s) completed and a schedule for planned corrective actions, including:
        i. Local regulatory enforcement action taken against an illicit discharge in response to this spill, as applicable,
        ii. Identifiable system modifications, and operation and maintenance program modifications needed to prevent repeated spill occurrences, and
        iii. Necessary modifications to the SERP to incorporate lessons learned in responding to and mitigating the spill.
3. Water Quality Monitoring, including at minimum:
    a. Description of all water quality sampling activities conducted;

b. List of pollutants and parameters monitored, sampled, and analyzed;
c. Laboratory results, including laboratory reports;
d. Detailed location map illustrating all water quality sampling points; and
e. Other regulatory agencies receiving sample results (if applicable).

4. Evaluation of spill impact(s), including a description of short-term and long-term impact(s) to beneficial uses of the surface water.

The Director of Operations will enter the information in the CIWQS database and certify the spill as the designated LRO. The Treatment and Distribution Supervisor will review the certified spill report and advise of any potential changes that should be made to amend the certification.

4.4.3 Spill Notification Signage

Barriers shall be installed to prevent the public from having contact with the sewage. Signs should be posted to keep vehicles and pedestrians away from contact with spilled sewage. Signs should remain in place until removal of the signs is directed by the Director of Operations, as advised by EHS.

If a creek, stream, and/or beach have been contaminated as a result of a spill, notifications should be posted at visible access locations until the risk of contamination has subsided to acceptable background levels. The warning signs, once posted, should be checked every day to ensure that they are still in place. “Closed” signs should be posted at the outfall and a minimum of 100 feet upstream and 100 feet downstream of the discharge. If there is a large volume of sewage, more signs must be posted downstream.

Signs must remain posted until at least two consecutive days of sampling meet the Public Beach Sanitation and Ocean Water-Contact Sports standards that are described above. The removal of signs must be approved by EHS and the County Public Health Officer.

4.5 Recovery and Cleanup

The recovery and cleanup phase begins immediately after the flow has been restored and the spill has been contained to the extent possible. Spilled sewage shall be vacuumed or pumped and returned to the greatest extent possible back into the sanitary sewer system.

The spill recovery and cleanup procedures include volume estimation, sewage recovery, and cleanup and disinfection.

4.5.1 General

Clean up and disinfection procedures should be implemented to reduce the potential for human health issues and adverse environmental impacts that are associated with a spill event. The procedures described are for dry weather conditions and should be modified as required for wet

weather conditions. Clean up should proceed quickly in order to minimize negative impact. Any water that is used in the cleanup process should be de-chlorinated prior to use.

Where cleanup is beyond the capabilities of District staff, the Director of Operations should work with the Treatment and Distribution Supervisor to contact a cleanup contractor to complete the work.

Spills inside houses or buildings should be cleaned by a professional cleaning company. Claims by homeowners should be forwarded to the District's Director of Administrative Services.

4.5.2 Guidelines for Cleanup

On **hard surface areas**, collect all signs of sewage solids and sewage-related material either by hand or with the use of rakes, brooms, and shovels. Take reasonable steps to contain and vacuum up the wastewater. Wash down the affected area with clean water and/or non-toxic biodegradable surface disinfectant until the water runs clear. Allow area to dry. Repeat the process if additional cleaning is required.

On **landscaped or unpaved areas**, collect all signs of sewage solids and sewage-related material either by hand or with the use of rakes, brooms, and shovels. Wash down the affected area with clean water until the water runs clear. Either contain or vacuum up the wash water so that none is released. Allow the area to dry. Repeat the process if additional cleaning is required. Outside contractors are hired to dispose larger volumes of contaminated soils.

Operators will use PPE such as gloves and glasses during cleanup operations.

If the spill has reached the **storm drain system**, the District's responder should be called and use a combination sewer cleaning truck to vacuum/pump out the catch basin and any other portion of the storm drain that may contain sewage. In the event that a spill occurs at night, the location should be re-inspected as soon as possible the following day. The operator should look for any signs of sewage solids and sewage-related material that may warrant additional cleanup activities.

4.6 Coordination with Storm Drain and Other Utility Agencies

The District plans to establish communication procedures with storm drain and other applicable utilities for spill response by June 30, 2027. These procedures will be incorporated into the SERP upon completion.

The stormwater system within the Oceana Marin service area is maintained by the Oceana Marin Homeowner's Association. Water service within the area is primarily provided by Estero Mutual Water Company, with some areas served by California Water Service Company.

During a sewer spill or other emergency that may affect these utility systems, District personnel will coordinate with the appropriate utility agency using the contact information provided below.

- Oceana Marin Association (OMA) (707) 878-2480
- Estero Mutual Water Company (707) 878-2400
- California Water Service Company, Redwood Valley District (800) 220-4299

4.7 Post-Spill Assessment and Annual Review

Staff will meet regularly to review the procedures used and to discuss what worked and where improvements could be made in preventing, responding to, and mitigating future spill events. The results of the debriefing will be documented through the District's CMMS (NEXGEN) to support the completion of action items as scheduled. The objective of the post-spill assessment is to determine the cause of the spill and to identify corrective actions needed that will reduce or eliminate future potential for the spill to recur or for other spills to occur.

In addition, the District will review and evaluate the SERP and its effectiveness at mitigating spills annually. Based on this review, the SERP will be updated as necessary.

5. SPILL DOCUMENTATION

In accordance with the WDR, the District shall maintain spill-related records as follows:

1. Records are retained for at least five (5) years
2. Records are readily available, either electronic or hard copies, for review by Water Board staff during onsite inspections or through an information request
3. Records are retained for each of the following spill-related events and activities:
    a. Spill event complaints
    b. Category 4 spills (supplements Cat 1 through 3 documentation that is retained as part of regulatory reporting)
    c. Sewer system telemetry records
    d. Sewer system management plan implementation records
    e. Audit records
    f. Equipment Records
    g. Work orders

Specific requirements for recordkeeping are listed below.

5.1 Spill Event Complaints

The District shall maintain records for each of the following spill-related events and activities:

- Spill event complaint, including but not limited to records documenting how the District responded to notifications of spills. Each complaint record must, at a minimum, include the following information:
    - Date, time, and method of notification;
    - Date and time the complainant first noticed the spill, if available;
    - Narrative description of the complaint, including any information the caller provided regarding whether the spill has reached surface waters or a drainage conveyance system, if available;
    - Complainant's contact information, if available; and
    - Final resolution of the complaint.
- Records documenting the steps and/or remedial action(s) undertaken by the District;
- Records documenting how estimate(s) of volume(s) and, if applicable, volume(s) of spill recovered were calculated;
- All California Office of Emergency Services notification records, as applicable; and
- Water quality monitoring records.

5.2 Recordkeeping of Category 4 Spills

The District must maintain the following records for each individual Category 4 spill:

- Contact information: Name and telephone number of District contact person to respond to spill-specific questions;
- Spill location name;
- Description and GPS coordinates for the system location where the spill originated;
- Did the spill reach a drainage conveyance system? If Yes:
    - Description of drainage conveyance system location;
    - Estimated spill volume fully recovered within the drainage conveyance system;
    - Estimated spill volume remaining within the drainage conveyance system; and
    - Estimated total spill volume exiting the sanitary sewer system.
- Spill date and start time;
- Spill cause(s) (for example, root intrusion, grease deposition, etc.);
- System failure location (for example, main, pump station, etc.);
- Description of spill response activities, including description of immediate spill containment and cleanup efforts;
- Description of how the volume estimation was calculated, including, at minimum:
    - The methodology and type of data relied upon, including supervisory control and data acquisition (SCADA) records, flow monitoring or other telemetry information

used to estimate the volume of the spill discharged, and the volume of the spill recovered (if any volume of the spill was recovered); and
  - The methodology and type of data relied upon to estimate the spill start time, on-going spill rate at time of arrival (if applicable), and the spill end time.
- Description of implemented system modifications and operating/maintenance modifications.

5.3 Recordkeeping for Total Annual Spill Information

The District shall keep the following records summarizing annual spills:

1. Estimated total annual spill volume;
2. Description of spill corrective actions, including at minimum:
   a. Local regulatory enforcement action taken against the sewer lateral owner in response to a spill, as applicable; and
   b. System operation, maintenance and program modifications implemented to prevent repeated spill occurrences at the same spill location.

5.4 Sewer System Telemetry Records

The District shall maintain the following sewer system telemetry records if used to document compliance with Statewide WDR, as applicable:

1. Supervisory control and data acquisition (SCADA) system(s);
2. Alarm system(s);
3. Flow monitoring device(s) or other instrument(s) used to estimate sewage flow rates, and/or volumes;
4. Computerized maintenance management system records; and
5. Asset management-related records.

5.5 Sewer System Management Plan Implementation Records

The District shall maintain records documenting the implementation of its Sewer System Management Plan, including documents supporting its Sewer System Management Plan audits, corrections, modifications, and updates to the Sewer System Management Plan.

5.6 Audit Records

The District shall maintain, at minimum, the following records pertaining to its Sewer System Management Plan audits, and other internal audits:

1. Completed audit documents and findings;

2. Name and contact information of staff and/or consultants that conducted or involved in the audit; and
3. Follow-up actions based on audit findings.

5.7 Equipment Records

The District shall maintain a log of all owned and leased sewer system cleaning, operational, maintenance, construction, and rehabilitation equipment.

5.8 Work Orders

The District shall maintain record of work orders for operations and maintenance projects. Most equipment is replaced when it has reached the end of its service life. Pump heads are replaced when performance shows limited efficiency.

5.9 Spill Specific Monitoring

Spill-specific monitoring means the gathering of information and data for a specific spill event to be reported or kept as records. The WDR requires the following assessments, as a component of data gathering following a spill.

5.9.1 Spill Location and Spread

The District shall visually assess the spill location(s) and spread using photography, global positioning system (GPS), and other best available tools. The District shall document the critical spill locations, including:

- Photography and GPS coordinates for:
  - The system location where spill originated; or
  - For multiple appearance points of a single spill event, the points closest to the spill origin.
- Photography for:
  - Drainage conveyance system entry locations;
  - The location(s) of discharge into surface waters, as applicable;
  - Extent of spill spread; and
  - The location(s) of clean up.

5.9.2 Spill Volume Estimation

Use the methods outlined in Appendix SERP-B to estimate the volume of the spilled sewage.

Some spills may occur in locations where the wastewater can seep into the ground or flow away from the spill location. In such conditions, consider when the spill was first detected and observations from bystanders in order to determine the total spill volume.

6. REGULATORY REPORTING

This section describes the requirements that have been established for reporting of spills to the regulatory agencies.

Table 6.1 on the following page lists regulatory reporting requirements and timelines that are also described further in this section. Table 6.2 provides contact and access information for regulatory reporting.

TABLE 6.1 REGULATORY REPORTING REQUIREMENTS

If Spill	Then Notify
Category 1 Spill: 1000 gallons or more reaching a surface water or with the potential to reach a surface water.	**2-Hour Notification to** Cal OES: (800) 852-7550. Ask for an OES Control Number (for RWQCB). County Health Officer (925) 313-6712 and Contra Costa County Environmental Health Services (EHS) (925) 608-5500 are also to be contacted. **Within 3 Business Days** of Notification report to SWRCB using CIWQS **Within 15 Calendar Days** of Conclusion of Response certify by LRO using CIWQS **Within 45 Calendar Days of Conclusion of Response** submit spill Technical Report via CIWQS online database if 50,000 gallons or more **Additional Notification as Needed** – California DFWS: (707)-944-5500
Category 2 Spill: 1,000 gallons or more without the potential to reach surface waters.	**Within 3 Business Days** of Notification report to SWRCB using CIWQS. **Within 15 Calendar Days** of Conclusion of Response certify by LRO using CIWQS.
Category 3 Spill: 50 gallons to 999 gallons without the potential to reach surface waters. Category 4 Spill: 49 gallons or less, not reaching surface waters.	**Within 30 Calendar Days** past End of Month with Spill Event, report to SWRCB and certify by LRO using CIWQS. **By February 1 of the Year Following the Year in Which Cat 4 Spills Occurred** submit annual report to SWRCB and Certify by LRO using CIWQS.
No Spill Reporting: (no spills in month.	**Within 30 Calendar Days** past End of Month report by LRO to SWRCB using CIWQS.
Annual Report (Was Collection System Questionnaire)	Update and certify April 1 beginning in 2024

TABLE 6.2 CONTACT AND ACCESS INFORMATION FOR REGULATORY REPORTING

California Integrated Water Quality System (CIWQS)

SWRCB REPORTING TIMEFRAMES DEPEND ON THE SIZE AND FINAL DESTINATION OF THE SPILL
• CIWQS must be used for reporting if the website is available (http://ciwqs.waterboards.ca.gov)
  ○ User Name: XXXX
  ○ Password: XXXX
  ○ Waste Discharge Identification Number (WDID): 1SSO10052
• The spill database will automatically generate an email notification with customized information about the spill upon initial reporting and final certification for all Category 1 spills.
• In the event that the CIWQS website is down, take a screenshot of the error message and contact ciwqs@waterboards.ca.gov (866-792-4977).
• If the spill information is time-sensitive, document the information and provide it directly by email to the CA North Coast RWQCB at RB1SpillReporting@waterboards.ca.gov (707) 576-2220 until CIWQS is restored.

Two-Hour Notification

• State Office of Emergency Services (OES) Phone: (800) 852-7550. Make sure you ask for an "OES CONTROL NUMBER"
• Marin County Environmental Health Services
  ○ Deputy Director (415) 473-6907
• Marin County Health and Human Services
  ○ Public Health Officer (415) 473-4163
• RWQCB Region 1 (CA North Coast)
  ○ Phone – Day: (707) 576-2220
  ○ Online: RB1SpillReporting@waterboards.ca.gov
• California Department of Fish & Wildlife, Bay Delta Region (707) 428-2002

Other Contact Information
• County Sheriff's Office (415) 473-7250

6.1 Multiple Appearance Points – Single Spill

For reporting purposes, if one spill event of whatever category results in multiple appearance points in a sewer system, a single spill report is required in CIWQS which includes the GPS coordinates for the location of the spill appearance point closest to the failure point, blockage or location of the flow condition that caused the spill, and descriptions of the locations of all other discharge points associated with the single spill event.

6.2 2-Hour Notification to Regulatory Agencies of Spills

Cal OES is only to be notified of a Category 1 spill greater than or equal to 1,000 gallons discharged to surface water or spilled in a location where it probably will be discharged to surface water. In addition, the County Public Health Officer is to be contacted at (415) 473-4163 and County Environmental Health Services at (415) 473-6907 during regular business hours. During evenings/weekends, call the County Sheriff's Office at (415) 473-7250.

The District's Director of Operations & Treatment and Distribution Supervisor are responsible for reviewing field data for reporting to regulatory agencies. If it is determined that the criteria for OES notification was met, then the First Responder must notify OES of the event no later than two (2) hours after:

1. The District has knowledge of the spill;
2. Notification is possible; and
3. Notification can be provided without substantially impeding cleanup or other emergency measures.

The OES State Warning Center phone number is (800) 852-7550.

The First Responder or their designee is responsible for obtaining an OES Control number. Following the initial notification to OES and until the spill report is certified in the SWRCB online Spill Database, the LRO will provide updates (or provide direction for updates to be provided) to OES regarding substantial changes to the estimated volume of untreated or partially treated sewage discharged and any substantial changes to known impact(s).

6.3 Detailed Reporting Requirements

Table 6.1, above, provides details on the District's regulatory reporting process, which is also described below.

6.3.1 Spill Reporting for Category 1 Spills

6.3.1.1 Spill Reporting for Category 1 Spills – 3 Business Days of Becoming Aware of Spill

Cal OES and the County Health Officer shall receive notification of Category 1 spills greater than or equal to 1,000 gallons, as stated earlier in this Section.

The District's Data Submitter, currently the Director of Operations, must then submit the initial draft report to the SWRCB's CIWQS Online spill database @ http://ciwqs.waterboards.ca.gov/ciwqs within 3 business days of becoming aware of the spill.

Table 6.3 lists information that is required in the draft spill report. The data provided in the draft spill must be supplemented during the certification process, as discussed further below.

TABLE 6.3 CATEGORY 1 AND 2 CIWQS DRAFT SPILL REPORT – REQUIRED INFORMATION

Required Information for Category 1 and 2 Draft Spill Reports
1. Contact information: Name and telephone number of contact person to respond to spill-specific questions; 2. Spill location name; 3. Date and time the District was notified of, or self-discovered, the spill; 4. Operator arrival time; 5. Estimated spill start date and time; 6. Date and time the District notified the California Office of Emergency Services, and the assigned control number; 7. Description, photographs, and GPS coordinates of the system location where the spill originated; 8. If a single spill event results in multiple appearance points, provide GPS coordinates for the appearance point closest to the failure point and describe each additional appearance point in the spill appearance point explanation field; 9. Estimated total spill volume exiting the system; 10. Description and photographs of the extent of the spill and spill boundaries; 11. Did the spill reach a drainage conveyance system? If Yes: a. Description of the drainage conveyance system transporting the spill; b. Photographs of the drainage conveyance system entry location(s); c. Estimated spill volume fully recovered from the drainage conveyance system; d. Estimated spill volume remaining within the drainage conveyance system; e. Description and photographs of all discharge point(s) into the surface water; ** Items 12 and 13 are required for Category 1 spills only ** 12. Estimated spill volume that discharged to surface waters; and 13. Estimated total spill volume recovered.

6.3.1.2 Spill Certification for Category 1 Spills – 15 Calendar Days of the Spill End Date

Within 15 calendar days of the spill end date, the LRO must review and certify the report in the CIWQS Online spill database @ http://ciwqs.waterboards.ca.gov/ciwqs

The Certified Spill Report requires additional information to supplement the data provided in the Draft Spill Report.

Table 6.4 summarizes information that is required during spill certification.

TABLE 6.4 CATEGORY 1 CIWQS SPILL CERTIFICATION – REQUIRED INFORMATION

Required Information for Category 1 and 2 Spill Certification
1. Description of the spill event destination(s), including GPS coordinates if available, that represent the full spread and reach of the spill; 2. Spill end date and time; 3. Description of how the spill volume estimations were calculated, including at a minimum: a. The methodology, assumptions and type of data relied upon, such as supervisory control and data acquisition (SCADA) records, flow monitoring or other telemetry information used to estimate the volume of the spill discharged, and the volume of the spill recovered (if any volume of the spill was recovered); and b. The methodology(ies), assumptions and type of data relied upon for estimations of the spill start time and the spill end time; 4. Spill cause(s) (for example, root intrusion, grease deposition, etc.); 5. System failure location (for example, main, lateral, pump station, etc.); 6. Description of the pipe material, and estimated age of the pipe material, at the failure location; 7. Description of the impact of the spill; 8. Whether or not the spill was associated with a storm event; 9. Description of spill response activities including description of immediate spill containment and cleanup efforts; 10. Description of spill corrective action, including steps planned or taken to reduce, eliminate, and prevent reoccurrence of the spill, and a schedule of major milestones for those steps; 11. Spill response completion date; 12. Detailed narrative of investigation and investigation findings of cause of spill; 13. Reasons for an ongoing investigation (as applicable) and the expected date of completion; 14. Name and type of receiving water body(s); 15. Description of the water body(s), including but not limited to: a. Observed impacts on aquatic life; b. Public closure, restricted public access, temporary restricted use, and/or posted health warnings due to spill; c. Responsible entity for closing/restricting use of water body; and d. Number of days closed/restricted as a result of the spill. 16. Whether or not the spill was located within 1,000 feet of a municipal surface water intake; and 17. If water quality samples were collected, identify sample locations and the parameters the water quality samples were analyzed for. If no samples were taken, “Not Applicable” shall be selected.

6.3.1.3 Spill Technical Report

If 50,000 gallons or greater from a spill reaches surface waters, a Spill Technical Report must be prepared and submitted to the CIWQS online spill database within 45 calendar days of the spill end date. The LRO is responsible for submitting the Spill Technical Report. The required contents of the Spill Technical Report are discussed in Section 4.4, above.

6.3.1.4 Spill Amendments for Category 1 Spills – 90 Calendar Days of the Spill End Date

The District shall update or add additional information to a Certified Spill Report within 90 calendar days of the spill end date by amending the report or by adding an attachment to the Spill Report in the online CIWQS Sanitary Sewer System Database. The Enrollee shall certify the amended report. After 90 calendar days, the District shall contact the State Water Board at SanitarySewer@waterboards.ca.gov to request to amend a Spill Report. The Legally Responsible Official shall submit justification for why the additional information was not reported within the Amended Spill Report due date.

6.3.2 Spill Reporting for Category 2 Spills

6.3.2.1 Spill Reporting for Category 2 Spills – 3 Business Days of Becoming Aware of the Spill

Within 3 business days of becoming aware if the spill, the Data Submitter must submit the initial report to the SWRCB's CIWQS Online spill database at http://ciwqs.waterboards.ca.gov/ciwqs.

The draft report shall include Items 1 through 11 of the list provided above for the Category 1, 3-day draft report.

6.3.2.2 Spill Certification for Category 2 Spills – 15 Calendar Days of the Spill End Date

Within 15 calendar days of the spill end date, the LRO must review and certify the report in the CIWQS Online spill database @ http://ciwqs.waterboards.ca.gov/ciwqs.

The Spill Certification must include, in addition to the information provided in the draft report, the items shown in Table 6.5 on the following page.

TABLE 6.5 CATEGORY 2 CIWQS SPILL CERTIFICATION – REQUIRED INFORMATION

Required Information for Category 1 and 2 Spill Certification
1. Description of the spill event destination(s), including GPS coordinates if available, that represent the full spread and reach of the spill; 2. Spill end date and time; 3. Description of how the spill volume estimations were calculated, including at a minimum: a. The methodology, assumptions and type of data relied upon, such as supervisory control and data acquisition (SCADA) records, flow monitoring or other telemetry information used to estimate the volume of the spill discharged, and the volume of the spill recovered (if any volume of the spill was recovered); and b. The methodology(ies), assumptions and type of data relied upon for estimations of the spill start time and the spill end time; 4. Spill cause(s) (for example, root intrusion, grease deposition, etc.); 5. System failure location (for example, main, lateral, pump station, etc.); 6. Description of the pipe material, and estimated age of the pipe material, at the failure location; 7. Description of the impact of the spill; 8. Whether or not the spill was associated with a storm event; 9. Description of spill response activities including description of immediate spill containment and cleanup efforts; 10. Description of spill corrective action, including steps planned or taken to reduce, eliminate, and prevent reoccurrence of the spill, and a schedule of major milestones for those steps; 11. Spill response completion date; 12. Detailed narrative of investigation and investigation findings of cause of spill; 13. Reasons for an ongoing investigation (as applicable) and the expected date of completion; and 14. Whether or not the spill was located within 1,000 feet of a municipal surface water intake.

6.3.2.3 Amended Certified Spill Reports for Individual Category 2 Spills – 90 Calendar Days of the Spill End Date

The District shall update or add additional information to a Certified Spill Report within 90 calendar days of the spill end date by amending the report or by adding an attachment to the Spill Report in the online CIWQS Sanitary Sewer System Database. The LRO shall certify the amended report. After 90 calendar days, the District shall contact the State Water Board at SanitarySewer@waterboards.ca.gov to request to amend a Spill Report. The Legally Responsible Official shall submit justification for why the additional information was not reported within the Amended Spill Report due date.

6.3.3 Spill Reporting for Category 3 and 4 Spills

6.3.3.1 Monthly Spill Reporting for Category 3 Spills

Within 30 calendar days of the end of the calendar month in which the spill occurred, the LRO must submit and certify a report to the SWRCB's CIWQS Online spill database @ http://ciwqs.waterboards.ca.gov/ciwqs.

For each spill, the report shall include the information shown in Table 6.6.

- **TABLE 6.6 CATEGORY 3 CIWQS SPILL CERTIFICATION – REQUIRED INFORMATION**

Required Information for Category 3 Spill Certification
1. Contact information: Name and telephone number of Enrollee contact person to respond to spill-specific questions; 2. Spill location name; 3. Date and time the Enrollee was notified of, or self-discovered, the spill; 4. Operator arrival time; 5. Estimated spill start date and time; 6. Description, photographs, and GPS coordinates where the spill originated: a. If a single spill event results in multiple appearance points, provide GPS coordinates for the appearance point closest to the failure point and describe each additional appearance point in the spill appearance point explanation field; 7. Estimated total spill volume exiting the system; 8. Description and photographs of the extent of the spill and spill boundaries; 9. Did the spill reach a drainage conveyance system? If Yes: a. Description of the drainage conveyance system transporting the spill; b. Photographs of the drainage conveyance system entry locations(s); c. Estimated spill volume fully recovered from the drainage conveyance system; and d. Estimated spill volume discharged to a groundwater infiltration basis or facility, if applicable. 10. Estimated total spill volume recovered; 11. Description of the spill event destination(s), including GPS coordinates, if available, that represent the full spread and reaches of the spill; 12. Spill end date and time; 13. Description of how the spill volume estimations were calculated, including, at minimum: a. The methodology and type of data relied upon, including supervisory control and data acquisition (SCADA) records, flow monitoring or other telemetry information used to estimate the volume of the spill discharged, and the volume of the spill recovered (if any volume of the spill was recovered); and b. The methodology and type of data relied upon to estimate the spill start time, on-going spill rate at time of arrival (if applicable), and the spill end time. 14. Spill cause(s) (for example, root intrusion, grease deposition, etc.); 15. System failure location (for example, main, pump station, etc.);

Required Information for Category 3 Spill Certification
16. Description of the pipe/infrastructure material, and estimated age of the pipe/infrastructure material, at the failure location; 17. Description of the impact of the spill; 18. Whether or not the spill was associated with a storm event; 19. Description of spill response activities including description of immediate spill containment and cleanup efforts; 20. Description of spill corrective actions, including steps planned or taken to reduce, eliminate, and prevent reoccurrence of the spill, and a schedule of the major milestones for those steps; including, at minimum: a. Local regulatory enforcement action taken against an illicit discharge in response to this spill, as applicable, and b. Identifiable system modifications, and operation and maintenance program modifications needed to prevent repeated spill occurrences at the same spill event location, including: i. Adjusted schedule/method of preventive maintenance; ii. Planned rehabilitation or replacement of sanitary sewer asset; iii. Inspected, repaired asset(s), or replaced defective asset(s); iv. Capital improvements; v. Documentation verifying immediately implemented system modifications and operating/maintenance modifications; vi. Description of spill response activities; vii. Spill response completion date; and viii. Ongoing investigation efforts, and expected completion date of investigation to determine the full cause of spill. 21. Detailed narrative of investigation and investigation findings of cause of spill.

6.3.3.2 Amended Certified Spill Reports for Individual Category 3 Spills – 90 Calendar Days of the Spill End Date

The District shall update or add additional information to a Certified Spill Report within 90 calendar days of the spill end date by amending the report or by adding an attachment to the Spill Report in the online CIWQS Sanitary Sewer System Database. The LRO shall certify the amended report. After 90 calendar days, the District shall contact the State Water Board at SanitarySewer@waterboards.ca.gov to request to amend a Spill Report. The Legally Responsible Official shall submit justification for why the additional information was not reported within the Amended Spill Report due date.

6.3.3.3 Monthly Spill Reporting for Category 4 Spills

Within 30 calendar days of the end of the calendar month in which the spill occurred, the Operator in Charge submits and the LRO certifies the estimated total spill volume exiting the sanitary sewer system and the total number of all Category 4 spills to the SWRCB's CWIQS Online spill database at http://ciwqs.waterboards.ca.gov/ciwqs.

6.3.3.4 Annual Spill Reporting for Category 4 Spills

The LRO must upload and certify a report, in an acceptable digital format, of all Category 4 spills to the online CIWQS Sanitary Sewer System Database, by February 1st after the end of the calendar year in which the spills occur.

6.3.4 No Spill or Category 4 Spills Certification (Monthly)

If either (1) no spills occur during a calendar month or (2) only Category 4 spills occur during a calendar month, the LRO shall certify, within 30 calendar days after the end of each calendar month, either a "No Spill" certification statement, or a "Category 4 Spills" certification statement in the online CIWQS Sanitary Sewer System Database, certifying that there were either no spills, or Category 4 spills that will be reported annually for the designated month.

If a spill starts in one calendar month and ends in a subsequent calendar month, and the District has no further spills of any category, in the subsequent calendar month, the LRO shall certify "no-spills" for the subsequent calendar month. If the District has no spills from its systems during a calendar month, but the District voluntarily reported a spill from a private lateral or a private system, the Operator in Charge submits and the LRO certifies "no-spills" for that calendar month.

6.3.5 CIWQS Not Available

In the event that the CIWQS online spill database is not available, the LRO should e-mail all required information to the SWRCB Spill Reduction Program office at SanitarySewer@Waterboards.CA.Gov in accordance with the time schedules identified above. In such an event, the District must also submit the appropriate reports using the CIWQS online spill database when the database becomes available. A copy of all documents that certify the submittal in fulfillment of this section shall be retained in the spill document file.

6.3.6 Amending Spill Reports

The LRO is responsible for amending spill reports. Certified spill reports may be updated by amending the report or adding an attachment to the spill report within 90 calendar days after the spill end date. After 90 days, the District must contact the State Spill Reduction Program to request to amend a spill report along with a justification for why the additional information was not available prior to the end of the 90 days. The SWRCB Spill Permit/Reporting contact information is as follows:

SanitarySewer@Waterboards.CA.gov

7. COMMUNICATIONS WITH THE PUBLIC

A sewer backup is a stressful event and may include interactions with an irate resident property owner. Professional presentation is important, as a homeowner will likely become unhappy if it is perceived that response staff are indifferent, uncaring, unresponsive, and/or incompetent.

7.1 General Communications

Effective management of a sewage backup situation is critical to avoid the potential for a costly, prolonged process with the property owner. The property owner should feel assured that the District is responsive and that their best interest is the District's top priority.

How you communicate, whether on the phone, in writing, or in person, is how you will be perceived. Good communication with the homeowner results in greater confidence in the District's ability to address the problem satisfactorily, and a greater chance that the property owner will be cooperative as the District completes response and follow-up activities. When interacting with an affected homeowner, consider the following:

- The homeowner needs ample time to explain the situation. Show interest in what the homeowner has to say. It does not matter if you have heard the story before or already understand the problem.
- As soon as possible, let the homeowner know that you will determine if the source of the sewer backup is in the sewer main and, if it is, will have it corrected as quickly as you can
- State that you understand their concern and then explain what can be done to address the issue, either by the District if applicable, or an outside contractor
- Do not admit fault. The determination of fault is handled by management staff. If it is determined that the District is at fault, the property owner has the right to file a claim for any reasonable repairs or losses resulting from the incident.
- Keep the homeowner informed on what is being done and will be done to correct the problem
- Keep focused on getting the job done in a very professional manner. Small talk and blame are not appropriate during the response activities.

7.2 Public Notification of Spills that Do Not Reach Public Waters

For spills that are contained and do not release unrecovered sewage into a storm drain, stream, or a surface water body, notification to the public shall be accomplished through the use of signs at the location of the spill.

7.3 Public Notification of Spills that Reach Waters of the United States

If sewage reaches a Waters of the United States, EHS will determine if a field investigation of the discharge site and potentially affected areas is required. If possible, verify the extent of the contamination in the field before the water body closure decision is made.

Creeks, streams and beaches that have been contaminated as a result of a spill should be posted at visible access locations until the risk of contamination has subsided to acceptable background levels. The warning signs, once posted, should be checked every day to ensure that they are still in place. "Closed" signs shall be posted at the outfall and a minimum of 100 feet upstream and 100 feet downstream of the discharge. If there is a large volume of sewage, more signs must be posted downstream.

Signs must remain posted until at least two consecutive days of samplings meet the Public Beach Sanitation and Ocean Water-Contact Sports standards, or as otherwise determined by EHS. EHS has the authority to close and re-open the beaches and water bodies for public water contact. The water bodies affected are determined by the following parameters and best professional judgment:

- The volume of sewage discharged
- Parameters affecting flow of sewage to the water bodies
- Direction of current
- Tides
- Past experience in the area; and/or
- Any other pertinent information.

8. TRAINING

8.1 Initial and Annual Refresher Training

All personnel and contractor employees who may have a role in responding to, reporting and/or mitigating a sewer system spill should receive training on the contents of the District's SERP. All new employees should receive training before they are placed in a position where they may have to respond. Current employees should receive annual refresher training on this plan and the procedures to be followed.

The District provides training on wastewater spill and cleanup activities, repairs, risks/hazards, and cleanup. This training includes information on spill notification, available equipment, initial response procedures, sewer bypass pumping, spill estimation, responding to force main breaks, and cleanup and disinfection. At the end of the training session, a quiz is provided to the attendees.

Currently, operators receive periodic training. In the future, personnel in the Utilities Department, the Maintenance Division, and the Water Quality Division also be provided the same training. The District's spill response contractor(s), including Roy's Sewer Service will be required to conduct its own training.

8.2 Spill Response Drills

Sewer spill response personnel should attend periodic training drills to ensure that employees are up to date on these procedures, equipment is in working order, and the required materials are

readily available. The training drills should cover scenarios typically observed during sewer related emergencies (e.g., mainline blockage, mainline failure, force main failure, lift station failure, and lateral blockage). The District will develop a program for these training drills in concurrence with expanding the training program as discussed above.

8.3 Spill Training Record Keeping

The District maintains training and test records related to its annual training at the wastewater treatment plant.

Appendix E – Spill Emergency Response Plan Documents

Appendix SERP-A

- Spill Report Forms
- SSMP and First Responder Contact List

Appendix SERP-B

- Lift Station Emergency Response Plan
- Spill Volume Estimation Methods
- Example Spill Notification Sign(s)
-

Appendix SERP-C

- Water Quality Monitoring Program
- Template for Spill Technical Report

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SERP APPENDIX A

SSMP and First Responder Contact List

Sanitary Sewer Spill Report Forms

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SERP APPENDIX B

Pump Station Emergency Response Plan

Sanitary Sewer Spill Volume Estimation Methods

Example Spill Notification Sign(s)

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SERP APPENDIX C

Water Quality Monitoring Program

Template for Spill Technical Report

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ELEMENT 7 – SEWER PIPE BLOCKAGE CONTROL PROGRAM

The intent of this section of the SSMP is to evaluate the extent and nature of Spills related to factors including Fats, Oils and Grease (FOG), rags, and debris, to determine the need for a Sewer Pipe Blockage Control Program, and to outline the elements of this program if required.

7.1 SSMP Requirements

Each Enrollee shall evaluate its service area to determine whether a sewer pipe blockage control program is needed to control fats, oils, and grease (FOG), rags, and debris. If an Enrollee determines that a sewer pipe blockage control program is not needed, the Enrollee must provide justification for why it is not needed. If a program is needed, it must include:

- An implementation plan and schedule for a public education outreach program that promotes proper disposal of pipe blockage 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 practice (BMP) requirements, record keeping and reporting requirements;
- Authority to inspect grease-producing facilities, enforcement authorities, and whether the Enrollee has sufficient staff to inspect and enforce the FOG ordinance;
- An identification of sanitary sewer system sections subject to FOG blockages and establishment of a cleaning schedule for each section; and
- Implementation of source control measures for all sources of FOG reaching the sanitary sewer system for each section identified above.

7.2 Goals for the Pipe Blockage Control Program

The District does not serve any commercial establishments, as the service area zoning only permits residential developments. In addition, over the past five years, the District has only had one spill related to debris and rags, and no spills related to fats, oil, and grease. As such, the District does not require a formal Sewer Pipe Blockage Control Program. Goals will be established if this should change, and a Pipe Blockage Control Program is required. However,

the District continues to implement proactive sewer pipe blockage control measures through the activities described in the following sections.

7.3 Public Outreach

The District's Oceana Marina webpage includes flyers to promote the best practices for preventing the discharge of FOG and other non-dispersible items into the sanitary sewer system. These flyers are provided in Appendix F.

7.4 Legal Authority to Prohibit Discharges and Enforcement Authorities

The District's authority to regulate the discharge of FOG and debris is provided by Regulation 105. Regulation 105.b (3) states:

- "Except as herein provided no person shall discharge or cause to be discharged any of the following described water or wastes to any sewer main or side-sewer… (3) any ashes, cinders, sand, mud, straw, shavings, metal, glass, rags, feathers, tar, plastics, wood, fat, oil, grease, or any other solid or viscous substance capable of causing obstruction to the flow in sewer mains or other interferences with the proper operation of the sewage facilities."

Furthermore, Regulation 107 provides the District with the authority to enforce any violations to its sewer regulations, including those related to the discharge of FOG, rags, and debris. The District has the authority to inspect grease producing facilities through Regulation 105. Regulation 105 states: "the District may inspect the facilities of any owner to ascertain whether the purpose of this Regulation is being met and all District requirements are being complied with."

7.5 Requirements to Install Grease Removal Devices

Regulation 105 requires any facility that generates grease or sand in significant quantities to the sewer system to install a grease trap or interceptor, as approved by the Chief Engineer. The design standard for grease and sand interceptors is located in Appendix D. These devices must be installed in locations that allow easy access for maintenance and inspection and must also be properly maintained.

7.6 Sewer Sections Subject to FOG and Debris

The District reviews available cleaning, inspection, spill, and maintenance records to identify sewer pipes with recurring FOG, debris, or other maintenance concerns. Sewer pipes with maintenance concerns may receive more frequent inspection or cleaning based on observed conditions and available maintenance records.

Appendix F – Sewer Pipe Blockage Control Program Documents

Appendix I includes the following documents related to this section. The information in these documents will change from time to time, and the documents in Appendix I may have been superseded. Please contact the Director of Operations for the most recent updates to the Appendix I documents.

- Fats, Oils, & Grease Informational Flyer
- Flushable Wipes Flyer

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ELEMENT 8 - SYSTEM EVALUATION AND CAPACITY ASSURANCE PLAN

This section of the SSMP discusses the District's activities related to capacity management.

8.1 SSMP Requirements

The District's capital improvement plan (CIP) must provide hydraulic capacity of key sanitary sewer system elements from dry weather peak flow conditions, as well as the appropriate design storm or wet weather event. At a minimum, the plan must include:

- **System Evaluation and Condition Assessment**: The Plan must include procedures to evaluate the sanitary sewer system assets; identify and justify the percentage of the system for condition assessment each year; prioritize the condition assessment of system areas that hold a high level of environmental consequence or are located in or within the vicinity of surface waters, steep terrain, high groundwater elevations, environmentally sensitive areas, or are within the vicinity of a receiving water with a bacterial-related impairment on the most current Clean Water Act section 303(d) List; utilize observations/evidence of system conditions that may contribute to exiting of sewage from the system; maintain documents and recordkeeping; and identify system assets vulnerable to direct and indirect impacts of climate change.

- **Design Criteria**: The Plan must include procedures to identify system components that have a hydraulic deficiency and/or limited capacity. The plan should identify the major sources that contribute to peak flows, with consideration of data from existing system condition assessments, system inspections, system audits, spill history, and other available information, flood-prone areas, potential impacts of potentially higher-intensity storm events as a result of climate change, and increases of erosive forces in canyons and streams. The plan should also review 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 project schedules, internal and external project funding sources for each project; 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.

8.2 System Evaluation and Condition Assessment

The District has not had any capacity-related Spills over the past five years, according to the California Integrated Water Quality System Project (CIWQS). The District completed the Oceana Marin Master Plan Update in 2015, in which dry and wet weather flow volumes are discussed. Flows over a 5+ year time period were reviewed. During this period, average annual flow ranged from 5.1 million gallons ("MG") to 7.3 MG, with an overall average annual flow of 6.2 MG. Based on the number of connections, the master plan estimates a dry weather annual baseflow of 5.8 MG. Therefore, across the 5.5 years of flow that were reviewed, wet weather inflow and infiltration contributed approximately 400,000 gallons to the system per year on average. Although this I&I can be conveyed by the system without sewer system spills, the District continues to work toward reducing inflow and infiltration further through pipeline repairs.

The District's system has experienced no known capacity-related issues, and the District has no known plans for current or future expansion. Having fewer than 300 connections, the gravity sewer pipelines are sized to facilitate maintenance, and as a result, are oversized for the expected flow. Therefore, there is no immediate need to measure system flows or develop a computerized hydraulic model.

The District will periodically evaluate whether additional capacity or condition assessments are warranted based on system performance, spill history, observed infiltration and inflow, changes in development or flows, regulatory requirements, and other available information.

New GWDR Requirements Related to Condition and Capacity

The GWDR requires the capacity assessment to consider flood-prone areas, higher-intensity storm events, climate-related vulnerabilities, and the potential effects of erosion near gravity sewer pipelines. These topics will be reviewed further when the District updates the Oceana Marin Master Plan.

Condition assessments other than capacity are discussed in Element 4. In addition to routine assessments and scheduled repairs, the District will begin integrating requirements of the GWDR into future condition assessment planning. Future inspections will consider areas that: 1) hold a high level of environmental consequence, 2) are located in or within the vicinity of surface waters, steep terrain, high groundwater elevations, environmentally sensitive areas, 3) are within the vicinity of a receiving water with a bacterial-related impairment on the most current Clean Water Act section 303(d) List, and/or 4) are vulnerable to direct and indirect impact of climate change.

8.3 Capital Improvement Program Budget and Schedule

The 2015 Master Plan Update includes a Capital Improvement Program with estimated project costs and assigned priorities that consider the need to improve system function, enhance reliability and redundancy, and reduce inflow and infiltration (I&I). The District does not have capacity-

related system constraints, and therefore has not identified capacity-related projects in the CIP. The Master Plan CIP has a total estimated cost of $3.12 million. However, this estimate reflects costs from 2015 and should not be directly compared to current CIP costs. Future Master Plan updates will provide updated cost estimates that more accurately reflect current costs.

The District utilizes available pipeline CCTV inspection results to prioritize identified defects for repair based on system needs and available funding. The District's 5-year CIP for FY 26/27 to FY 30/31 includes sewer force main, lift station, and treatment pond improvement projects with a total estimated cost of $355,000. The District's five-year CIP is included in Appendix C and includes estimated timelines and funding sources.

Projects will be further defined with joint coordination between operations and maintenance staff, and also with engineering staff and consultants during the planning, design, and construction phases, including the development of project schedules and identification of funding sources. In addition, interagency coordination will occur if other utility agencies are impacted by each project.

Appendix G – System Evaluation and Capacity Assurance Plan Documents

- 2015 Oceana Marin Master Plan Update

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ELEMENT 9 - MONITORING, MEASUREMENT AND PROGRAM MODIFICATIONS

This section of the SSMP discusses the District's Monitoring, Measurement, and Program Modifications.

9.1 SSMP Requirements

The District shall 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;
- Monitor the implementation and measure the effectiveness of each Plan element;
- Update Plan procedures and activities, as appropriate, based on the results of monitoring or performance evaluations; and
- Identify and illustrate spill trends, including spill frequency, locations, and estimated volumes.

9.2 Adaptive Management

The District includes adaptive management principles to ensure effective implementation and continuous improvement, as discussed below.

- Maintaining relevant information, including audit findings, to establish and prioritize appropriate Plan activities. The District conducts triannual audits as discussed in Element 10. Recommendations from the audits are incorporated into Plan updates, as shown on the schedule in Element 1.
- Monitoring the implementation and measuring the effectiveness of each Plan Element is completed through the Plan audits. Performance metrics are tracked in this Element 9.
- Assessing the success of the preventive operation and maintenance activities. The effectiveness of preventive operation and maintenance activities is assessed through the Plan audits; recommendations from the audits are included in SSMP updates per the schedule shown in Element 1.
- Updating Plan procedures and activities, as appropriate, based on results of monitoring and performance evaluations.
- Identifying and illustrating spill trends, including spill frequency, locations, and estimated volumes.

The remaining information provides information on spill trends, frequency, locations, and estimated volumes.

9.3 Utility Metrics to Measure Progress and Prioritize Activities

The District maintains complaint and blockage records, and due to the small number of assets in the Oceana Marin sewer system, records preventive maintenance activities using Microsoft Excel. This information is used to establish and prioritize appropriate SSMP activities.

The District has established the preventive maintenance sewer metrics that are shown in Table 9-1 for use in monitoring, measuring, and adjusting sewer maintenance activities. The District will compare the results of these measurements against stated goals and prior performance to assess the implementation of the SSMP. These metrics may be adjusted from time to time, and will be reviewed as part of the SSMP audit.

Table 9-1. Success Factors and Metrics

Sewer Maintenance Success Factor	Metric
Pipes Cleaned	Miles
Pipe Inspected (CCTV)	Miles
Priority Locations Cleaned	Number of Pipes where Follow-up Cleaning is Required after CCTV Inspection
Spills	Number by Underlying Cause
Response Time	Minutes per Spill after Notification
Lift Station Spills	Number by Cause
Pipe Replaced	Miles/Year

9.4 Spill Trends

General Spill trends are provided in Table 9-2 and Table 9-3. All data was obtained from the California Integrated Water Quality System (CIWQS) public reports. Between January 2021 and December 2025, the District reported two spills with a total volume of 3,859 gallons. The primary causes were a structural failure and debris/rags.

Table 9-2. Spills by Cause

Cause of Spill	2021	2022	2023	2024	2025
Debris	0	1	0	0	0
Roots	0	0	0	0	0
Grease	0	0	0	0	0
Capacity	0	0	0	0	0
Others (Structural, Lift Station Failure)	1	0	0	0	0
Total	**1**	**1**	**0**	**0**	**0**

Table 9-3. Spill Volume Trends

Parameters	Year				
	2021	2022	2023	2024	2025
Number of dry weather Spills	0	0	0	0	0
Number of wet weather Spills (capacity-related)	0	0	0	0	0
Total number of Spills	1	1	0	0	0
Number of Spills < 100 gallons	0	0	0	0	0
Number of Spills 100 to 999 gallons	0	1	0	0	0
Number of Spills 1,000 to 9,999 gallons	1	0	0	0	0
Number of Spills > 10,000 gallons	0	0	0	0	0
Total volume of Spills (gallons)	3,359	500	0	0	0
Total volume recovered and returned to collection system (gallons)	0	0	0	0	0
Net volume of Spills (total minus recovered, gal)	3,359	500	0	0	0
Percent volume recovered (100 x Total volume recovered / Total volume of Spills)	0	0	0	0	0
Volume Reaching Water	0	0	0	0	0

9.5 SSMP Updates

It is the District's intention that the SSMP remain a living document. As such, the document will be updated as needed to reflect program or organizational changes, new regulatory requirements, and other changing conditions. The District will perform a formal SSMP audit every three years as described in Element 10. A comprehensive SSMP update will occur every 6 years, at a minimum.

The District completed its prior SSMP update in 2023. No changes to the SSMP were identified between the 2023 update and the current 2026 update.

Appendix H – Monitoring, Measurement and Program Modification Documents

There are no Appendix documents to accompany Section IX. However, this Appendix H is included as a placeholder for future documents.

ELEMENT 10 - SSMP PROGRAM AUDITS

This section of the SSMP discusses plans for required self-audits of the SSMP.

10.1 SSMP Requirements

As part of the Sewer System Management Plan (SSMP), the Enrollee shall include internal audit procedures, appropriate to the size and performance of the system, for the Enrollee to comply with section 5.4 (Sewer System Management Plan Audits) of this General Order.

At a minimum, these audits must occur every three years and a report must be prepared and kept on file. This audit shall focus on evaluating the effectiveness of the SSMP and the Enrollee's compliance with the SSMP requirements, including identification of any deficiencies in the SSMP and steps to correct them. 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 the most updated 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 SSMP 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.

10.2 Audit Procedures, Roles and Responsibilities

The District audits its SSMP every three years, with the next audit due February 2, 2029. The SSMP audit considers any updates to the WDR or other regulatory requirements. It then compares the District's SSMP to its current sanitary sewer maintenance practices to determine whether the District is following its SSMP. Finally, it will make recommendations to adjust the SSMP and/or District sanitary sewer maintenance practices.

The required SSMP audits will be conducted internally by District staff. The District may retain a consultant when an audit coincides with the six-year SSMP update or when specialized

assistance is needed. A consultant may assist with the SSMP update, but District staff remain responsible for reviewing implementation and audit findings.

The scope of the audit covers each of the sections of the SSMP (in addition to any changes to the SSMP guidelines). District staff conducting the audit evaluate the District's actual performance against its performance indicators contained in Element 9 (Monitoring, Measurement and Program Modifications). The audit uses an SSMP audit checklist, provided in Appendix I. The Audit Report evaluates the District's successes in implementing the most recent version of its SSMP elements and identifies revisions that may be needed for a more effective program. Changes made as a result of the 3-year Audits are re-adopted as part of the District's 6-year SSMP update.

10.3 SSMP Program Modification/Update Process

If the triennial audit identifies significant changes to be made to the SSMP, then the SSMP will be updated by August 2 of the same year in which the audit was submitted, and will either address or provide a plan to address the change. However, it is anticipated that the main SSMP document will remain generally unchanged, and that a comprehensive SSMP update will be completed every 6 years, as required by the WDR.

Changes made to the SSMP are documented in the Change Log located in Appendix I.

Appendix I – SSMP Program Audit Documents

Appendix I includes the following documents related to this section. The information in these documents will change from time to time, and the documents in Appendix I may have been superseded. Please contact the Director of Operations for the most recent updates to the Appendix I documents.

- SSMP Change Log
- SSMP Blank Change Log
- SSMP Audit Forms
- SSMP Blank Audit Form

ELEMENT 11 - COMMUNICATION PLAN

This section of the SSMP discusses the District communication plan. This section fulfills the Communication Plan requirements for the SWRCB element.

11.1 SSMP Requirements

- The Enrollee shall communicate on a regular basis 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 (i.e., SSMP), including opportunities for public input to Plan implementation and updates;
- The Enrollee shall also create a plan of communication with owners/operators of systems that connect into the Enrollee's system, including satellite systems, for system operation, maintenance, and capital improvement-related activities.

11.2 Communication Plan

11.2.1 Board Meetings and Public Input

The District discusses updates to the SSMP and periodically provides updates regarding sewer system Operations & Maintenance at publicly noticed District Board meetings. District Board meetings typically occur on the first and third Tuesday of the month at 999 Rush Creek Place, Novato, CA. The public is invited and encouraged to attend these meetings. Upon completion, the 2026 SSMP Update will be presented to the District Board, along with a memorandum describing the purpose of the update and process used to revise the document. The public will be able to access this information through the meeting agenda and minutes posted on the District's website.

11.2.2 District Website

The District maintains a website (https://nmwd.com/) to inform the public about its activities. Typical information on the website includes general information about the District (including the Oceana Marina collection system), regulations, community links, Board meeting agendas and minutes, and general water education information. The District's website also serves as a tool to convey news to the public. In addition, the District maintains a webpage dedicated to the Oceana Marin Sewer. The SSMP is publicly available on this page, and the 2026 SSMP Update will be posted upon completion. The District also maintains a presence on Instagram and Facebook to provide regular updates on topics of importance to the community.

11.2.3 Public Notification of Spills

The District notifies the public of sanitary sewer spills through the placement of signage at the spill location. In addition, door notices may be used where appropriate to notify nearby residents.

Given that the District serves a small community, signage is generally considered sufficient to inform the public of spills. However, the District maintains contact information for the homeowners' association for additional notification if needed.

11.2.4 Satellite Systems

The District does not receive flows from satellite systems. If any agencies or private systems are connected in the future, the District will establish coordination procedures to address operation, maintenance, and capital planning requirements.

Appendix J – Communication Plan Documents

There are no Appendix documents to accompany Section XI. However, this Appendix J is included as a placeholder for future documents.

Appendix A

Element 2 (Organization) Supporting Documents

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SSMP AND SPILL RESPONSE CONTACT NAMES AND NUMBERS

DISTRICT MAIN NUMBER: (415) 897-4133

NAME	TITLE	PHONE NO.	EMAIL
Tim Kennedy	Director of Operations	(415) 720-7187	TKennedy@NMWD.com
Jeff Corda	Treatment and Distribution Supervisor	(415) 720-1877	JCorda@NMWD.com
	Roy's Sewer Service	(415) 892-5480	
	District Laboratory	(415) 897-4133	
	Marin County Fire	9-1-1	
	Office of Emergency Services (OES)	(800) 852-7550	
	County Public Health Officer	(415) 473-4163	
	Environmental Health Services	(415) 473-6907	
	County Sheriff's Office	(415) 473-7250	
	SWRCB (CIWQS Questions)	866-79-CIWQS (24977)	

Table 2-2. List of Haulers and Contractors

NAME	LOCATION	PHONE NO.
City Sewer Service	Pt. Reyes Station	(415) 663-1926
Roto Rooter	San Rafael	(415) 454-7281
Roy's Sewer Service	Cotati	(415) 892-5480
Petaluma Septic Service	Petaluma	(707) 888-2822

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Mutual Aid and Assistance Agreement
Between
North Marin Water District and Novato Sanitary District

This agreement is made and entered into by the North Marin Water District and Novato Sanitary District ("Districts") to provide mutual aid and assistance to each other in times of need and to provide reimbursement for equipment, supplies and personnel made available under this agreement.

In consideration of the mutual covenants and agreements hereinafter set forth, the Districts agree to provide mutual aid and assistance to each another in times of need. Each District has the absolute discretion to decline to provide any requested assistance, and the execution of this agreement shall not create any duty to respond on the part of either District.

The General Manager of either District may request aid and assistance (Requesting District) from the General Manager of the other District (Responding District). Requests for assistance can be made orally or in writing. When made orally, the request for personnel, equipment and supplies shall also be prepared in writing and submitted to the other General Manager as soon a practicable.

When either District receives a request for aid or assistance, the General Manager of the Responding District will evaluate the request and shall inform, as soon as possible, the Requesting District about the type of available resources, if any, and the approximate arrival time of such assistance.

Employees provided under this agreement will be under the direction and control of the Requesting District. The Requesting District's designated supervisor(s) must keep accurate records of time expended and work performed by personnel during the period of assistance. The Responding District's General Manager retains the right to withdraw some or all of its resources at any time for any reason in the Responding District's sole discretion.

Cost Reimbursement
Personnel: The Responding District will make such employees as are willing to participate available to the Requesting District at the Requesting District's expense, defined as being equal to the Responding District's full cost, i.e., equal to the employee's applicable salary or hourly wage plus fringe benefits and overhead. The Requesting District shall be responsible for all direct and indirect labor costs.

Equipment: Use of equipment, such as construction equipment, vehicles, tools, pumps and generators, shall be at the Responding District's current equipment rate and subject to the following conditions: The Requesting District shall reimburse the Responding District for use of equipment including, but not limited to, all fuel, lubrication, maintenance, transportation, and loading/unloading of loaned equipment. All equipment shall be returned to the Responding District as soon as is practicable and reasonable under the circumstances.

(a) At the option of the Responding District, equipment may be provided with an operator;
(b) Equipment shall be returned to the Responding District within 24 hours after receipt of an oral or written request for return;
(c) In the event equipment is damaged while being dispatched to Requesting District, or while in the custody and use of Requesting District, Requesting District shall reimburse the Responding District for the reasonable cost of repairing said damaged equipment. If

the equipment can not be repaired, the Requesting District shall reimburse the Responding District for the cost of replacing such equipment with equipment that is of at least equal capability as determined by the Responding District. If the Responding District must lease a piece of equipment while the Requesting District equipment is being repaired or replaced, the Requesting District shall reimburse the Responding District for such lease cost.

Materials and supplies: The Requesting District shall reimburse the Responding District in kind or at actual replacement cost, plus handling charges, for use of expendable or non-returnable supplies. Other supplies and reusable items that are returned to the Responding District in a clean, damage-free condition shall not be charged to the Requesting District and no rental fee shall be charged; otherwise, they shall be treated as expendable supplies. Supplies that are returned to the Responding District with damage must be treated as expendable supplies for purposes of cost reimbursement.

Payment Period: The Responding District shall provide an itemized invoice to the Requesting District for the expense incurred in providing assistance under this agreement not later than the 10th of the month following the month wherein assistance is provided. The Requesting District agrees to reimburse the Responding District within 15 days from receipt of an invoice.

Records: Authorized representatives of each District shall have access to the other's books, documents, notes, reports, papers and records for the purpose of reviewing the accuracy of the invoice(s) rendered.

Indemnity: Each District shall assume the defense of, fully indemnify, and hold harmless the other District, its Directors, officers and employees, from all claims, loss, damage, injury and liability of every kind, nature and description, directly or indirectly arising from assistance provided hereunder, including, but not limited to, negligent or wrongful use of equipment, supplies or personnel provided, or faulty workmanship or other negligent acts, errors or omission.

Workers' Compensation: Each District is responsible for providing worker's compensation benefits and administering worker's compensation for its employees.

Effective Date: This agreement shall take effect upon execution.

Termination: Either District may terminate this agreement by providing written notice to the other. Termination does not absolve the Requesting District's duty to reimburse the Responding District for assistance rendered, which duty shall survive such termination.

Modification: Modification to this agreement must be in writing.

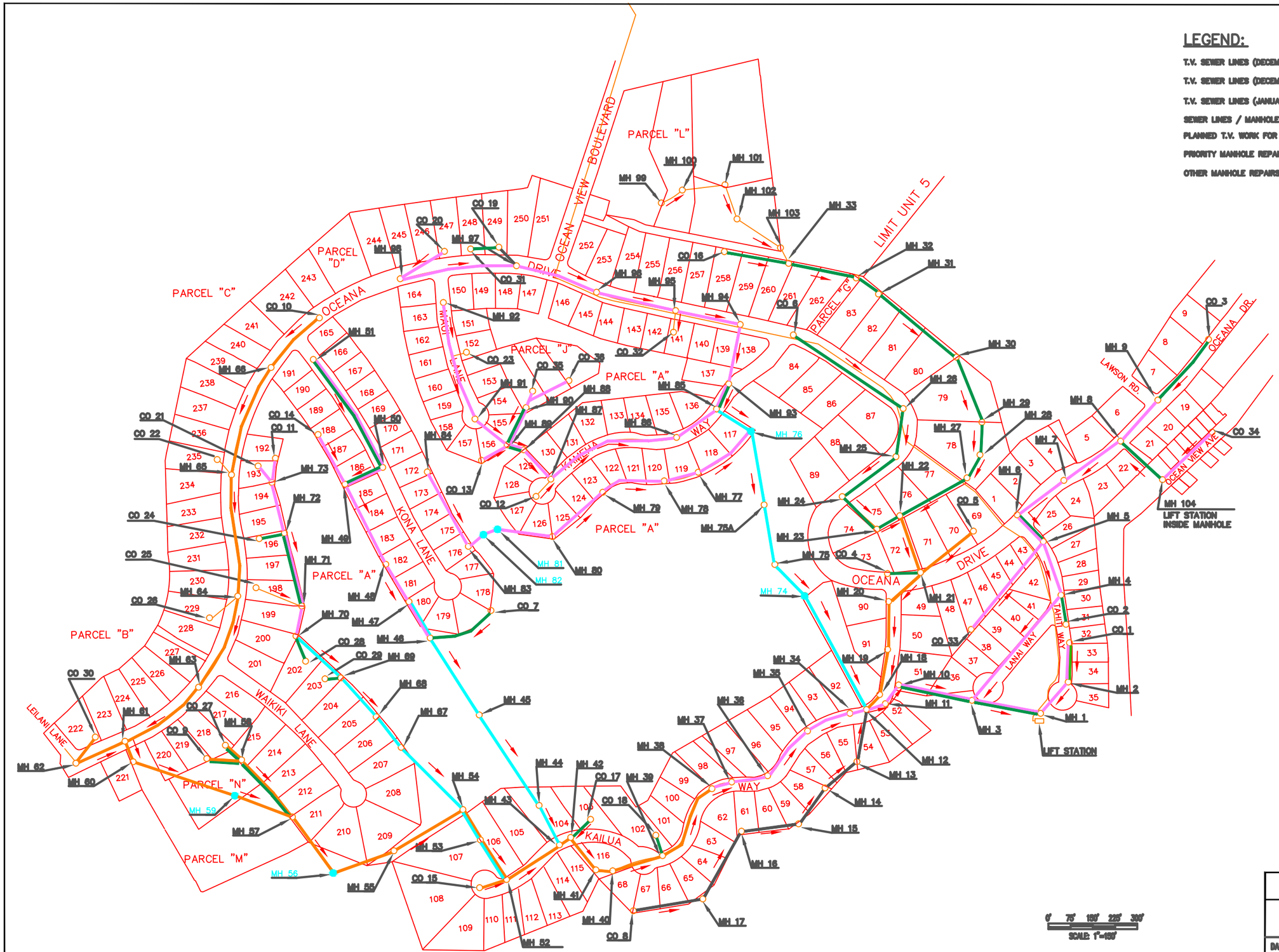
Severability: If any provision of this agreement is declared by a court of competent jurisdiction to be invalid, the validity of the remaining terms and provisions shall not be affected.

Chris DeGabriele 1/28/2010

Chris DeGabriele Date
North Marin Water District

Beverly B James 1/28/2010

Beverly James Date
Novato Sanitary District



LEGEND:

T.V. SEWER LINES (DECEMBER 2008)	QUANTITY:	0.3599 MI
T.V. SEWER LINES (DECEMBER 2009)	QUANTITY:	1.1441 MI
T.V. SEWER LINES (JANUARY & FEBRUARY 2012)	QUANTITY:	1.9213 MI
SEWER LINES / MANHOLES RELINED IN FY2013	QUANTITY:	0.XXXX MI
PLANNED T.V. WORK FOR FY2014	QUANTITY:	0.XXXX MI
PRIORITY MANHOLE REPAIRS FOR FY2014	59 base, 30, 29, 28, 42, 43, 65, 90, 89	
OTHER MANHOLE REPAIRS FOR FY2014	4, 12, 13, 14, 15, 16, 17, 44, 45, 46, 47, 48, 49, 52, 66, 69, 71, 73; CO #8	

(COLLECTION SYSTEM = 4.4 MILES)

NORTH MARIN WATER DISTRICT
NOVATO, CALIFORNIA

OCEANA MARIN SEWER SYSTEM
CLOSED CIRCUIT T.V. MAP

DATE CREATED: 08/28/07	BY:	LJ	
REVISION DATE: 11/11/09	BY:	LJ	SCALE: 1" = 150'
REVISION DATE: 3/24/14	BY:	SK	DRAWING NO. OPS 6A
APPROVED DATE:	BY:		

Jan 22, 2015 - 7:46am \\pwnsdserver1\pwdrtdmsmo\O&M Tech\ASSET MGMT\O&M SEWER\O&M Sewer System CCTV Map (REV 2).dwg User: ACHATTLER

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Appendix B

Element 3 (Legal Authority) Supporting Documents

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NORTH MARIN WATER DISTRICT

REGULATION 100

GENERAL PROVISIONS

a. Intent and Purpose

It is the intent and purpose of the Board of Directors of the North Marin Water District to protect the public health and safety through enforcement of these regulations in the design, construction and use of sewage facilities within the jurisdiction of the District.

b. Authority

These regulations are adopted pursuant to provisions of Section 31100 and following, of the Water Code of the State of California.

c. Definitions

As used in this Part D of the Regulations of North Marin Water District, the following terms have the meaning stated below.

(1) Applicant

Shall mean the owner of the premises to be served by the sewer proposed to be installed or connected, or the owner's authorized agent.

(2) Application

Shall mean an application for sewer service which shall be on a form provided by the District for that purpose, and which shall describe the work proposed to be done, the location, ownership, occupancy, and use of the premises proposed to be served, the characteristics of the waste proposed to be introduced into the District's sewage facility, and be accompanied by such plans and specifications and further information as may be determined by the District to be necessary.

(3) Agreement

Shall mean an agreement between the Applicant and the District that establishes by the terms and conditions under which any sewage facilities shall be installed, replaced or extended.

(4) Board of Directors

Shall mean the Board of Directors of the North Marin Water District.

(5) BOD (Biochemical Oxygen Demand)

Shall mean the quantity of oxygen utilized in the biochemical oxidation of organic matter under standard laboratory procedure in 5 days at 20E centigrade expressed in milligrams per liter.

(6) Building

Shall mean any structure containing any facility generating sewage requiring disposal into the District's sewage facility.

(7) County

Shall mean the County of Marin.

(8) District

Shall mean the North Marin Water District.

(9) Improvement District

Improvement District shall mean a specific portion of land within the boundaries of the District designated by the District as being an area in which the District will provide sewer service and to which certain debt obligations are assigned.

(10) Infiltration

Shall mean groundwater entering sewers through defective joints, and broken or cracked pipe and manholes.

(11) Sewer Main

Shall mean a public sewer into which storm, surface and ground waters are not intentionally admitted and which lies within a public street or easement readily accessible to the District.

(12) Private Disposal System

Shall mean any system of treatment devices or facilities (excluding chemical toilets) that store, convey, treat or dispose sewage which is discharged anywhere other than into a public sewer system.

(13) Regulations, Sewer Regulations, These Regulations

Shall mean the regulations of the District in this Part D.

(14) Sewage

Shall mean any liquid waste containing matter in suspension or solution.

(15) Sewage Facility

Shall mean all facilities for collecting, pumping, treating and disposing of sewage or for conveying treated sewage to points of reuse.

(16) Sewer

Shall mean a pipe or conduit for carrying sewage.

(17) Side-Sewer

Shall mean the sewer line connecting the building sewer and the sewer main.

d. Agreement, Inspection and Fees

(1) No sewer main or side-sewer shall be installed, replaced, or extended within the District until a sewer service agreement is signed by both the Applicant and the District, all fees, charges and estimated construction costs required under Regulations 106 and 109 are paid, and all necessary right-of-ways are granted to the District.

(2) No connection with or use of any sewer main or side-sewer shall be made until the sewer main and side-sewer has been inspected and approved by the District.

e. Land Use Approval Established

An application for service to unimproved land shall not be processed to completion by the District unless the Applicant presents to the District a document from the County of Marin verifying that:

(1) A valid building permit has been issued; or

(2) A preliminary division of land has been approved; or

(3) A tentative subdivision map has been approved; or

(4) A planned unit development precise development plan has been approved; or

(5) A conditional use permit has been approved.

Unimproved land means land on which no improvements exist or land which although improved to a degree is being further improved and said further improvement is the cause for augmented sewer service and requires one or more of the above listed land use approvals.

f. Validity

If any provision of these regulations or the application thereof to any person or circumstance is held invalid the remainder of the regulation and the application of such provisions to other persons or circumstances shall not be affected thereby.

NORTH MARIN WATER DISTRICT

REGULATION 101

USE OF SEWER MAIN REQUIRED

a. Disposal of Wastes

The discharge of any sewage, commercial or industrial wastes or other polluted waters to any stream or water courses located within an Improvement District is prohibited.

b. Unlawful Disposal

Except as herein provided, construction of any privy, privy vault, septic tank, cesspool, or seepage pit facility intended to be used for the disposal of sewage within an Improvement District is prohibited.

c. Occupancy Prohibited

No building within an Improvement District shall be occupied until the owner of the premises has complied with the provisions of these regulations.

d. Connection to Sewer Main Required

The owner of any building on land in an Improvement District which is within four hundred (400) feet of a District sewer main shall at his or her expense connect said building directly to the sewer main in accordance with the provisions of this regulation within ninety (90) days after notification by the District. The District may waive this requirement upon finding that such connection is not necessary to protect the public health and welfare.

NORTH MARIN WATER DISTRICT

REGULATION 102

PRIVATE SEWAGE DISPOSAL

a. Public Sewer Not Available

Where a District sewer is not available to serve a building in an Improvement District, the building sewer shall be connected to a private sewage disposal system complying with provisions of the Marin County Code.

b. Replaced Private Disposal Systems

Where a property previously served by a private sewage disposal system is annexed into an Improvement District and is then served by a District sewer, the disposition of the private sewage disposal system replaced shall be in accordance with the Marin County Code.

NORTH MARIN WATER DISTRICT

REGULATION 103

SIDE-SEWER CONNECTIONS

a. Agreement Required

In accordance with Section d. of Regulation 100 no person shall construct a side-sewer or make a connection with any sewer main or side sewer without first entering into an agreement with the District and, except to the extent expressly prohibited by Governmental Code section 65852.2, paying all fees, charges and estimated construction costs as required under Regulations 106, and 109.

b. When Extension of Sewer Main Required

Extension of a District sewer main shall be constructed to serve new consumers whose lands do not have direct access to or do not abut a street or easement containing an adequate sewer main. Property with direct access to a street or easement containing an adequate sewer main, but which does not have a major frontage on the street or easement, will be served at such street or easement provided that such property and adjacent properties cannot be further subdivided or developed.

c. Construction Requirements

(1) Construction of side-sewers shall be in accordance with the NMWD Standard Drawings, Sewer.

(2) No person shall uncover or otherwise alter or disturb a side-sewer without first receiving the consent of the District.

d. Separate Side-Sewers

Each separate building shall be connected to the sewer main with a separate side-sewer except that one or more buildings located on property owned by the same person may be served by the same side-sewer if the District is expressly required by Government Code section 65852.2 to allow an accessory dwelling unit to be served by the same side sewer as the primary dwelling, or if the District determines that it is unlikely that the property can or will be subdivided in the future. However, if for any reason the property is subsequently subdivided, each building under separate ownership shall be provided by the owner with a separate side-sewer and sewer main extension as required by the District. Continued use of such common side-sewer is prohibited.

e. Old Building Side-Sewers

An old building side-sewer may be used in connection with a new building only if, after inspection, the District determines that the side-sewer meets all current District requirements.

f. Maintenance of Side-Sewers

The maintenance of each side-sewer shall be the responsibility of the owner of the property served thereby. The cost of testing, inspecting, maintaining, repairing, replacing and relocating a side-sewer shall be borne by the owner of the property served thereby. The owner shall keep the side-sewer free of infiltration.

g. Testing of Side-Sewers

Side-sewers may be tested under the supervision of the District in each of the following circumstances:

(1) on remodeling or enlargement of the property served involving the installation of any

plumbing fixture,

(2) on change of use of the building served as residential, commercial or industrial,

(3) on connection to repair or replacement of the side-sewer, and

(4) on request of the District.

h. Sewers Too Low

In all buildings in which any building sewer is too low to permit gravity flow to the existing sewer main or side-sewer, the District will require that all other methods of obtaining gravity flow must be examined. Any new construction that is required in order to achieve gravity flow will be at the property owner's expense.

The District will determine if gravity flow sewer service to the property is not feasible. In this case, the sewage carried by such building sewer shall be lifted by a private pump system subject to District approval and discharged to the sewer main or side-sewer as determined by the District and at the expense of the owner. The Applicant shall enter into a recordable agreement running with the land to be served agreeing to accept such service and releasing the District from any liability and from all responsibility to provide gravity service and agreeing to maintain in good condition and repair without cost to the District the private pump system including:

(1) collection basin

(2) sewage pump or grinder pump as required

(3) cleanouts appropriately located to remedy pipe blockages

(4) check valve to prevent sewage in the District's sewer system from draining into the owner's private system.

NORTH MARIN WATER DISTRICT

REGULATION 104

SEWAGE FACILITY CONSTRUCTION

a. Facility Size and Design

All extensions of the District's sewage facility shall be designed by the District and constructed in accordance with the District's plans and specifications. The location, size, type and design of all such extensions shall be sufficient to provide adequate sewage collection, pumping, treatment and disposal capacity for the entire area that can economically be served therefrom as conclusively determined by the District.

b. Construction by District

Subject to the rights of the Applicant as herein set forth, the District will construct extension of its sewage facilities. Such work will be commenced only after the Applicant has entered into a sewer service agreement, advanced the total estimated cost of all facilities, paid all charges as required by Regulations 106 and 109 and provided easements as required by Section e. hereof.

c. Construction by Applicant

(1) Right of Applicant to Construct

The Applicant may elect to construct extensions to the District's sewage facilities, with materials furnished by the District, provided, however, the District reserves the right to construct, with its own personnel or by private contract, any of the following:

(a) Sewer mains, pumping plants, storage and treatment facilities and disposal facilities.

(b) Extensions involving complicated connections to, or interference with, the District's existing facilities as solely determined by the District.

(2) Conditions

Construction by the Applicant shall be subject to each of the following conditions:

(a) Prior to commencement of construction the Applicant shall enter into a sewer service agreement, advance all fees, costs of materials to be furnished and work to be performed by the District, pay all charges as required by Regulations 106, 108 and 109 and furnish the District with a performance bond satisfactory to the District in an amount equal to 100% of the estimated cost of the construction by the Applicant.

(b) All work shall be performed by a competent and experienced contractor licensed for underground construction and with experienced laborers.

(c) All work shall be performed in a good, workmanlike and safe manner and in accordance with the plans and specifications of the District, under its inspection and to the satisfaction of its Chief Engineer. Risk of loss or damage to materials or use and installation of faulty materials shall be borne by the Applicant until the facilities constructed are accepted by the District.

(d) All facilities shall be maintained by the contractor that installed the same for one year, or such longer period as shall be specified by the District, following the acceptance thereof by the District.

d. All Work to be Inspected

All sewer mains, side-sewers and other sewage facility work shall be inspected by the District to ensure compliance with all requirements of the District. No sewer or side-sewer shall be covered at any point until it has been inspected and passed for acceptance. No sewer or side-sewer shall be connected to the District's sewer mains until the work described in the plans and specifications, with any corrections or modifications made with the consent of the District, is completed, inspected and approved by the District.

e. Land, Easement and Rights-of-Way

(1) Requirement of District Ownership

All extensions of the District's sewage facility shall at all times be the property of, and be controlled by, the District. District sewage facilities shall be located only in dedicated and accepted public streets, or within dedicated utility easements or within satisfactory easements granted to the District.

(2) Time and Cost of Acquisition

No facilities will be constructed until all rights-of-way, easements and facility sites as required by and satisfactory to the District shall have been conveyed to the District without cost to the District. In the event such rights-of-way, easements or lands are not conveyed by the Applicant, the Applicant shall pay the District its entire cost of acquisition thereof, including appraisers' fees, escrow charges, title insurance premiums and legal expenses.

f. Street Excavation Permit

Any contractor intending to excavate in a public or private street for the purpose of installing sewers or making sewer connections must obtain all necessary permits and authorizations from the City or County having jurisdiction.

g. Liability

The District and its officers, agents and employees shall not be liable for injury or death to any person or damage to any property arising out of the performance of any work by any Applicant. The Applicant shall indemnify the District, its officers, agents and employees for all damages, costs, expenses, fees and interest thereby incurred.

h. Determination of Construction Costs

The District shall determine its actual cost of all extensions. Costs shall include labor, materials, overhead, engineering, legal and administrative expenses allocable to such work. The District's determination of costs shall be conclusive.

If, at any time prior to completion of the extension, the District increases its estimate of said cost, the Applicant will pay the amount of the increase within 30 days after billing. If the District's actual costs of the extension exceed the estimated amounts paid, the Applicant will pay the difference within 30 days after the billing and prior to commencement of service. If the estimated amounts paid exceed the actual costs, the District will refund the excess promptly, without interest.

NORTH MARIN WATER DISTRICT

REGULATION 105

USE OF SEWER MAINS

a. Drainage Prohibited

No leaders from roofs or surface drains for rainwater runoff shall be connected to any sewer main or side-sewer. No surface or subsurface drainage, rainwater, storm water, seepage water, water from yard fountains, ponds, lawn sprays, yard drainage, cooling water or other unpolluted commercial or industrial process water shall be permitted to enter any sewer main or side-sewer by any device or method.

b. Types of Waste Prohibited

Except as herein provided no person shall discharge or cause to be discharged any of the following described water or wastes to any sewer main or side-sewer:

(1) Any gasoline, naphtha, fuel oil or other flammable or explosive liquid, solid or gas;

(2) any garbage that has not been shredded to such degree that all particles shall be carried freely under the flow conditions normally prevailing in sewer mains;

(3) any ashes, cinders, sand, mud, straw, shavings, metal, glass, rags, feathers, tar, plastics, wood, fat, oil, grease, or any other solid or viscous substance capable of causing obstruction to the flow in sewer mains or other interferences with the proper operation of the sewage facilities;

(4) any water or wastes having a pH lower than 5.5 or higher than 9.0 or having any corrosive property capable of causing harm, damage or hazard to structures, equipment, personnel, or operation of the sewage facilities;

(5) any water or wastes containing a toxic or poisonous substance in sufficient quantity to injure or interfere with any sewage treatment process, constitute a hazard to humans or animals or create any hazard in the sewage treatment facilities;

(6) effluent from any industrial garbage grinder or disposal unit or any other water or wastes containing suspended solids of such character and quantity that requires unusual attention or expense for transport and treatment;

(7) mineral oils, greases or products of a petroleum origin, petroleum oils, motor oils, cutting oils, or grease trap wastes either as grease or as emulsified grease;

(8) any noxious, malodorous, or toxic liquids, gases, fumes, vapors or substances capable of creating a public nuisance or hazard to life or are sufficient to prevent District personnel from safely entering into the sewer facilities for maintenance and repair;

(9) any septic tank sludge, chemical toilet wastes, waste to which chemicals have been added for odor control or preservation, or the contents of grease traps or sand interceptors;

(10) any water or waste with a temperature greater than 150° F.

c. Pre-Treatment of Wastes

Applicant or owner shall provide necessary wastewater treatment as required to comply with this Regulation and shall achieve compliance with all federal categorical pretreatment standards within the time limitations as specified by the Federal Pretreatment Regulations. Where necessary in the opinion of the District the Applicant or Owner shall provide at his expense such pretreatment of sewage as may be necessary to:

(1) Reduce the biochemical oxygen demand to 300 parts per million and the suspended solids to 500 parts per million by weight;

(2) Reduce objectionable characteristics or constituents to within the limits specified by the District and the Regional Water Quality Control Board.

Plans, specifications and other pertinent information relating to the proposed pre-treatment facilities shall be submitted for approval to the District and to the San Francisco Bay Regional Water Quality Control Board and no construction of such facility shall be commenced until said approvals are obtained in writing. The review of such plans and operating procedures will in no way relieve the owner from the responsibility of modifying the facility as necessary to produce an effluent acceptable to the District under the provisions of this Regulation. Any subsequent changes in the pretreatment facilities or method of operation shall be reported to and be acceptable to the District prior to the owner's initiation of the changes.

d. Maintenance of Pre-Treatment Facilities

Where pre-treatment facilities are provided for any waters or wastes they shall be maintained continuously in satisfactory and effective operating condition by the owner at his expense.

e. Monitoring Facilities

The District may require to be provided and operated at the owner's expense, monitoring facilities to allow inspection, sampling, and flow measurements of the building sewer and/or internal drainage systems. The monitoring facility should normally be situated on the owner's premises.

There shall be ample room in or near such sampling manhole or facility to allow accurate sampling and preparation of samples for analysis. The facility, sampling, and measuring equipment shall be maintained at all times in a safe and proper operating condition at the expense of the owner.

f. Grease Traps and Oil and Sand Interceptors

Any type of business or establishment where grease or other objectionable materials may be discharged in unusual quantities into a public sewer system shall have a grease trap or oil and sand interceptor of a size and design to be approved by the Chief Engineer. Grease traps will be required at restaurants and other commercial and/or non-residential food preparation establishments. Oil and sand interceptors will be required at gas stations and auto repair establishments with floor drains located in service areas, auto or vehicle washing facilities, et cetera.

Oil and sand interceptors shall be situated on the owner's premises and shall be so located as to be readily and easily accessible for cleaning and inspection. Buildings remodeled for use requiring interceptors shall be subject to these regulations.

Waste discharges from fixtures and equipment in the above-mentioned types of establishments which may contain grease, oil, sand or other objectionable materials, including, but not limited to, scullery sinks, pot and pan sinks, dishwashers, food waste disposals, soup kettles, and floor drains located in areas where such objectionable materials may exist, may be drained into the sanitary waste through grease traps and oil and sand interceptors where approved by the Chief Engineer; provided, however, that toilets, urinals, washbasins and other fixtures containing fecal materials shall not flow through the grease trap or interceptor.

Grease traps and oil and sand interceptors shall be maintained by the owner in efficient operating condition by periodic removal of the accumulated grease, oil or sand. The use of chemicals to dissolve grease or oil is specifically prohibited. No such accumulated grease, oil or sand shall be introduced into any drainage piping or public or private sewer.

g. Inspection and Sampling

The District may inspect the facilities of any owner to ascertain whether the purpose of this Regulation is being met and all District requirements are being complied with. Persons or occupants of premises where wastewater is created or discharged shall allow the District or their representative ready access at all reasonable times to all parts of the premises for the purposes of inspection, sampling, records examination, records copying or in the performance of any of their duties. The District, Regional Water Quality Control Board and EPA shall have the right to set up on the owner's property such devices as are necessary to conduct sampling inspection, compliance monitoring and/or metering operations.

h. Swimming Pools

It shall be unlawful for any person to discharge contents of a swimming pool into a sanitary sewer at a rate of flow greater than 50 gallons per minute and only for the purpose of emptying the pool or backwashing the pool filter. Each swimming pool discharging to a sanitary sewer shall be equipped with an approved air gap to preclude any possibility of a backflow of sewage into the swimming pool or piping system.

i. Conservation of Water to Accomplish Flow Reduction

Each customer of the District is urged to install devices that will minimize the flow to the District's sewage facilities. Plumbing fixtures installed shall meet all requirements of state law. Replacement fixtures shall meet the requirements of Section j.(2) hereof.

j. Flow Reduction Devices and Restrictions for New Development

(1) Sewer service will not be furnished to any Applicant unless the flow reduction devices hereinafter described are installed:

(2) All interior plumbing in new buildings shall meet the following requirements:

(i) Toilets and associated flush valves shall be rated at not more than 1.0 gallon of water per flush, or be a dual flush model approved by the District.

(ii) Urinals and associated flush valves shall be rated at not more than 1.0 gallon of water per flush.

(iii) Showerheads shall have a rated flow of 2.0 gallons of water per minute or less.

(iv) Kitchen and lavatory faucets shall have aerators or laminar flow devices together with flow control inserts, valves, devices, or orifices that restrict flow to a maximum of 1.5 gallons of water per minute.

(v) Laundry facility washing machines shall be front loading / horizontal axis models with an Energy Star rating and a modified water factor of 5.5 or less.

(vi) Dishwashers shall be high efficiency models with an Energy Star rating that use

no more than 5 gallons per cycle.

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NORTH MARIN WATER DISTRICT

REGULATION 106

APPLICATION, AGREEMENT, AND FEES

a. Application for Service

Upon receipt of an application for sewer service the District will review it and prepare a written estimate and preliminary plan for providing sewer service. If the District determines, in its sole discretion, that the plans, specifications and other information submitted as part of the application are complete and satisfactory and in compliance with pertinent District regulations, and that there exists adequate downstream collection, treatment, and disposal capacity for the proposed service, including possible reuse, then the District shall issue a letter notifying the Applicant that the work necessary to provide the proposed service may proceed subject to the Applicant entering into an agreement with the District and paying all estimated engineering costs, construction costs, fees and charges required under this Regulation and Regulation 109.

b. Cost of Preliminary Engineering Work

The costs of preliminary engineering and planning associated with Section a. hereof shall be included as part of the cost of providing service except that in the event the District determines that the proposed service will be delayed or abandoned said costs shall become due and payable upon presentation of a bill for same to the Applicant. Should the District determine that the cost of preparing an estimate and accomplishing other engineering and planning work can reasonably be expected to exceed $100, the Applicant shall be required to execute and advance funds for same at the time of application.

c. Estimate is Not a Commitment to Provide Service

Preparation of an estimate or any other preliminary engineering and planning work undertaken by the District in connection with the Applicant's proposed project is not to be interpreted by the Applicant as a commitment or agreement by the District, partial or otherwise, to provide sewer service. Said commitment will be made only when the District executes a sewer service agreement. The commitment of the District to provide sewer service shall be limited to the number of connections to be installed pursuant to and in accordance with the terms of the sewer service agreement.

d. Sewer Service Agreement

After the preparation of a preliminary cost estimate and plans pursuant to Section a. hereof and at the time that the Applicant desires to secure a commitment of sewer service and proceed with construction, the District shall prepare a sewer service agreement for approval and authorization by the Board of Directors.

The Applicant's execution of a sewer service agreement and payment of all engineering and construction costs, fees and charges pursuant to these regulations shall bind the Applicant and any successors thereto to comply with all provisions of all pertinent District regulations, and with the plans and specifications and other information as part of the agreement, together with such corrections and modifications as may be required or permitted by the District.

e. Small Sewer Service Agreements

When the estimated cost of the work to be performed by the District is less than $5,000 (exclusive of charges referred to in Section g. hereof and Regulation 109), the General Manager of the District is authorized to enter into a sewer service agreement with the Applicant.

f. Inspection Fee

A fee of $300.00 shall be paid as a condition of performing a sewer inspection.

g. Charge for Annexation to Improvement Districts

No property shall be annexed to an Improvement District unless an annexation fee is paid. The annexation fee shall be equal to the total of the following:

(1) The total revenue from tax on land (not improvements) that the District would have received had the property to be annexed been within the Improvement District from the date of its formation, plus an amount equal to the interest revenue the District would have received on said tax revenue,

(2) the total revenue from the annual $10.00 per parcel sewer service availability assessment charge identified in Regulation 109 that the District would have received had the property been a buildable parcel within the current Improvement District as determined by the District plus an amount equal to the interest revenue the District would have received on said availability charge,

(3) current Local Agency Formation Commission and/or State Board of Equalization fees for annexation, and

(4) estimated cost of District staff time and expenses incurred to process the annexation application. The full cost of any annexation feasibility studies including preparation of environmental documents shall be borne by the person or entity requesting sewer service. Before commencing such studies said person or entity shall advance the District's estimated cost of such studies. If, after pursuing such studies, the District determines additional funds are needed to cover estimated costs, said person or entity shall advance said additional estimated required funds. Upon completing said studies any costs incurred by the District which were not covered by an advance(s) shall be paid by said person or entity upon presentation of an invoice therefore. Any unexpended funds held by the District resulting from an advance(s) shall be refunded to said person or entity, and

(5) the allocated portion of estimated capital costs to expand the downstream collection, treatment and disposal capacity of the sewage facility to serve the property as determined solely by the District, and

(6) the in-lieu contribution to the collection system allocated to the property proposed for annexation and based upon the present value of the portion of any assessment bond issues allocated and used to construct the existing sewage facility.

For annexations where Regulation 106 g. (5) applies, the Sewage Facility Connection Charge in accordance with Regulations 108 b. and 109 b. shall be waived.

NORTH MARIN WATER DISTRICT

REGULATION 107

ENFORCEMENT

a. Violation

Any person found to be violating any provision of these regulations shall be served by the General Manager or other authorized person with written notice stating the nature of the violation and providing a reasonable time limit for satisfactory correction thereof. The violating party shall within the period of time stated in such notice permanently cease the violation.

b. Public Nuisance

Continued habitation of any building or continued operation of any facility in violation of the provisions of these regulations is hereby declared to be a public nuisance. The District may cause proceedings to be brought for the abatement of the nuisance during the period of such violation.

c. Liability for Violation

Any person violating any of the provisions of this regulation shall become liable to and shall indemnify the District for any expense, loss or damage occasioned by the District by reason of such violation.

Costs associated with the discovery and correction of an illegal connection to the District's sewer system are the responsibility of the property owner to which the illegal connection was made. The property owner shall reimburse the District for its said costs including:

(1) all District costs to investigate the illegal connection, and

(2) all District costs as described in Regulation 106 and 109, to correct the connection including back charges for sewer service equal to the monthly service rate multiplied by the number of months the District determines the illegal connection was in use.

NORTH MARIN WATER DISTRICT

REGULATION 109

OCEANA MARIN SEWER SERVICE - RATES AND CHARGES

a. Applicability

This regulation applies to sewer service within Improvement Districts No. OM-1 and OM-3 of North Marin Water District which are herein referred to as Oceana Marin.

b. Sewage Facilities Connection Charge

A sewage facilities connection charge of $30,000 for each single-family dwelling unit shall be paid prior to the commencement of sewer service. A sewage facilities connection charge in the amount of 50% of the sewage facilities connection charge then applicable to a single-family dwelling unit shall be paid prior to the commencement of sewer service to accessory dwelling units, except to the extent specifically prohibited by Government Code 65852.2. For connection of service to structures projected to generate flows in excess of that generated by a typical single-family home in Oceana Marin, the District shall calculate the number of equivalent dwelling units and resulting connection charge. In no event shall the connection charge be less than the amounts noted above. All revenues derived by the District from said sewage facilities connection charge shall be used only for the construction and reconstruction (including, without limitation, enlargement, modification and replacement) and operation and maintenance of the sewage facilities serving said lots or for other purposes authorized by Section 5474.9 of the Health & Safety Code, but shall not be used for acquisition or construction of new local street sewer or laterals. With the exception of property annexed after April 17, 1973, said charge for single family dwelling units shall not be payable for any lot in Units 3 or 4 of Oceana Marin Subdivision heretofore or hereafter connected to said facilities by reason of the substantial payment for said facilities heretofore made by the owners of said lots.

c. Sewer Service Rate

For Fiscal Year 2025-26, a sewer service rate of $1,572 per equivalent unit per year shall be paid by the owner of the land served. Accessory dwelling units shall be assessed a sewer service rate equal to 50% of the equivalent single-family residential unit sewer service rate in effect. In the case of new construction, said rate shall commence when connection is made to the District sewage facility, or upon connection of the accessory dwelling unit sewer plumbing to the existing side sewer serving the primary single-family dwelling. Upon written notice by the owner in the event a structure is demolished by fire or otherwise removed from the land, an appropriate adjustment shall be made taking into account the reduced use but excluding any adjustment for infiltration inflow. An appropriate portion of the charges collected during the period that no structure existed shall be refunded. The refund period, however, shall not be greater than one year and shall be measured from the date that the District receives written notice from the owner.

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Appendix C

Element 4 (Operations and Maintenance Program) Supporting Documents

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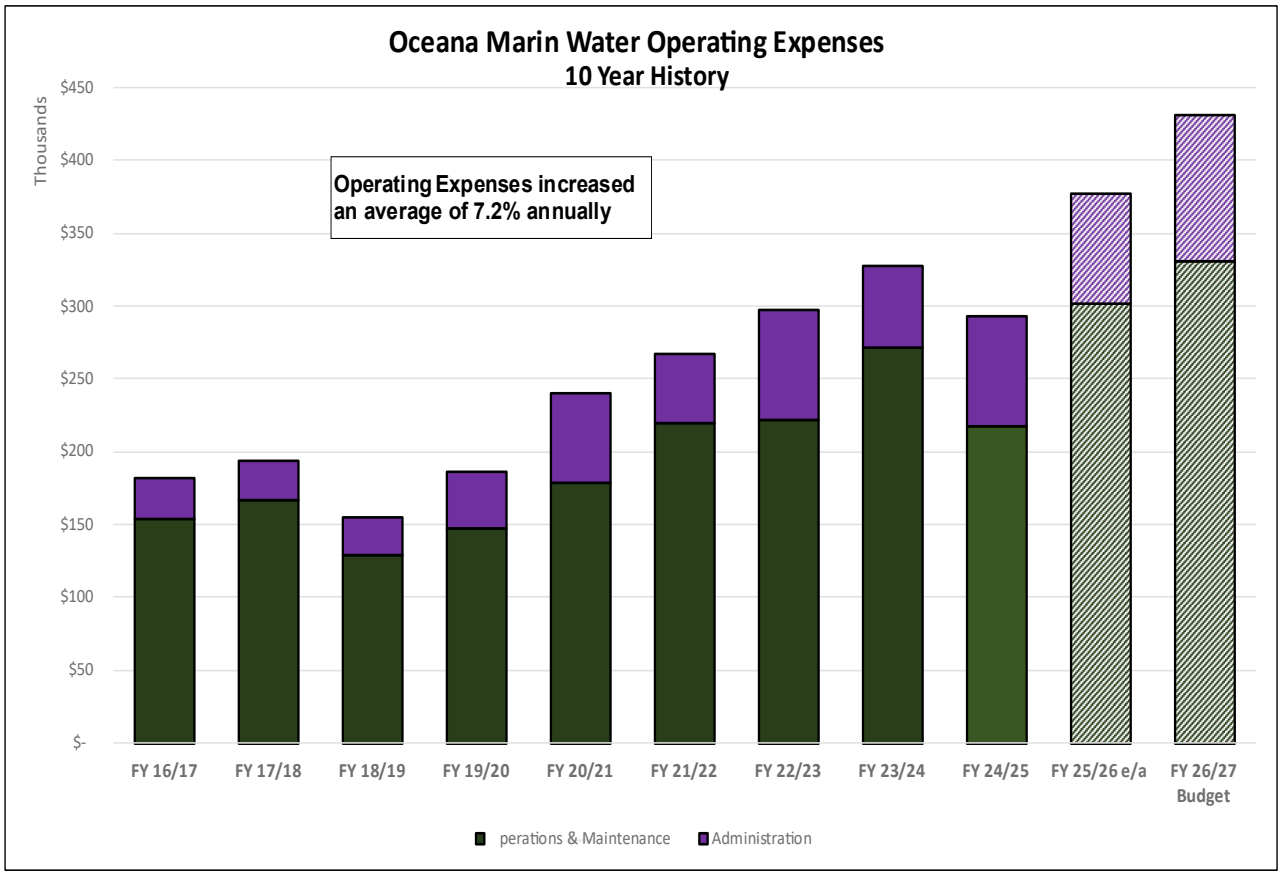
Oceana Marin Sewer

A 9.7% rate increase (to $1,724/year) in the Oceana Marin (OM) Sewer Service Charge effective July 1, 2026, will generate $37,000 in additional annual revenue. The increase will be reviewed by the Board of Directors at a public hearing which will occur on June 16, 2026. The budget projects a new connection every other year, with one new connection budgeted in FY 26/27.

FY 26/27 OM operating expenditures are budgeted at $431,000 which is an increase of $54,000 or 14% from the FY 25/26 projections. The increase is primarily due to $50,000 budgeted in FY 26/27 to facilitate an update to the Master Plan, which was budgeted in FY 25/26 but not yet intiated. This update will reassess the assumptions and projections within the current plan to ensure their alignment with the changing and aging infrastructure needs of the Oceana Marin Sewer System. The budget projects a net operating loss of $14,000 and, after capital outlay and debt service, the system is projected to show a cash decrease for the year of $84,000.

The below chart shows the past 10-years of operating expense for Oceana Marin Sewer.



Oceana Marin Sewer

Budget Summary
Fiscal Year 26/27

		Proposed Budget FY 26/27	*Estimated Actual FY 25/26*	*Adopted Budget FY 25/26*
	Operating Revenue			
1	Sewer Service Charges	**$417,000**	$380,000	$377,000
	Operating Expenditures			
2	Sewage Collection	**$151,000**	$124,000	$146,000
3	Sewage Treatment	**84,000**	79,000	129,000
4	Sewage Disposal	**93,000**	95,000	61,000
5	Consumer Accounting	**3,000**	4,000	4,000
6	General Administration	**100,000**	75,000	90,000
7	**Total Operating Expenditures**	**$431,000**	$377,000	$430,000
8	***Net Operating Revenue***	**($14,000)**	$3,000	($53,000)
	Non-Operating Revenue/(Expenditures)			
9	Interest Earnings	**$ 5,000**	$3,000	$5,000
10	Miscellaneous Revenue	**1,000**	1,000	1,000
11	**Total Non-Op Revenue/(Expenditures)**	**$6,000**	$4,000	$6,000
	Other Sources/(Uses) Of Funds			
12	Capital Improvement Projects	**($65,000)**	($55,000)	($50,000)
15	Debt Principal Payments	**(32,000)**	(31,000)	(35,000)
16	Interest Expense	**(9,000)**	(10,000)	(12,000)
17	Sewage Facilities Connection Charges	**30,000**	-	-
18	**Total Other Sources/(Uses)**	**($76,000)**	($96,000)	($97,000)
19	***Cash Increase/(Decrease)***	**($84,000)**	($89,000)	($144,000)

Oceana Marin Sewer

Five-Year Financial Forecast

Fiscal Year 26/27

		Budget FY 26/27	*Forecast FY 27/28*	*Forecast FY 28/29*	*Forecast FY 29/30*	*Forecast FY 30/31*
1	**Sewer Rate Increase**	**9.70%**	**9.70%**	**9.70%**	**9.70%**	**9.70%**
	Operating Revenue					
2	**Number of Connections**	242	242	243	243	244
3	Annual Sewer Service Charge	$1,724	$1,891	$2,074	$2,275	$2,496
4	**Operating Revenue Sewer Service Charges**	$417,000	$458,000	$504,000	$553,000	$609,000
	Operating Expenditures					
5	Sewage Collection	$151,000	$156,000	$161,000	$166,000	$171,000
6	Sewage Treatment	84,000	87,000	90,000	93,000	96,000
7	Sewage Disposal	93,000	96,000	99,000	102,000	105,000
8	Consumer Accounting	3,000	3,000	3,000	4,000	4,000
9	General Administration	100,000	75,000	77,000	79,000	81,000
10	**Total Operating Expenditures**	**$431,000**	**$417,000**	**$430,000**	**$444,000**	**$457,000**
11	***Net Operating Revenue***	**($14,000)**	**$41,000**	**$74,000**	**$109,000**	**$152,000**
	Non-Operating Revenue/(Expenditures)					
12	Interest Earnings	$5,000	$1,000	$4,000	$4,000	$3,000
13	Miscellaneous Revenue/Expense	1,000	1,000	1,000	1,000	1,000
14	**Total Non-Operating Revenue/Expenditures**	**$6,000**	**$2,000**	**$5,000**	**$5,000**	**$4,000**
	Other Sources/(Uses) Of Funds					
15	Total Capital Spending	($65,000)	($50,000)	($25,000)	($75,000)	($140,000)
16	Loan from Novato Water	-	200,000	-	-	-
17	**Cash Funded Capital Projects**	($65,000)	$150,000	($25,000)	($75,000)	($140,000)
18	Debt Service	($41,000)	($64,000)	($64,000)	($64,000)	($64,000)
19	Sewage Facilities Connection Charges	30,000	-	30,000	-	30,000
20	**Total Other Sources/(Uses)**	**($76,000)**	**$86,000**	**($59,000)**	**($139,000)**	**($174,000)**
21	**Beginning Cash Reserve Balance**	**$131,000**	**$47,000**	**$176,000**	**$196,000**	**$171,000**
22	**Cash Increase/(Decrease)**	**($84,000)**	**$129,000**	**$20,000**	**($25,000)**	**($18,000)**
23	**Ending Cash Reserve Balance**	**$47,000**	**$176,000**	**$196,000**	**$171,000**	**$153,000**

North Marin Water District
Capital Improvement Program (CIP)
Fiscal Year 26/27 Budget & FY 27/28-FY 30/31 Forecast

ID		Project	Budget FY 26/27	Forecast FY 27/28	Forecast FY 28/29	Forecast FY 29/30	Forecast FY 30/31
		4. MISCELLANEOUS IMPROVEMENTS (NOVATO)					
4a		District Offices					
	1	Construction Bldg Access Improvements	$ 100,000	$ -	$ -	$ -	$ -
	2	Construction Yard Improvements - Pipe Racks	25,000	-	-	-	-
4b		System Pressure / Valving					
	1	Gateway Commons - Backflow Prevention	$ 30,000	$ 500,000	$ 500,000	$ 500,000	$ -
	2	Landing Way (PET) Regulators	15,000	-	-	-	-
	3	655 Canyon Road Fire Service Replacement	40,000	-	-	-	-
4c		Miscellaneous Projects					
			$ -	$ -	$ -	$ -	$ -
4d		Miscellaneous Contingency					
	1	Other System Improvements	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000
		Subtotal	$ 260,000	$ 550,000	$ 550,000	$ 550,000	$ 50,000
		5. RECYCLED WATER SYSTEM (NOVATO)					
5a		RW Pipelines					
	1	Replace Cast Iron in Atherton Ave. (1,320 LF)	$ 75,000	$ 475,000	$ -	$ -	$ -
5b		RW Contingency					
	1	Other Recycled Water Improvements	$ 25,000	$ 25,000	$ 100,000	$ 100,000	$ 100,000
		Subtotal	$ 100,000	$ 500,000	$ 100,000	$ 100,000	$ 100,000
		6. WEST MARIN SYSTEM					
6a		WM Pipelines					
	1	Lagunitas Creek Bridge Pipe Replacement (Caltrans)	$ 750,000	$ -	$ -	$ -	$ -
	2	Olema Creek Bridge Pipe Replacement (County)	25,000	75,000	600,000	600,000	-
	3	St Rt 1 Caltrans Pipe Relocation	5,000	30,000	-	-	-
	4	New Sample Stations x3 (PR)	30,000	-	-	-	-
	5	Replace 2-inch Galvanized Pipe - 4 Locations	75,000	-	-	-	-
6b		WM Tanks & Pump Stations					
	1	Olema Tank COM Improvements	$ 25,000	$ -	$ -	$ -	$ -
	2	Tank Replacement - PRE #1 & #2	-	-	100,000	650,000	-
	3	Tank Replacement - Pt. Reyes #1	-	-	-	100,000	650,000
6c		WM Wells					
	1	Gallagher Well No. 3	$ 250,000	$ 1,250,000	$ -	$ -	$ -
6d		WM Treatment Plant					
	1	PR Treatment Plant - Interim Rehabilitation	$ -	$ -	$ 500,000	$ 100,000	$ 100,000
	2	PR Treatment Plant - Major Modifications, Future Project	-	25,000	50,000	75,000	2,000,000
6e		WM Contingency					
	1	Sync w/ County Paving	$ 25,000	$ 25,000	$ 25,000	$ 25,000	$ 25,000
	2	Other Water System Improvements	50,000	75,000	75,000	75,000	75,000
		Subtotal	$ 1,235,000	$ 1,480,000	$ 1,350,000	$ 1,625,000	$ 2,850,000
		7. OCEANA MARIN					
7a		OM Pipelines					
	1	Sewer Force Main Improvements - FM 1A (Design Only)	$ 10,000	$ -	$ -	$ -	$ -
	2	Sewer Force Main Improvements - FM 1B (Design Only)	-	-	-	50,000	75,000
7b		OM Lift Station					
	1	Tahiti Pump Replacement	$ 10,000	$ -	$ -	$ -	$ 40,000
	2	Electric Service Improvements	40,000	-	-	-	-
	3	FM Wet Well Bypass	-	25,000	-	-	-
7c		OM Treatment Ponds					
			$ -	$ -	$ -	$ -	$ -
7d		OM Contingency					
	1	Other Sewer System Improvements	$ 5,000	$ 25,000	$ 25,000	$ 25,000	$ 25,000
		Subtotal	$ 65,000	$ 50,000	$ 25,000	$ 75,000	$ 140,000

NORTH MARIN WATER DISTRICT
PROJECT SUMMARY SHEET

CAPITAL IMPROVEMENT PROGRAM	FY 26/27	OCEANA MARIN

Project Name: Sewer Force Main Improvements - FM 1A (Design Only)
Project No.: 8.7208.01

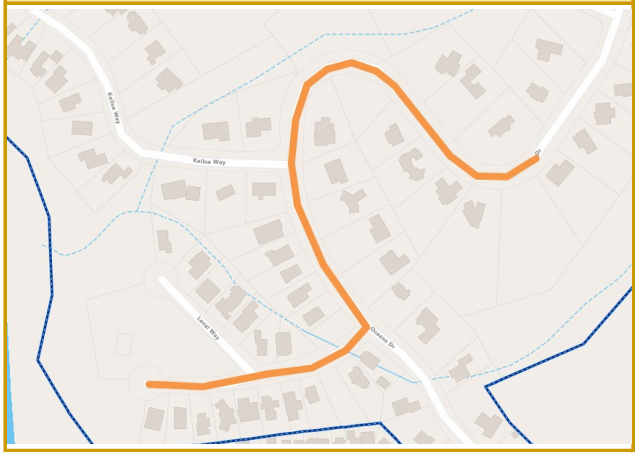
Project Lead: Tim Fuette
Department: Engineering
CIP ID: 7a1

Project Drivers	
Capacity	Performance
Asset Management	**Resiliency**

Schedule	
Project Start	FY 22/23
Est. Completion	FY 26/27

Alignment: Strategic Plan ☑
Master Plan ☑

Project Description
Design phase for replacement of approx. 4,610 feet of 6-inch force main, starting at the District's Tahiti Lift Station. Following design, seek grant funding using the "shovel ready" project to increase chances of securing funds.

Map / Photo


Project Budget

Phase	Life to Date thru FY 25/26	Fiscal Year 26/27 to Date	Fiscal Year 26/27 Budget	Forecast FY 27/28	Forecast FY 28/29	Total Estimate
Planning	$ 10,000	$ -	$ -	$ -	$ -	$ 10,000
Environmental	$ -	$ -	$ -	$ -	$ -	$ -
Design	$ 60,000	$ -	$ 10,000	$ -	$ -	$ 70,000
Construction	$ -	$ -	$ -	$ -	$ -	$ -
Const. Mgmt.	$ -	$ -	$ -	$ -	$ -	$ -
Closeout	$ -	$ -	$ -	$ -	$ -	$ -
Contingency	$ -	$ -	$ -	$ -	$ -	$ -
Total	$ 70,000	$ -	$ 10,000	$ -	$ -	$ 80,000

NORTH MARIN WATER DISTRICT
PROJECT SUMMARY SHEET

CAPITAL IMPROVEMENT PROGRAM	FY 26/27	OCEANA MARIN

Project Name: Tahiti Pump Repl
Project No.: To Be Assigned

Project Lead: Tim Kennedy
Department: Operations
CIP ID: 7b1

Project Drivers	
Capacity	Performance
Asset Management	Resiliency

Schedule	
Project Start	FY 26/27
Est. Completion	FY 26/27

Alignment: Strategic Plan ☐
Master Plan ☐

Project Description
District crews to replace one of the pumps and motors at the Tahiti Lift Station.

Map / Photo

Project Budget

Phase	Life to Date thru FY 25/26	Fiscal Year 26/27 to Date	Fiscal Year 26/27 Budget	Forecast FY 27/28	Forecast FY 28/29	Total Estimate
Planning	$ -	$ -	$ -	$ -	$ -	$ -
Environmental	$ -	$ -	$ -	$ -	$ -	$ -
Design	$ -	$ -	$ -	$ -	$ -	$ -
Construction	$ -	$ -	$ 10,000	$ -	$ -	$ 10,000
Const. Mgmt.	$ -	$ -	$ -	$ -	$ -	$ -
Closeout	$ -	$ -	$ -	$ -	$ -	$ -
Contingency	$ -	$ -	$ -	$ -	$ -	$ -
Total	$ -	$ -	$ 10,000	$ -	$ -	$ 10,000

NORTH MARIN WATER DISTRICT
PROJECT SUMMARY SHEET

CAPITAL IMPROVEMENT PROGRAM	FY 26/27	OCEANA MARIN

Project Name: Electric Service Improvements
Project No.: To Be Assiged

Project Lead: Tim Kennedy
Department: Operations
CIP ID: 7b2

Project Drivers	
Capacity	Performance
Asset Management	**Resiliency**

Schedule	
Project Start	FY 26/27
Est. Completion	FY 26/27

Alignment: Strategic Plan ☑
Master Plan ☑

Project Description

Work with PG&E to replace the corroded meter and main breaker enclosure. Other incidental improvements to the service enclosure.

Map / Photo

Project Budget

Phase	Life to Date thru FY 25/26	Fiscal Year 26/27 to Date	Fiscal Year 26/27 Budget	Forecast FY 27/28	Forecast FY 28/29	Total Estimate
Planning	$ -	$ -	$ -	$ -	$ -	$ -
Environmental	$ -	$ -	$ -	$ -	$ -	$ -
Design	$ -	$ -	$ -	$ -	$ -	$ -
Construction	$ -	$ -	$ 40,000	$ -	$ -	$ 40,000
Const. Mgmt.	$ -	$ -	$ -	$ -	$ -	$ -
Closeout	$ -	$ -	$ -	$ -	$ -	$ -
Contingency	$ -	$ -	$ -	$ -	$ -	$ -
Total	$ -	$ -	$ 40,000	$ -	$ -	$ 40,000

North Marin Water District
Oceana Marin
Spill Reponse Equipment List

The District works with Roy's Sewer Service or an alternative Contract Operator to provide sufficient equipment for spill response. District staff have access to Roy's Sewer Service 24/7 if required. Equipment available from the District includes the following:

- Pumps including electric sewer sump pump
- 2-inch hose – hard hose comes out of manhole; lay-flat hose in 50' sections to transfer to downstream manhole
- Generator and power cord
- Pig bags for absorbing liquid to become sand bags
- 6-inch repair clamps and pipe
- Inflatable sewer plug
- Tyvec suits
- Nitrile gloves

Additional equipment to be provided by Contractor Operator may include:

- Combination Vacuum and Hydrojet truck
- Push cameras
- Hand-held GPS unit
- Trash pump and hoses
- Vacuum trailer
- Disposable cameras
- Spill berm & Spill mat
- Spill Shark (water based spill absorbent)
- 6-inch and 2-inch pumps

In addition, the Main Lift Station has a stationary stand-by generator that automatically starts with a power outage.

Appendix D

Element 5 (Design and Performance Provisions) Supporting Documents

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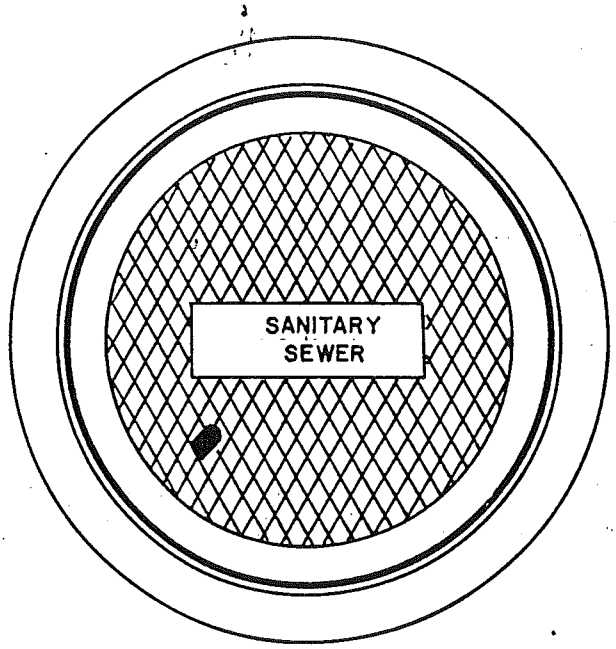
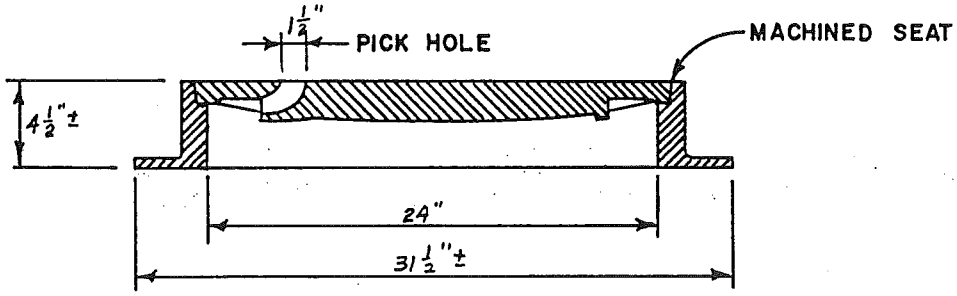
NORTH MARIN WATER DISTRICT

STANDARD DRAWINGS

SEWER





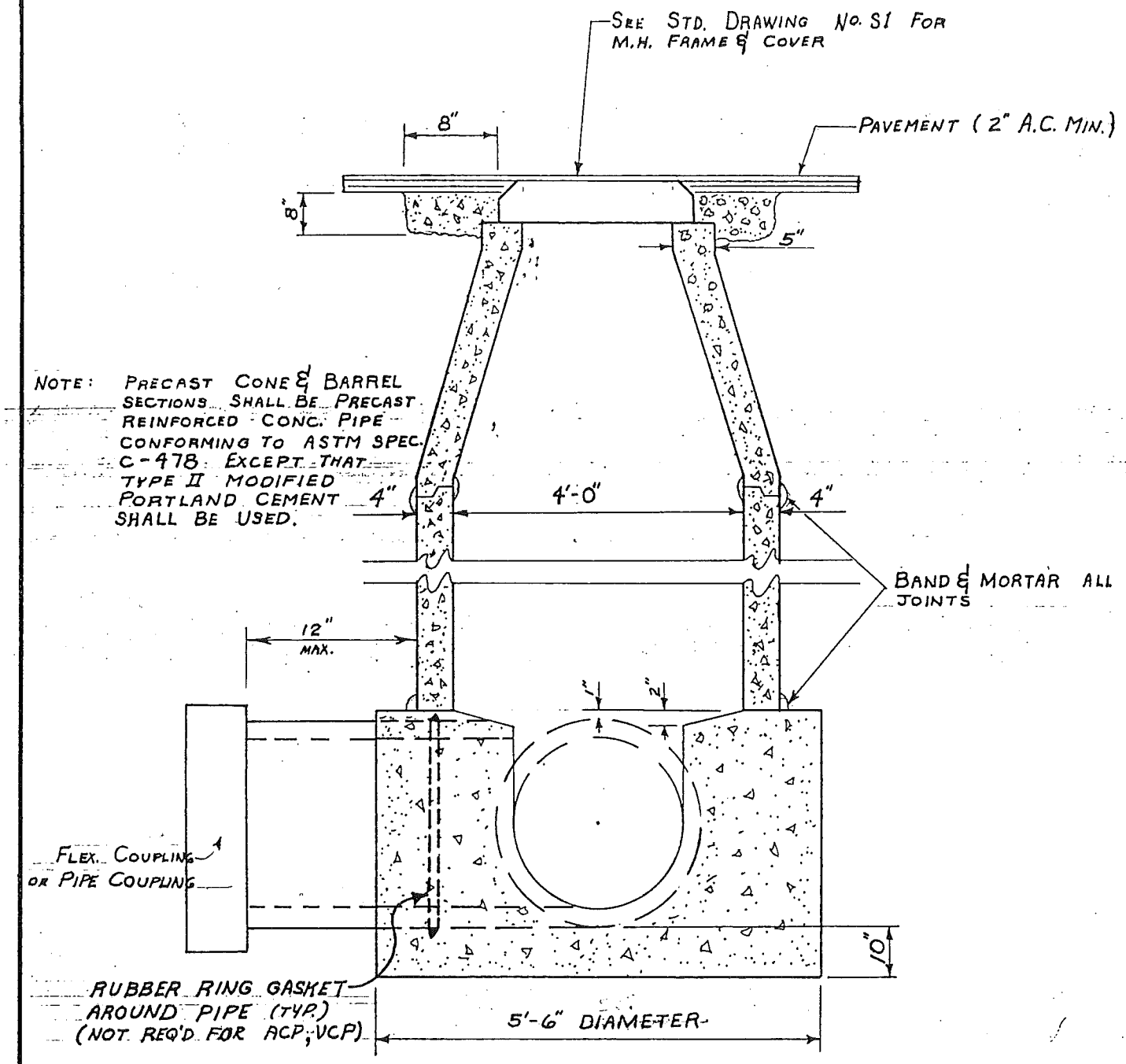
COVER – 130#
FRAME – 138#
TOTAL 268#

NOTE: CASTINGS SHALL BE DIPPED IN ASPHALT PAINT

MANHOLE FRAME and COVER — PHOENIX P-1090
— NEENAH R-1792-FL
— OR EQUAL

NORTH MARIN COUNTY WATER DISTRICT NOVATO, CALIFORNIA	STANDARD MANHOLE FRAME and COVER	DES	DR	CH	REC
			RDG		
		APPROVED:			
		RE 11595			

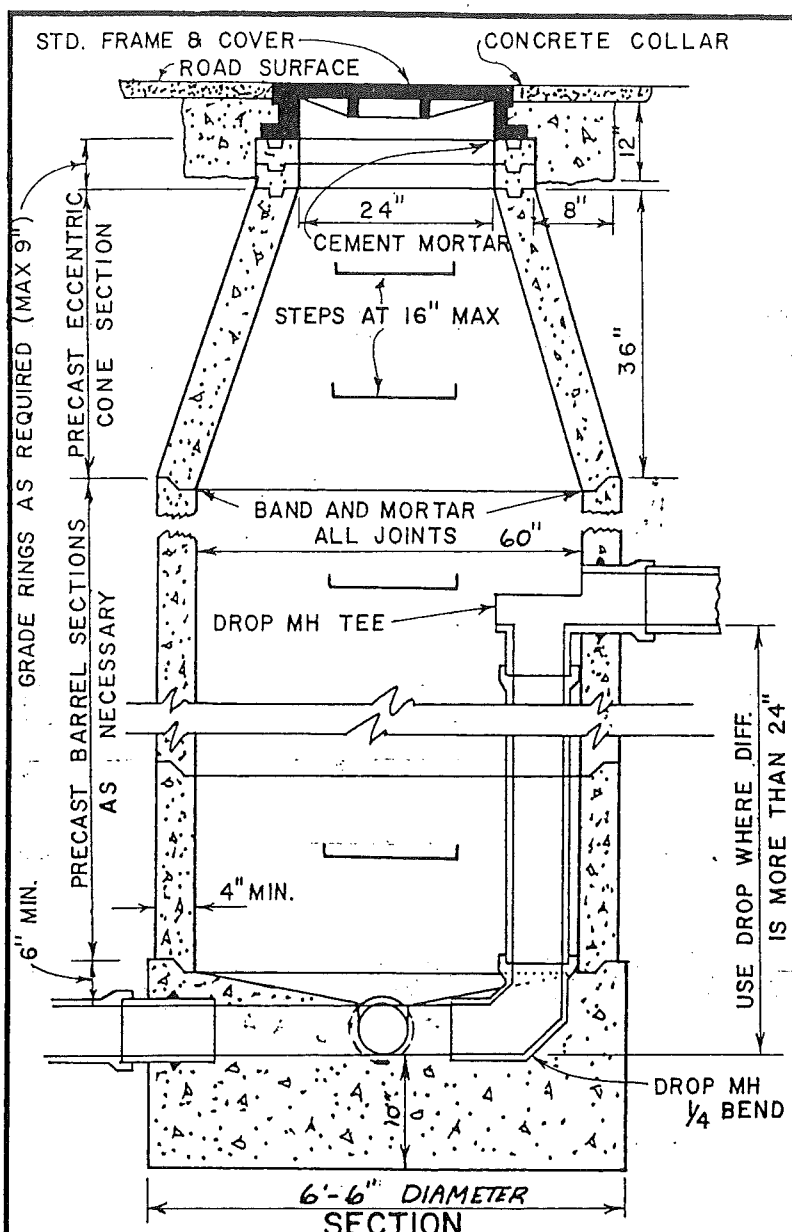
SCALE NONE
DATE APRIL 29, 1976
SHEET NO. OF SHEETS
NO. A-S1



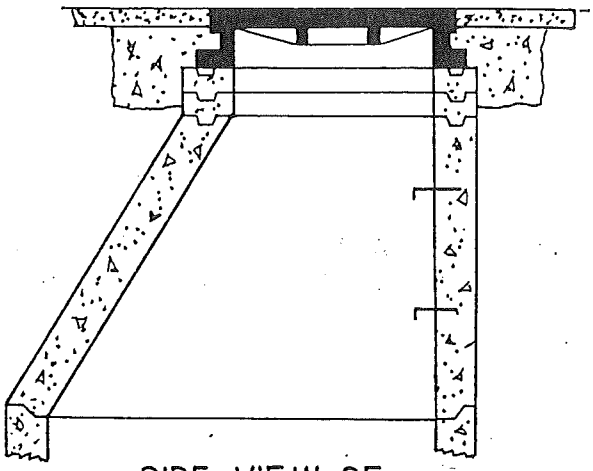
NOTES:

1. ALL CONCRETE SHALL BE CLASS "A" (6 SACK MIX)
2. CONCRETE BASE SHALL BE PLACED AGAINST UNDISTURBED EARTH
3. NO CONCRETE SHALL BE PLACED PRIOR TO FORM INSPECTION BY THE ENGINEER
4. MANHOLE FRAME MAY BE AJUSTED EITHER BEFORE OR AFTER PAVING, BUT FINAL GRADE MUST CONFORM TO THE FINISHED GRADE OF THE PAVING WITHIN 1/8"

NORTH MARIN COUNTY WATER DISTRICT NOVATO, CALIFORNIA	STANDARD MANHOLE FOR CONDUIT UP THRU 33" DIA. (Rev. 7/13/72)	DES	DR	CH	REC	SCALE NONE
			R.D.G.			DATE APRIL 19, 1971
		APPROVED:				SHEET NO. OF SHEET
						NO. A — S2

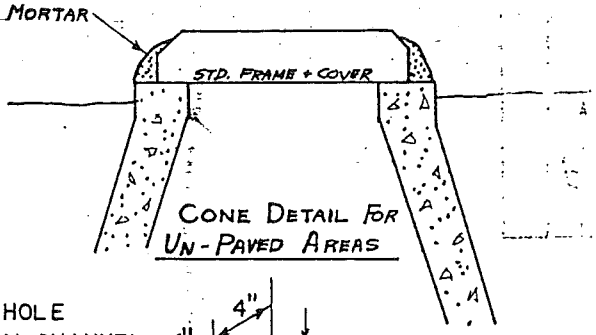


SECTION

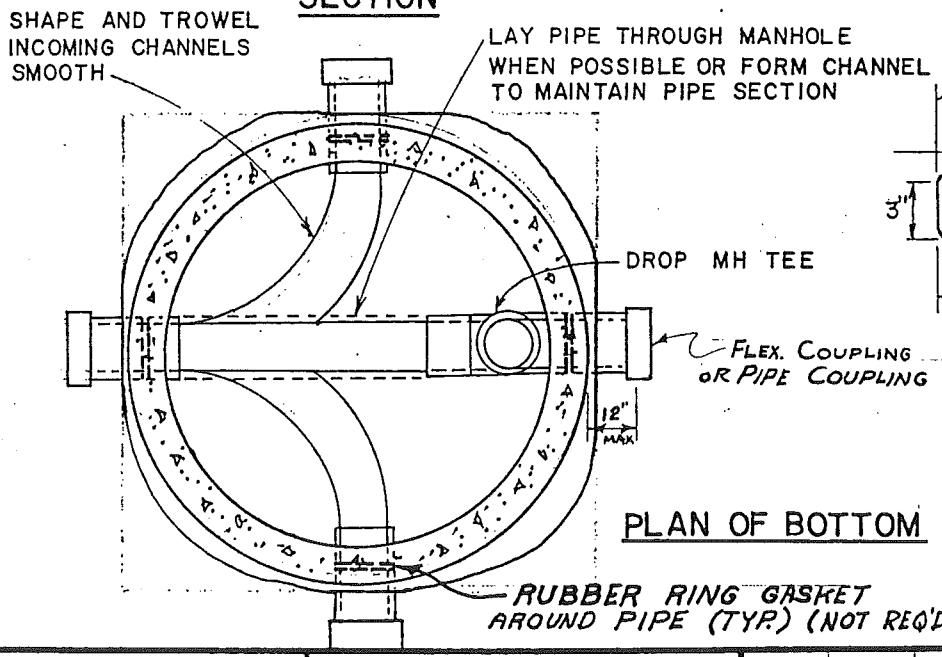


SIDE VIEW OF TOP CONE

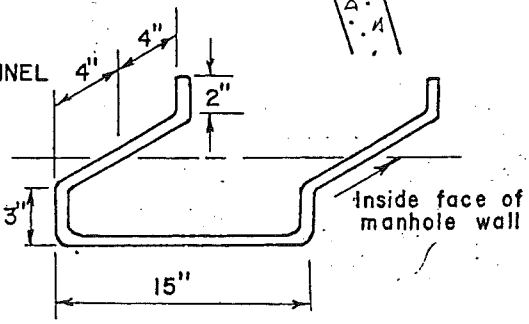
SEE NOTES ON A-S5



CONE DETAIL FOR UN-PAVED AREAS



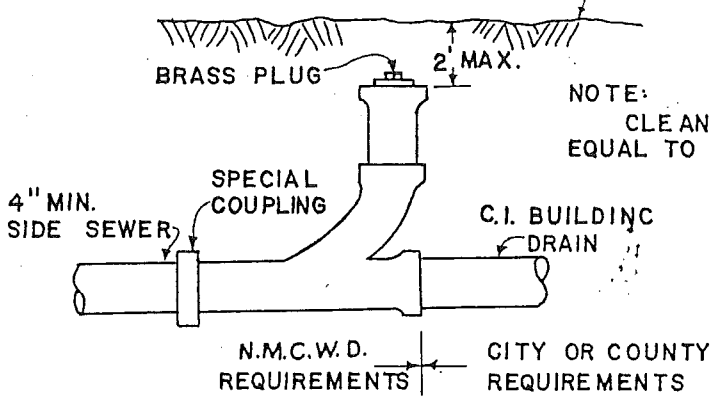
PLAN OF BOTTOM



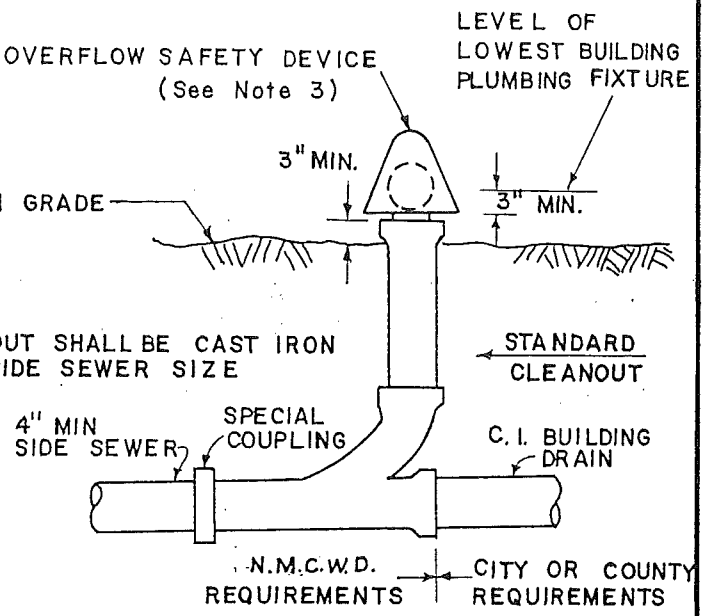
STEP DETAIL

NORTH MARIN COUNTY WATER DISTRICT NOVATO, CALIFORNIA	STANDARD SEWER MANHOLE WITH DROP (Rev. 7/13/72)	DES	DR	CH	REC	SCALE NONE
			R.D.G.			DATE APRIL 19, 1971
		APPROVED:				SHEET NO. OF SHEETS
						NO. A — S3

CLEANOUTS LOCATED UNDER PAVED DRIVEWAYS, WALKWAYS, ETC. SHALL BE RAISED TO GRADE AND INSTALLED IN YARD BOXES AS DIRECTED BY THE DISTRICT ENGINEER.



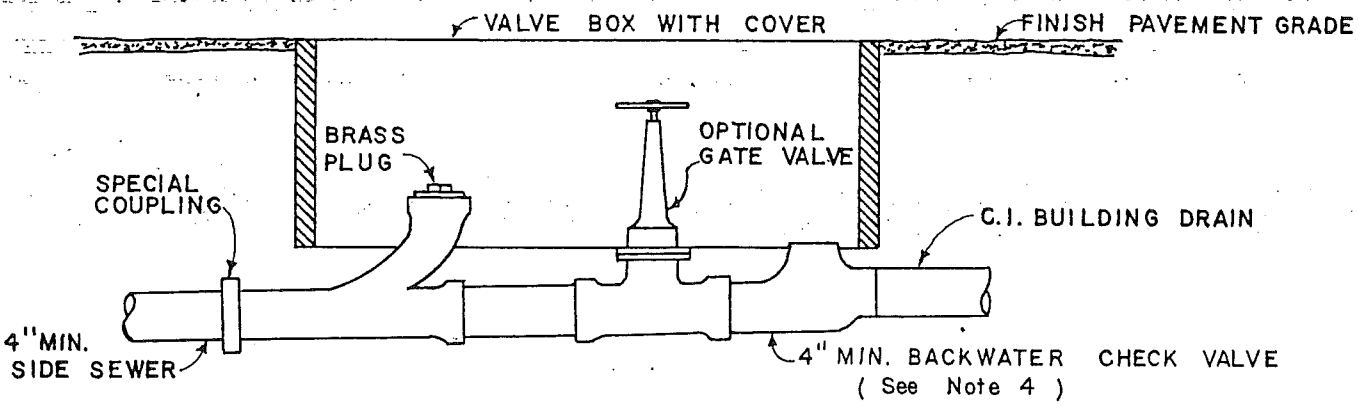
STANDARD CLEANOUT



NOTE:
CLEANOUT SHALL BE CAST IRON EQUAL TO SIDE SEWER SIZE

STANDARD CLEANOUT

TYPE A BACKWATER PREVENTION DEVICE



TYPE B BACKWATER PREVENTION DEVICE

SEE NOTES ON No. A-S5

NORTH MARIN COUNTY WATER DISTRICT NOVATO, CALIFORNIA	STANDARD CLEANOUT and BACKWATER PREVENTION DEVICES	DES	DR	CH	REC	SCALE NONE
			R.D.G.			DATE APRIL 19, 1971
		APPROVED				SHEET NO. OF SHEETS
						NO. A-S4

NOTES FOR STANDARD SEWER MANHOLE

1) Manhole base shall be Class A (6-sack) concrete and shall be poured against undisturbed soil.

2) Precast concrete cone, barrel and grade rings shall conform to A.S.T.M. Spec. C-478, except that Type II Modified portland cement shall be used.

3) Steps shall be 3/4" steel rod, galvanized after fabrication.

4) Frame and cover may be adjusted to grade either before or after paving, but final grade shall conform to adjacent finish pavement grade within 1/3".

5) Eccentric cone section shall be positioned as directed by the District Engineer.

6) Where frame and cover is set after paving, the concrete collar shall be brought to finish grade and the exposed concrete surface shall be colored with SS-1 paving oil before the concrete has set.

7) A concrete collar need not be installed where the manhole is outside the paved street surface or in an easement.

NOTES FOR STANDARD CLEANOUT AND BACKWATER PREVENTION DEVICES

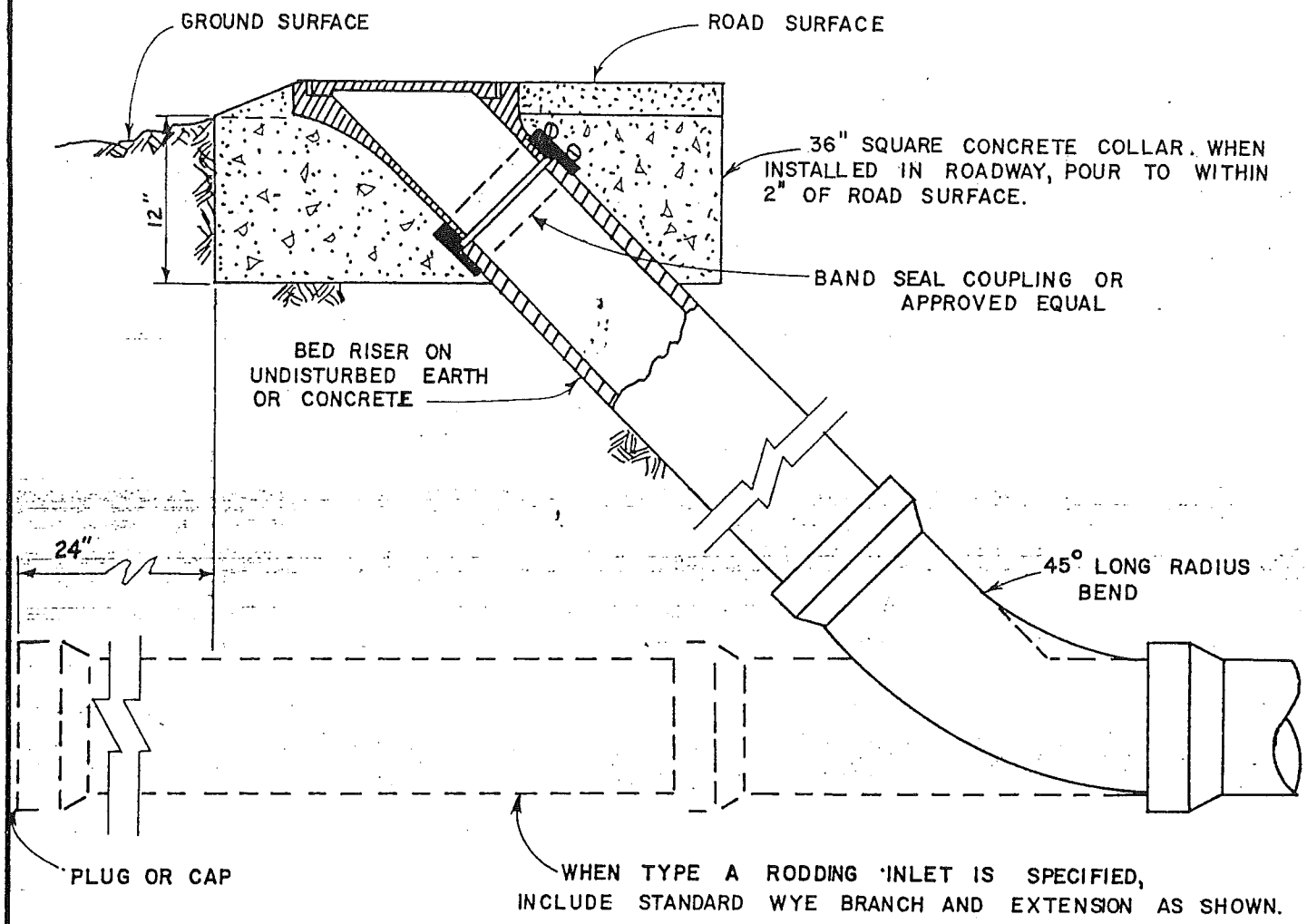
1. "A" Standard 4" Cleanout is the minimum District requirement.

2. "B" Backwater Prevention Device is required and shall be installed where the side sewer serves plumbing fixtures that are located below the rim elevation of the upstream manhole or rodhole in the reach of main sewer into which the side sewer connections.

3. A Type A Backwater Prevention Device shall be installed in those locations where sewage can overflow on the surrounding area without damage to property. The overflow safety device shall be as manufactured by Ream Machine Shop, 3297 Mount Diablo Blvd., Lafayette, California, or approved equal.

4. A Type B Backwater Prevention Device shall be installed in those locations where the cleanout must be located within a paved area or where, because of potential damage to adjacent property, an overflow device cannot be used. The gate valve is optional but should be installed for additional protection. The backwater check valve shall be Josam Series No. 1170, or approved equal.

NORTH MARIN COUNTY WATER DISTRICT NOVATO, CALIFORNIA	NOTES	DES	DR	CH	REC	SCALE NONE
			R.D.G.			DATE APRIL 19, 1971
		APPROVED:				SHEET NO. OF SHEETS
						NO. A— S5

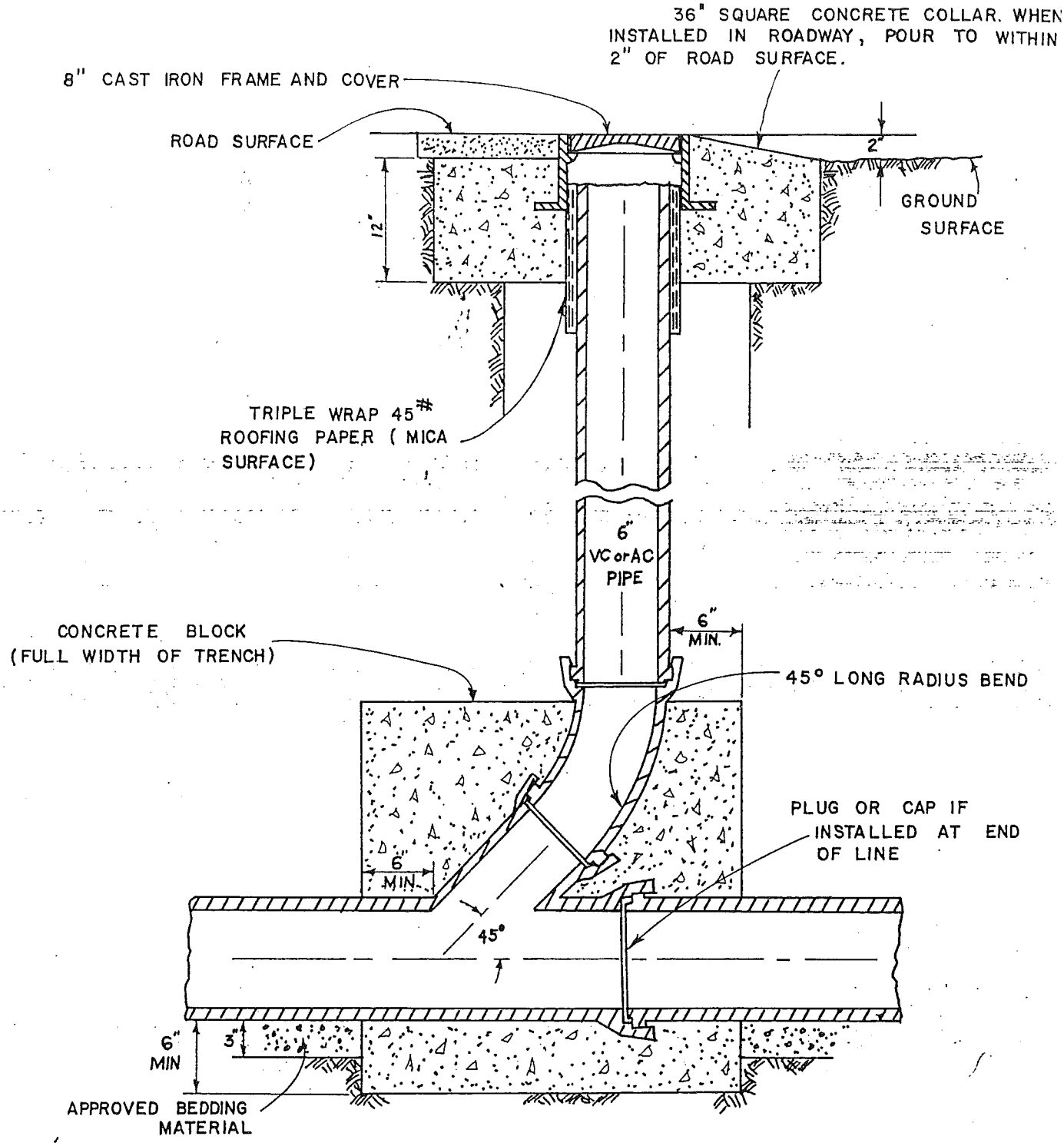


Notes:

1) *Frame and cover shall be PHOENIX P-7103 or equal.*
2) *Concrete shall be Class A (6-sack mix).*
3) *Backfill shall not be placed until installation has been inspected and approved.*
4) *Frame and cover may be adjusted to grade either before or after paving, but final grade shall conform to adjacent finished pavement grade within 1/8".*
5) *Type A Rodding Inlet shall be installed when shown on plans or as required by the District Engineer.*

NORTH MARIN COUNTY WATER DISTRICT NOVATO, CALIFORNIA	STANDARD 6 INCH RODDING INLET	DES	DR	CH	REC
			R.D.G.		
		APPROVED			

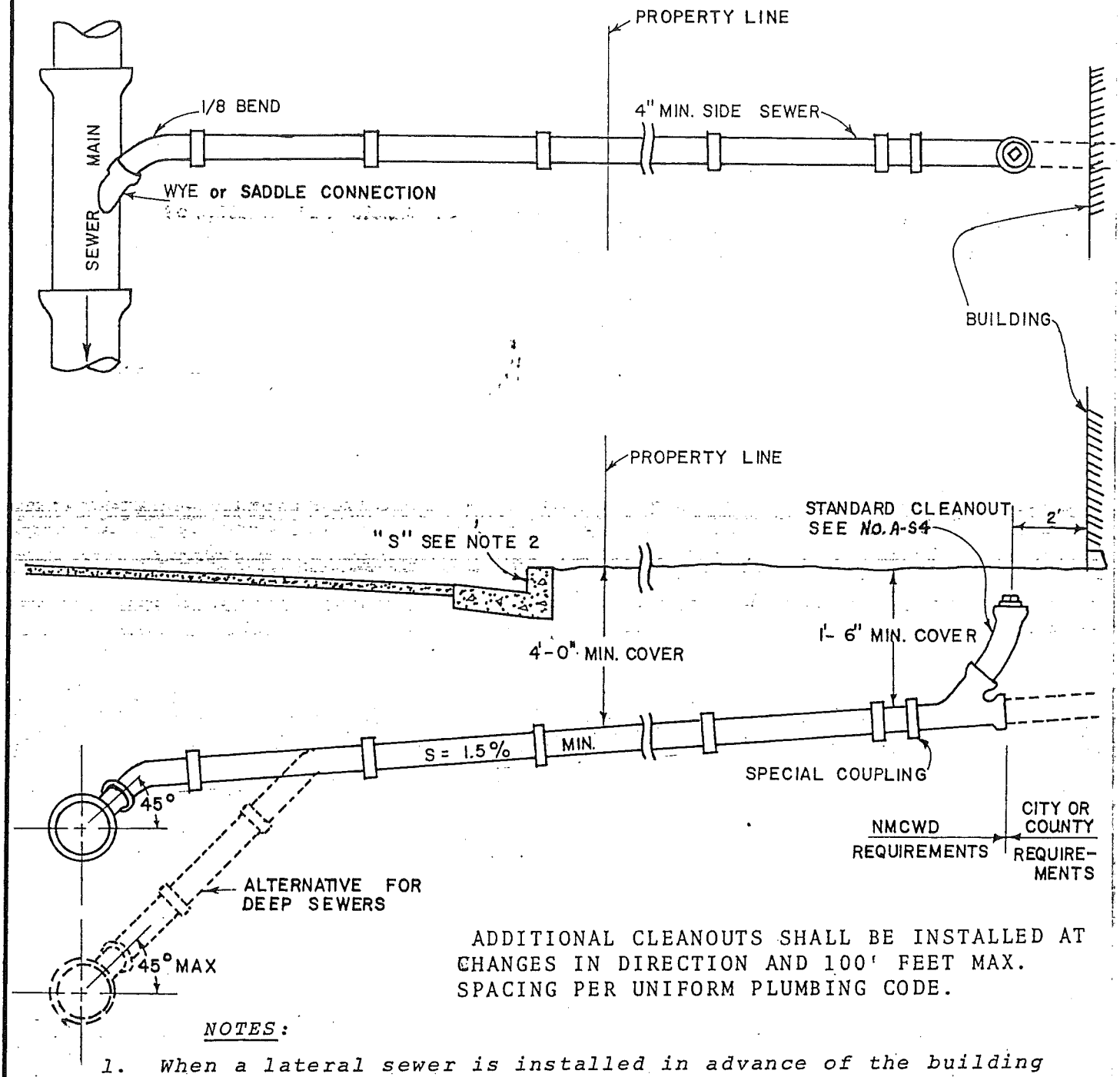
SCALE NONE
DATE APRIL 19, 1971
SHEET NO. OF SHEETS
NO. A-S6



NOTES:

1) *Frame and cover shall be Ajax No. 258 or approved equal.*
2) *Concrete shall be Class A (6-sack mix).*
3) *Backfill shall not be placed until pipe installation has been inspected and approved.*
4) *Frame and cover may be adjusted to grade either before or after paving, but final grade shall conform to adjacent finished pavement grade within 1/8".*

NORTH MARIN COUNTY WATER DISTRICT NOVATO, CALIFORNIA	STANDARD 6 INCH FLUSHING INLET	DES	DR	CH	REC	SCALE NONE
			R.DG			DATE APRIL 19, 1971
		APPROVED				SHEET NO. OF SHEET
						NO. A-S7



ADDITIONAL CLEANOUTS SHALL BE INSTALLED AT CHANGES IN DIRECTION AND 100' FEET MAX. SPACING PER UNIFORM PLUMBING CODE.

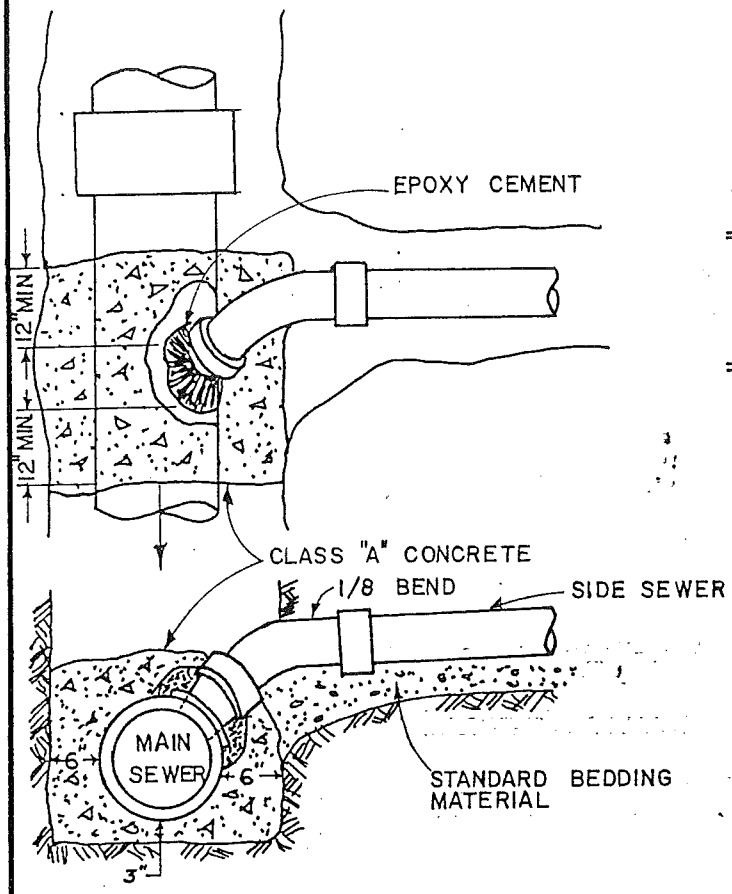
NOTES:

1. *When a lateral sewer is installed in advance of the building sewer, it shall be terminated at or near the property line. The end of the lateral shall be marked with a 2"x2" redwood stake from the top of pipe to a point 6" above the finished ground surface.*

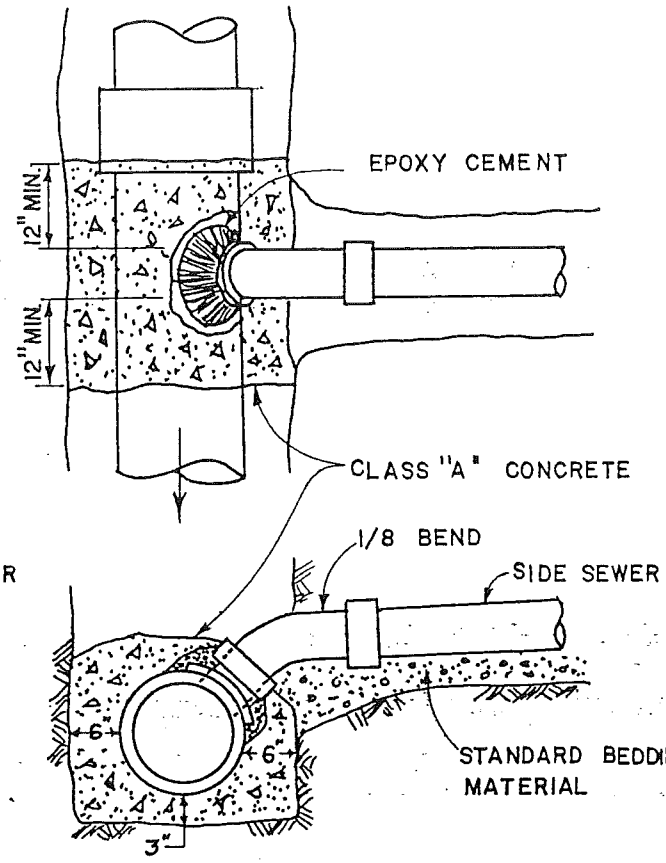
2. *Where concrete curbs and gutters exist or are to be part of an improvement, each side sewer shall be permanently located by imprinting or chiseling an "S" (3" size) in the face of the curb vertically above the sewer pipe.*

3. *Backfill shall not be placed until pipe installation has been inspected and approved.*

NORTH MARIN COUNTY WATER DISTRICT NOVATO, CALIFORNIA	TYPICAL SIDE SEWER DETAILS	DES	DR	CH	REC	SCALE NONE
			R.D.G.			DATE APRIL 19, 1971
		APPROVED:				SHEET NO. OF SHEETS
						NO. A-S8



COLLAR WYE SADDLE



COLLAR TEE SADDLE

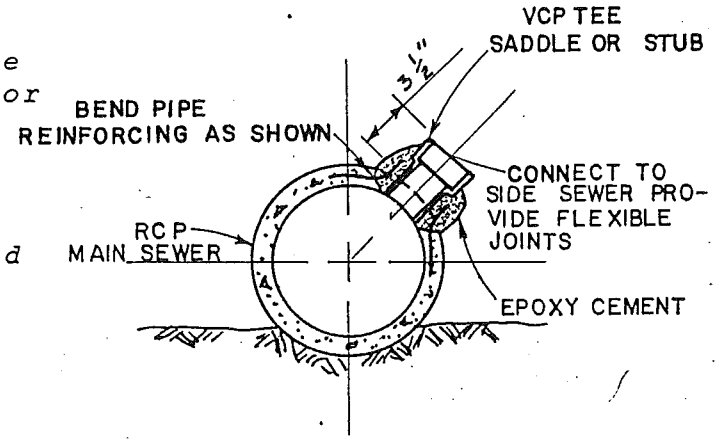
NOTES:

1. *The epoxy cement, used shall be Johns-Manville "Joint Master" or approved equivalent.*

2. *No pipe shall be connected to the saddle fitting until the installation has been inspected and approved by the District inspector.*

3. *When side and main sewers are equal in diameter, a standard wye branch (same type as main sewer) shall be installed in the main sewer.*

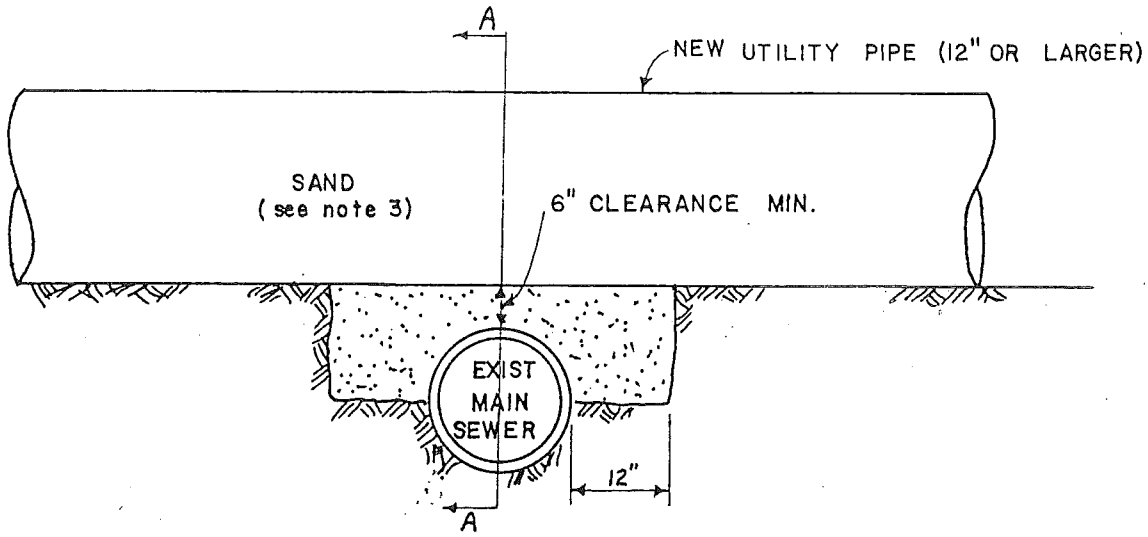
4. *Saddle connections shall be made only by licensed contractors.*



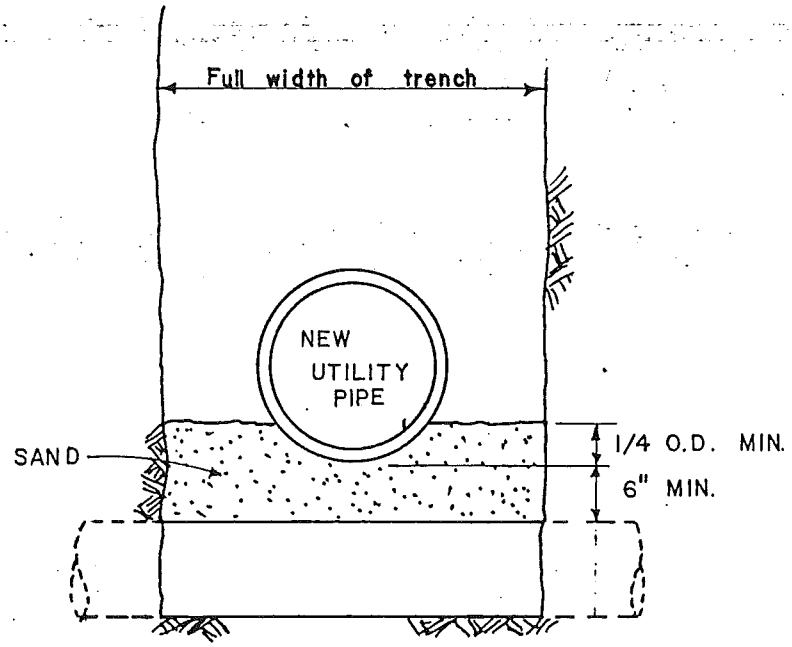
CONNECTION TO R.C.P.

NORTH MARIN COUNTY WATER DISTRICT NOVATO, CALIFORNIA	SADDLE CONNECTION DETAILS	DES	DR	CH	REC
			R.D.G.		
		APPROVED:			

SCALE NONE
DATE APRIL 19, 1971
SHEET NO. OF SHEETS
NO. A- S9



MAIN SEWER

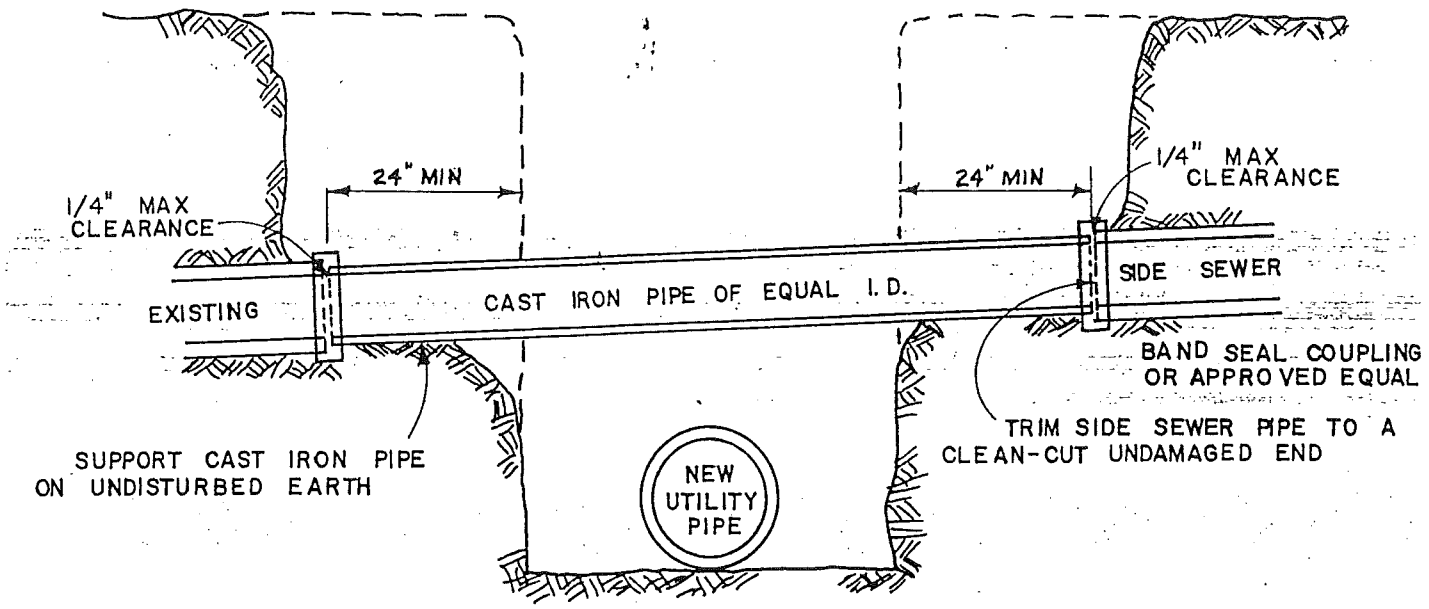


SECTION A-A

NOTES:

1. *Sewer protection as detailed hereon, shall be provided when a new utility pipe, 12" or larger, is installed above an existing main sewer and the clearance is less than 12".*
2. *Backfill shall not be placed until pipe installation has been inspected and approved.*

NORTH MARIN COUNTY WATER DISTRICT NOVATO, CALIFORNIA	MAIN SEWER PROTECTION BELOW UTILITY CROSSING	DES	DR	CH	REC	SCALE	NONE
			R.D.G.			DATE	APRIL 19, 1971
		APPROVED:				SHEET NO. OF SHEETS	
						NO.	A- S 10



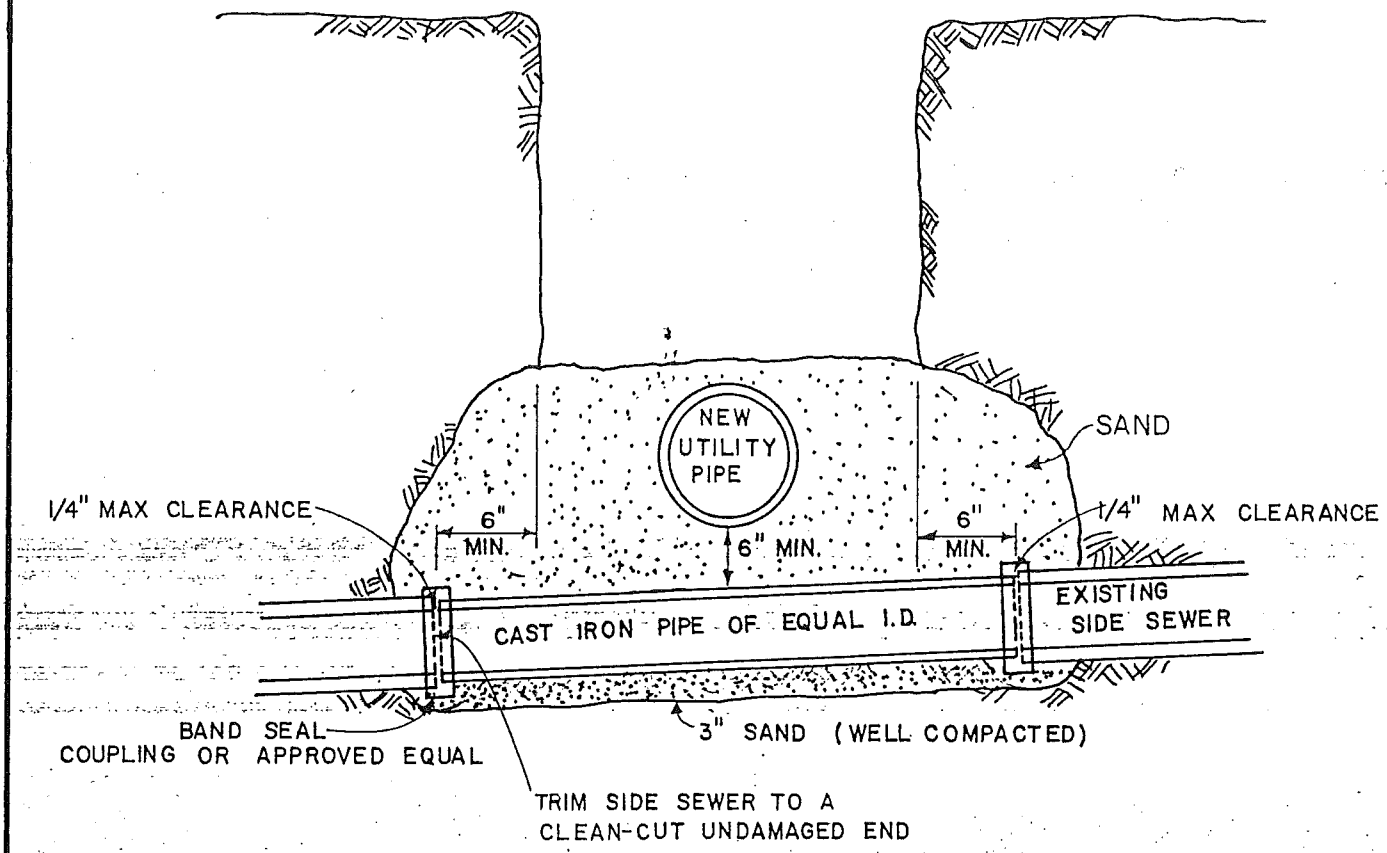
NOTES:

1. *Sewer protection, as detailed hereon, shall be provided when a new utility pipe, 12" or larger, is installed below an existing side sewer.*

2. *Backfill shall not be placed until pipe installation has been inspected and approved.*

3. *Minimum of 6" clearance shall be maintained between new utility pipe and side sewer.*

NORTH MARIN COUNTY WATER DISTRICT NOVATO, CALIFORNIA	SIDE SEWER PROTECTION ABOVE UTILITY CROSSING	DES	DR	CH	REC	SCALE	NONE
			R.D.G.			DATE	APRIL 19, 1971
		APPROVED				SHEET NO.	OF SHEETS
						NO.	A- S 11



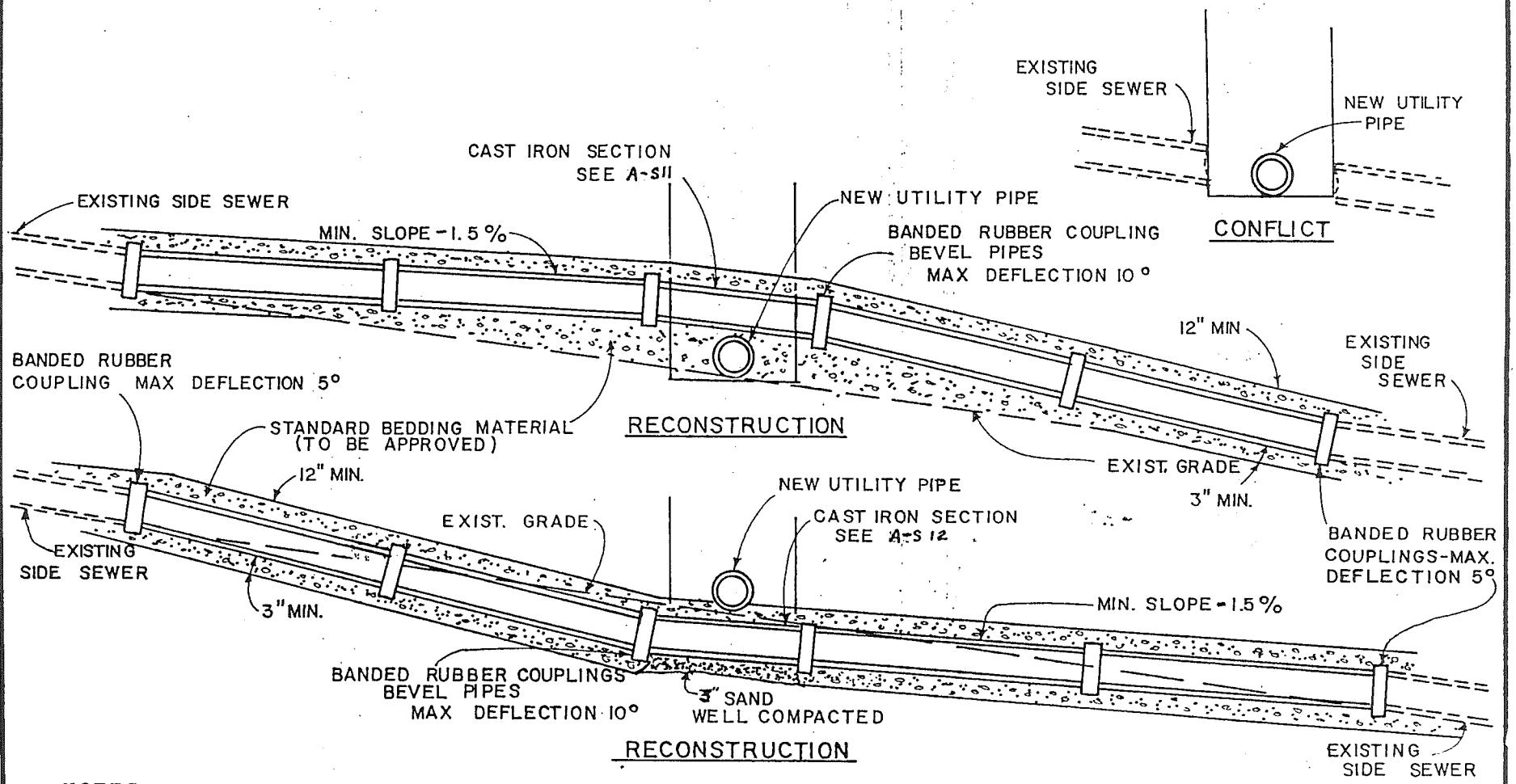
NOTES:

1. *Sewer protection, as detailed hereon, shall be provided when a new utility pipe, 12" or larger, is installed above an existing side sewer and the clearance is less than 12".*

2. *Backfill shall not be placed until pipe installation has been inspected and approved.*

3. *Sand to be well compacted below utility pipes.*

NORTH MARIN COUNTY WATER DISTRICT NOVATO, CALIFORNIA	SIDE SEWER PROTECTION BELOW UTILITY CROSSING	DES	DR	CH	REC	SCALE	NONE
			R.D. G.			DATE	APRIL 19, 1971
		APPROVED:				SHEET NO. OF SHEETS	
						NO.	A-S 12



NOTES:

1) *When new utility pipe or conduit conflicts with sewer line grade, the utility pipe or conduit shall be raised or lowered, if possible, to miss the sewer line. If it is not possible to move the utility line, written permission shall be obtained from the North Marin County Water District and the sewer line reconstructed in accordance with one of the details above and the Standard Specifications of the District.*

NORTH MARIN COUNTY WATER DISTRICT
NOVATO, CALIFORNIA

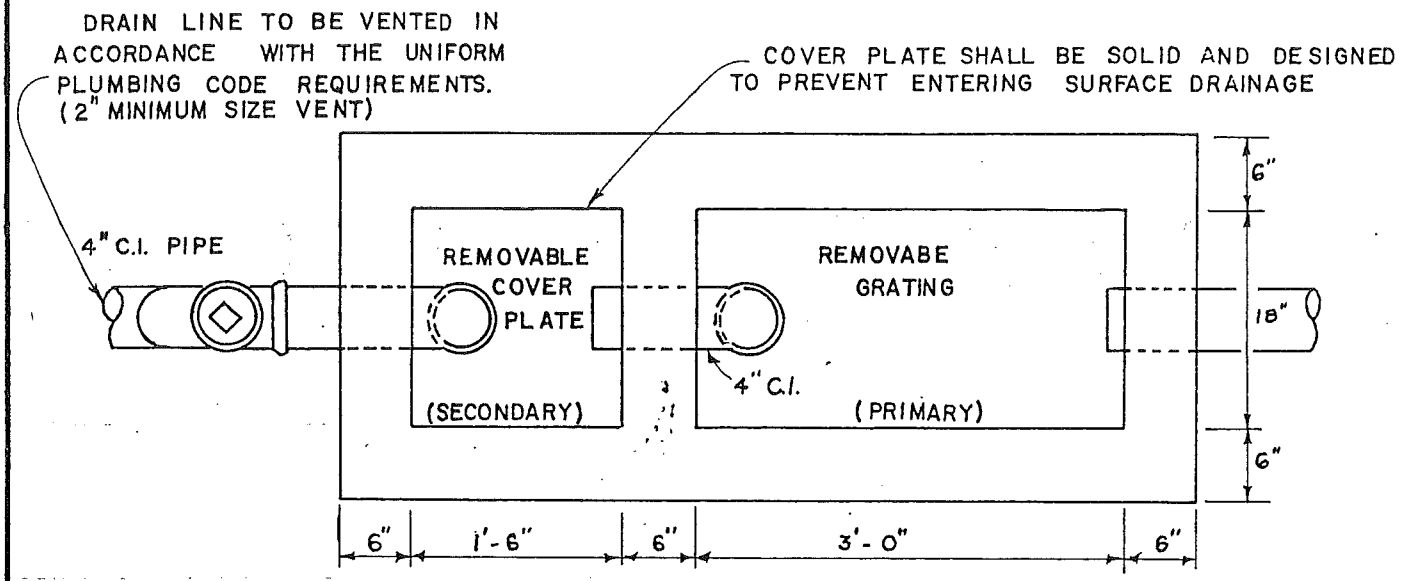
SIDE SEWER RECONSTRUCTION AT UTILITY CROSSINGS

DES	DR	CH	REC	SCALE
	R.D.G.			NONE

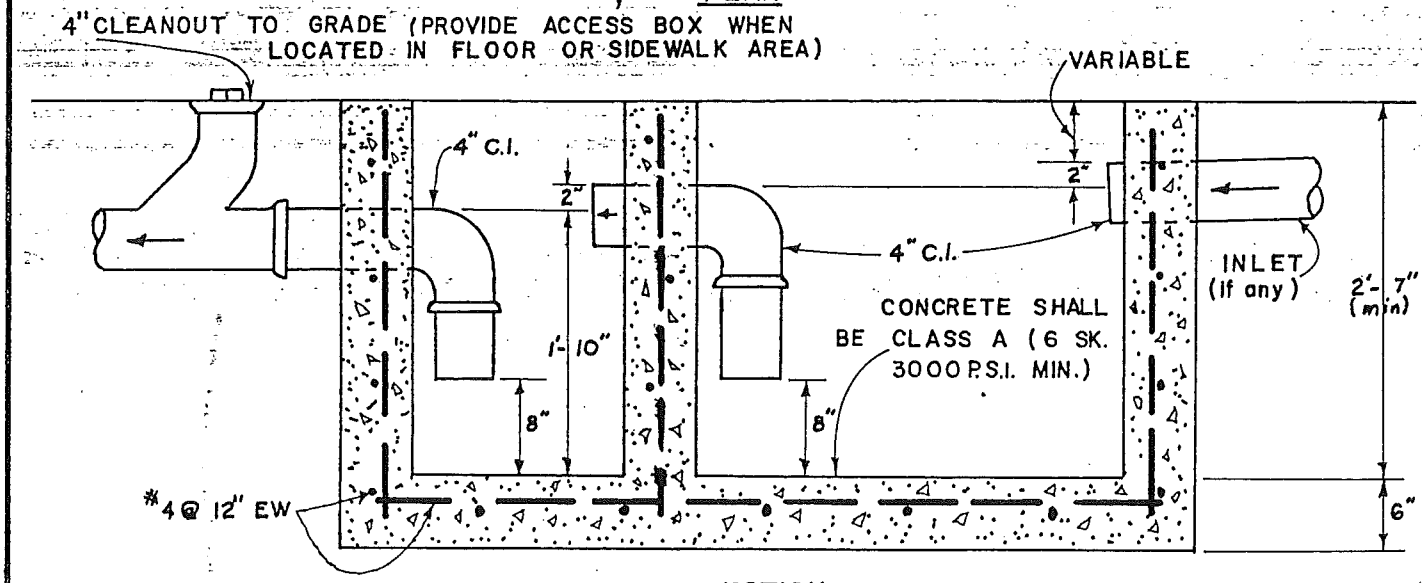
APPROVED:

DATE APRIL 19, 1971

SHEET NO. A — S 13 OF SHEETS



PLAN



SECTION

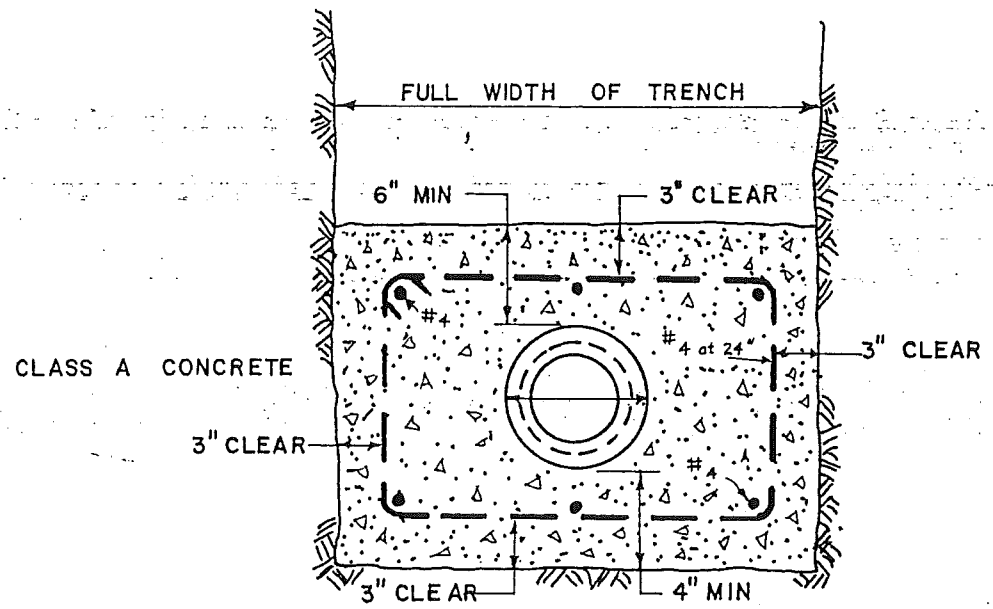
NOTES:

1) *Cover plate and grating shall be designed to sustain anticipated wheel or other loadings.*

2) *No surface or roof drainage will be permitted to enter interceptor.*

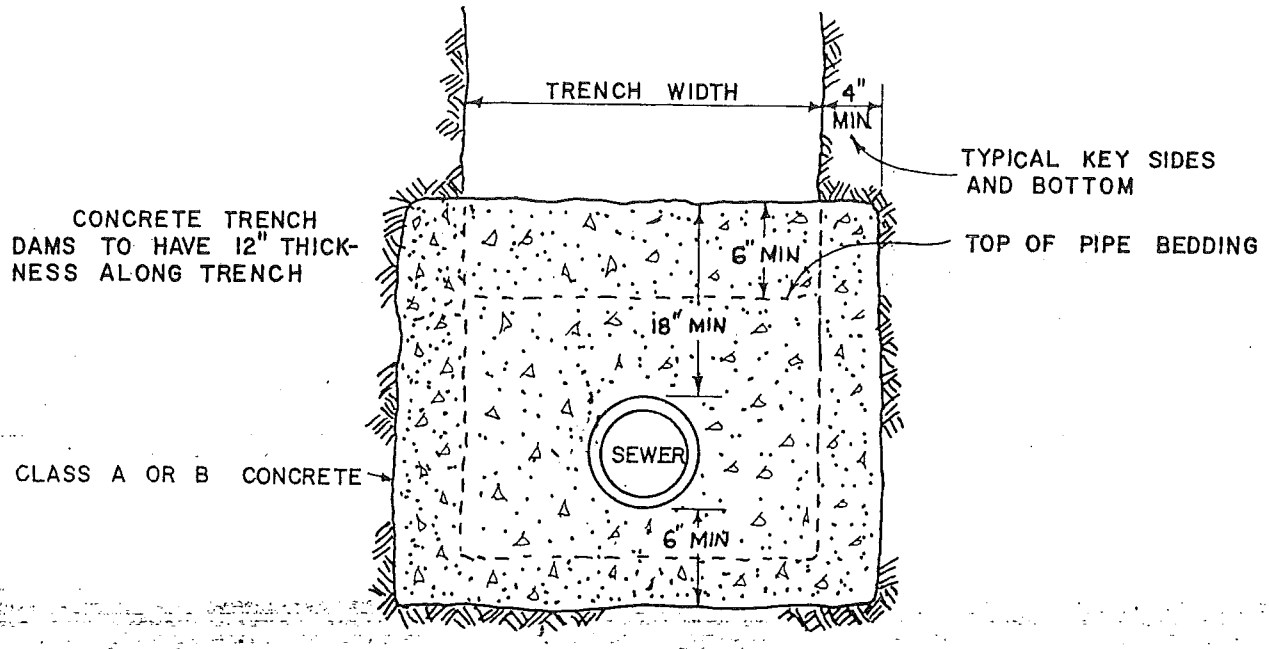
3) *Primary interceptor may be separated from secondary interceptor. Maximum separation shall be 25' unless separately vented.*

NORTH MARIN COUNTY WATER DISTRICT NOVATO, CALIFORNIA	STANDARD GREASE AND SAND INTERCEPTOR	DES	DR	CH	REC	SCALE NONE
			R.D.G.			DATE APRIL 19, 1971
		APPROVED:				SHEET NO. OF SHEETS
						NO. A — S 14

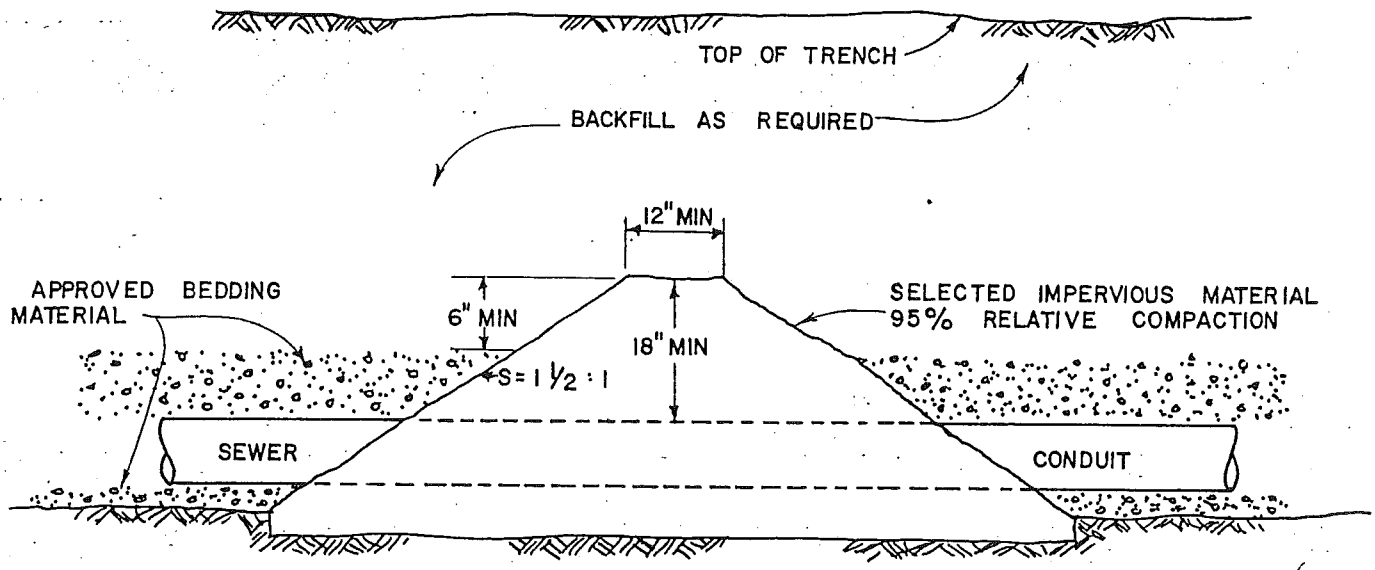


ENCASEMENT

NORTH MARIN COUNTY WATER DISTRICT NOVATO, CALIFORNIA	STANDARD CONCRETE ENCASEMENT	DES	DR	CH	REC	SCALE NONE
			R.D.G.			DATE APRIL 19, 1971
		APPROVED:				SHEET NO. OF SHEETS
						NO. A-S 15



CONCRETE TRENCH DAM

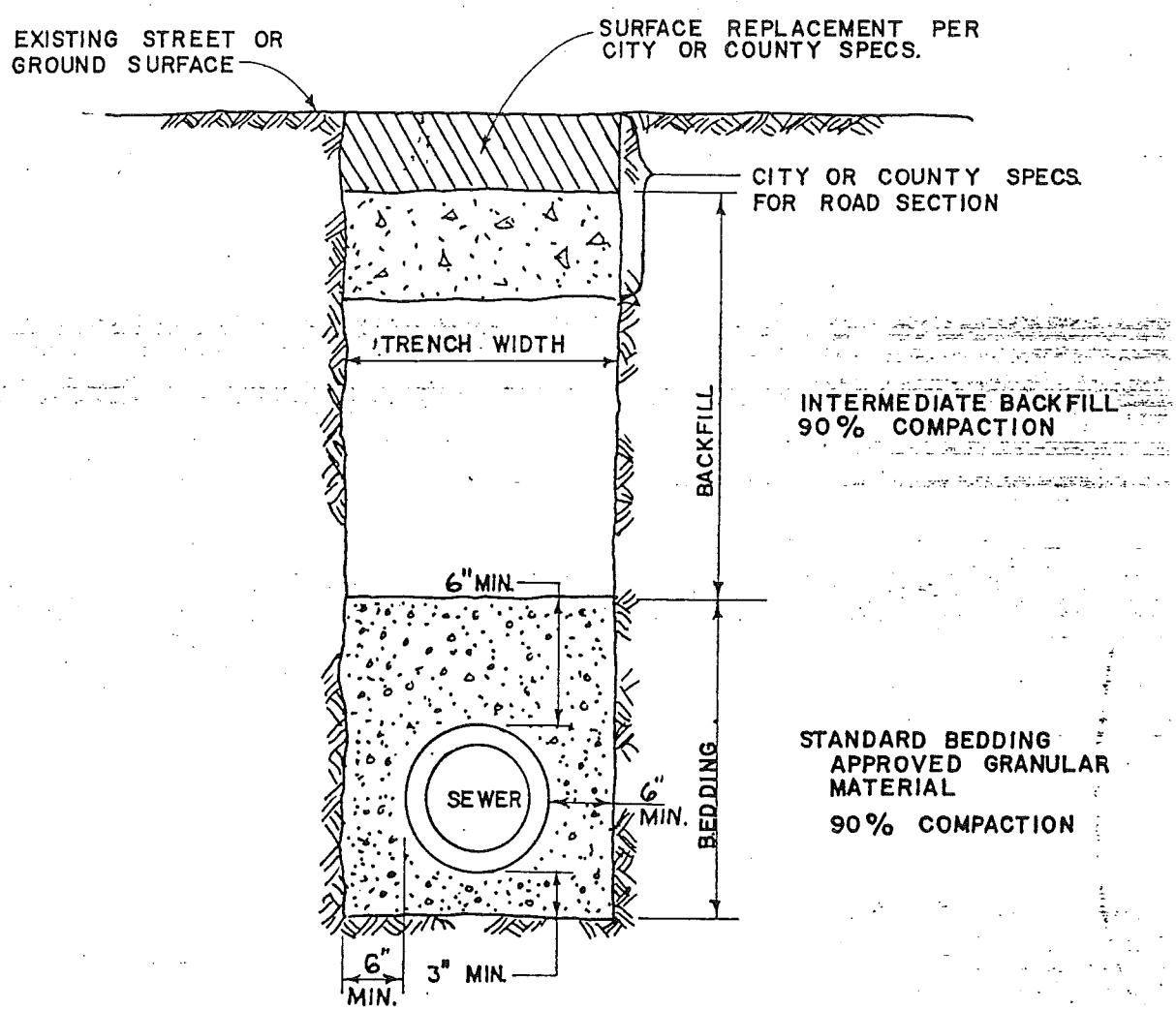


EARTH TRENCH DAMS SHALL BE KEYED INTO EACH SIDE AND BOTTOM OF TRENCH A MINIMUM OF 4"

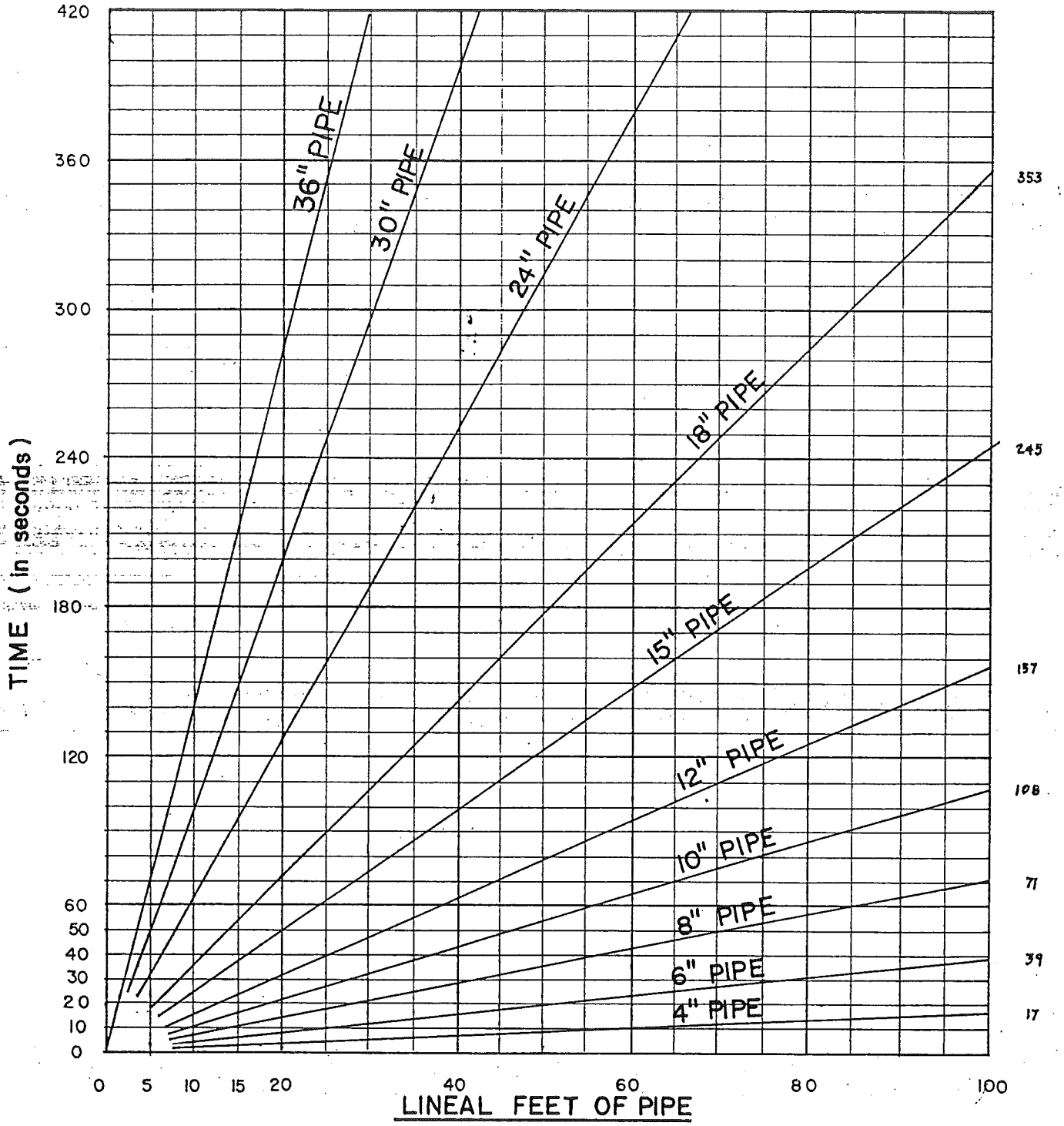
EARTH TRENCH DAM

1. *Concrete trench dam may be used only where specifically called for by the Engineer.*
2. *Form ends, cushion pipe with 1/2" Protecto Wrap tape, 1" foam rubber pad, or 1/2" plastic foam. Pipe cushion pad to project 1" minimum beyond face of concrete.*
3. *Earth trench dam shall be hand tamped under the pipe.*

NORTH MARIN COUNTY WATER DISTRICT NOVATO, CALIFORNIA	STANDARD TRENCH DAMS	DES	DR	CH	REC	SCALE NONE
			R.D.G.			DATE APRIL 19, 1971
		APPROVED:				SHEET NO. OF SHEETS
						NO. A — S 16

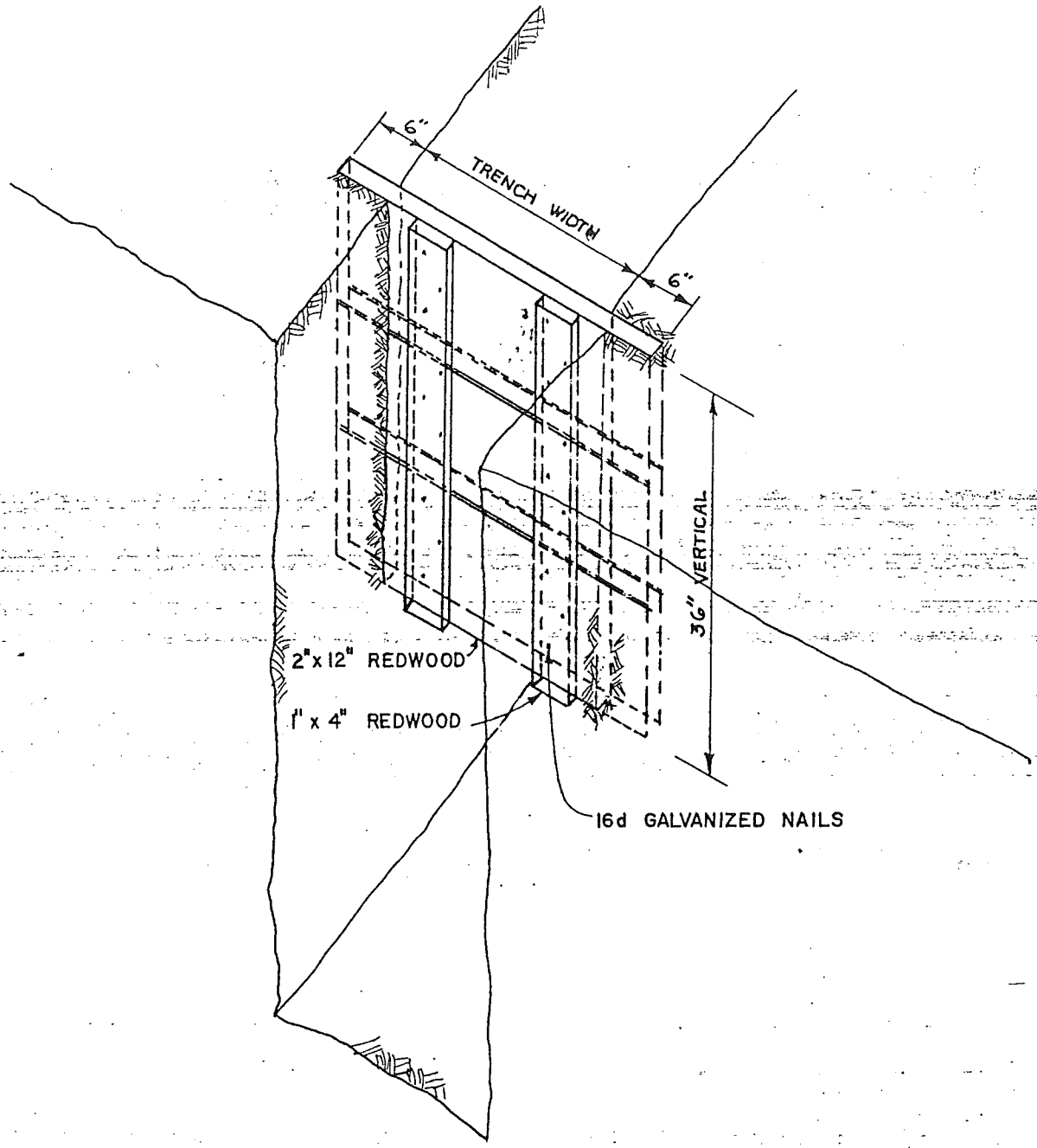


NORTH MARIN COUNTY WATER DISTRICT NOVATO, CALIFORNIA	STANDARD TRENCH DETAIL	DES	DR	CH	REC	SCALE NONE
			R.D.G.			DATE APRIL 19, 1971
		APPROVED:				SHEET NO. OF SHEETS
						NO. A-S17



AN ALLOWABLE PRESSURE DROP OF 1 P.S.I., AFTER APPLYING 4 P.S.I. PRESSURE, SHALL HAVE AN ELAPSED TIME OF NOT LESS THAN 2 SECONDS PER CUBIC FOOT VOLUME OF PIPE UNDER TEST.

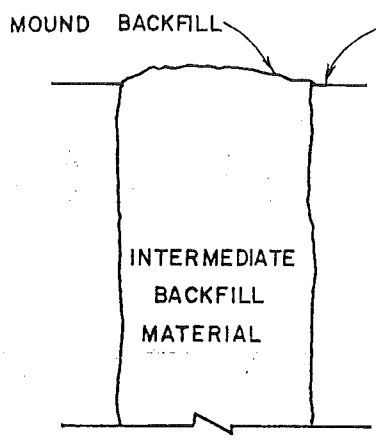
NORTH MARIN COUNTY WATER DISTRICT NOVATO, CALIFORNIA	ALLOWABLE LEAKAGE CHART AIR TEST	DES	DR	CH	REC	SCALE	NONE
			R.D.G.			DATE	APRIL 19, 1971
		APPROVED:				SHEET NO.	OF SHEETS
						NO.	A—S 19



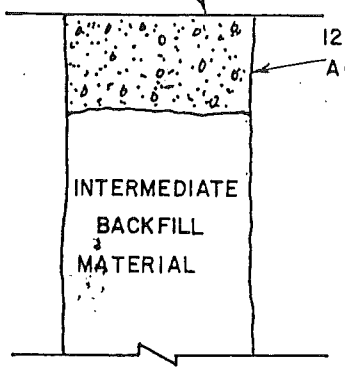
NOTES:

1. *Standard Redwood Check Dam to be placed at 20-foot intervals where ground slope is 1 to 1 or greater or as required by the District engineer.*

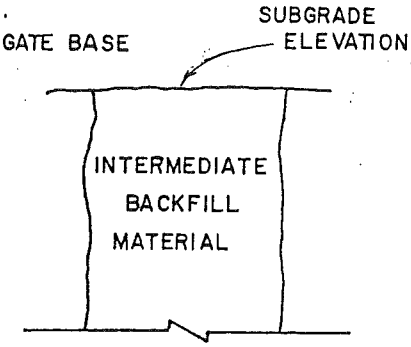
NORTH MARIN COUNTY WATER DISTRICT NOVATO, CALIFORNIA	STANDARD REDWOOD CHECK DAM	DES	DR	CH	REC	SCALE NONE
			R.D.G			DATE APRIL 19, 1971
		APPROVED				SHEET NO. OF SHEETS
						NO. A-S 20



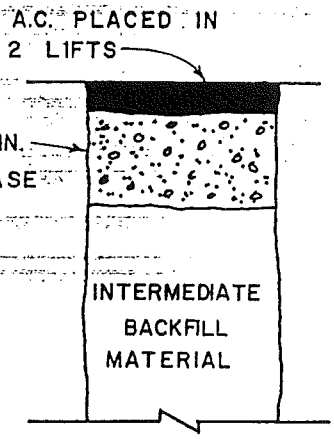
TYPE A



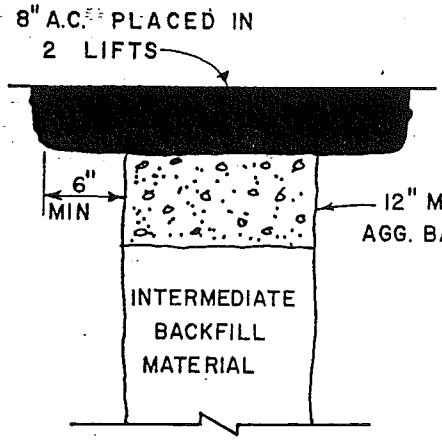
TYPE B



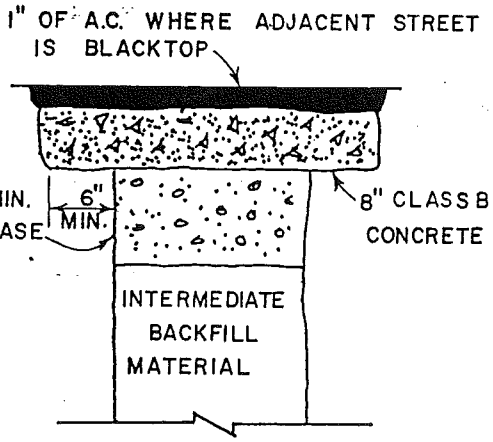
TYPE C



TYPE D



TYPE E

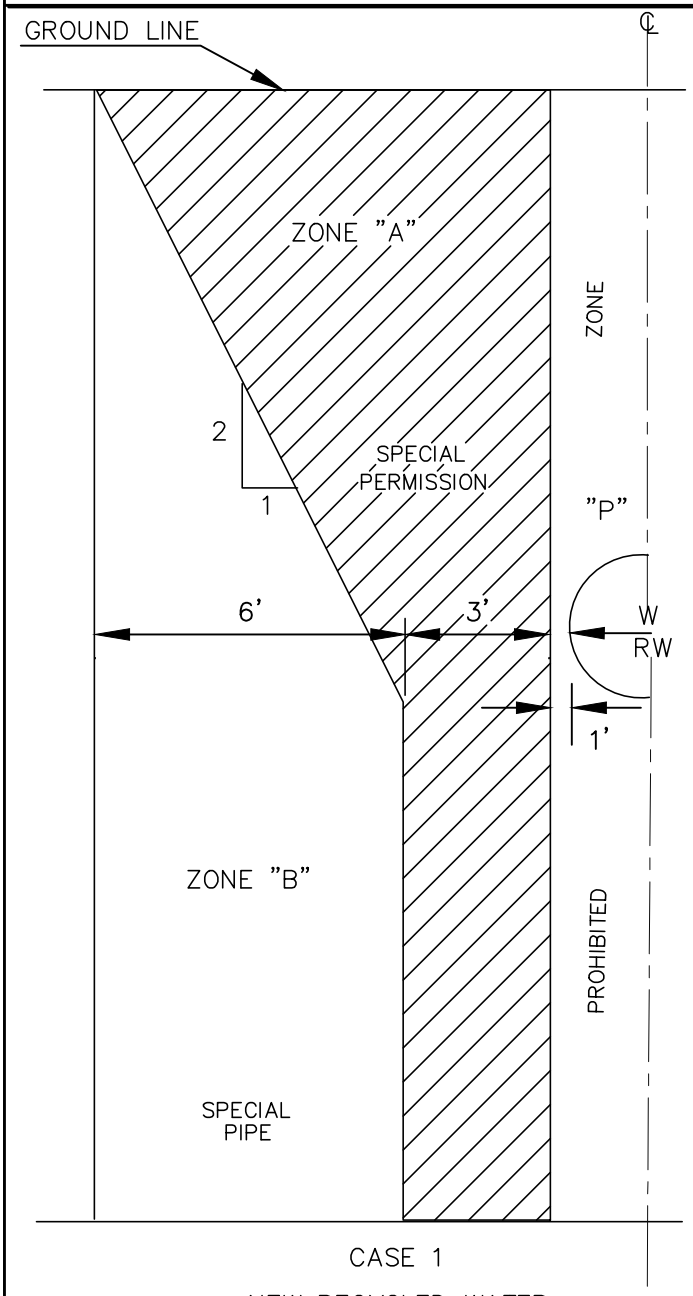


TYPE F

NORTH MARIN COUNTY WATER DISTRICT NOVATO, CALIFORNIA	STANDARD SURFACE REPLACEMENT	DES	DR	CH	REC	SCALE NONE
			R.D.G.			DATE APRIL 19, 1971
		APPROVED				SHEET NO. OF SHEETS
						NO. A-S21

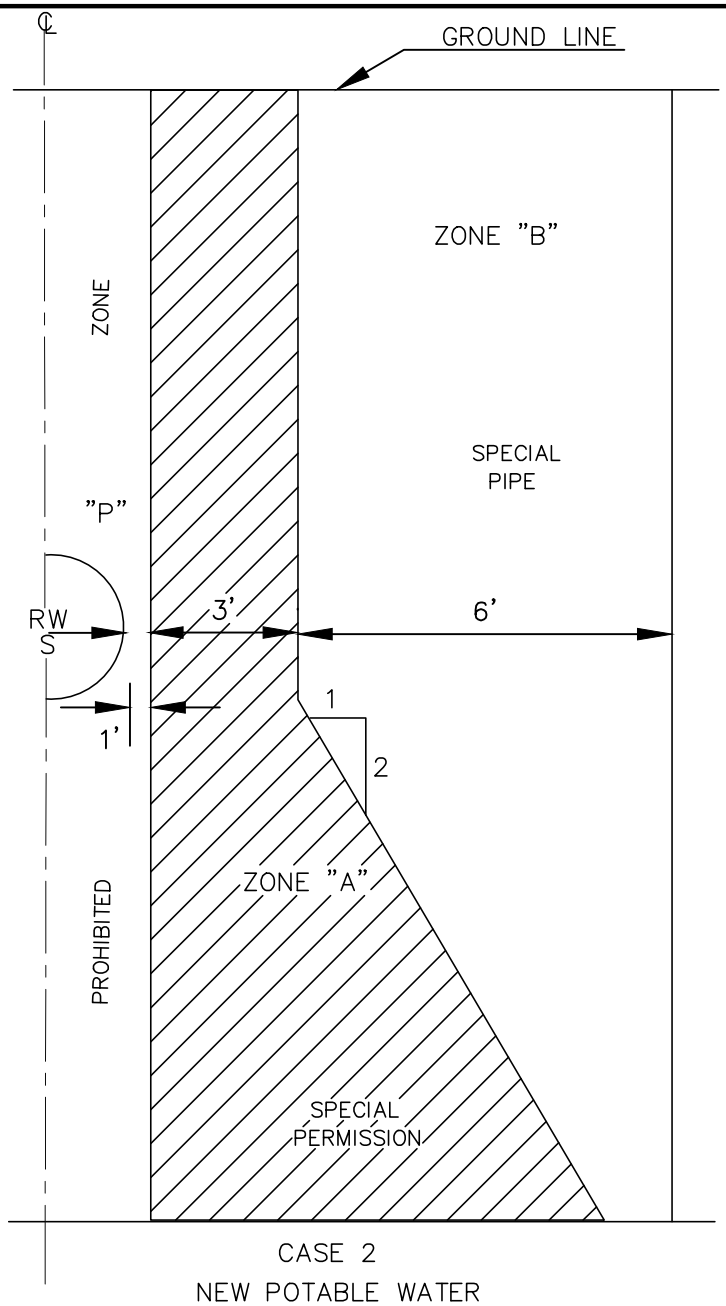
NOTES:

1) ZONES IDENTICAL ON EITHER SIDE OF THE CENTERLINE AS SHOWN BELOW
2) REQUIREMENTS OF THE STATE OF CALIFORNIA, HEALTH AND WELFARE AGENCY, DEPARTMENT OF HEALTH SERVICES
3) SEE STD NO. 31 FOR NOTES ON WATER, RECYCLED WATER AND SEWER MAIN PARALLEL AND PERPENDICULAR SEPARATIONS
4) REFER TO THE NMWD STANDARDS SPECIFICATION 15151 FOR PIPE SEPARATION REQUIREMENTS



CASE 1

NEW RECYCLED WATER
OR
NEW SEWER



CASE 2

NEW POTABLE WATER
OR
NEW RECYCLED WATER

NORTH MARIN WATER DISTRICT

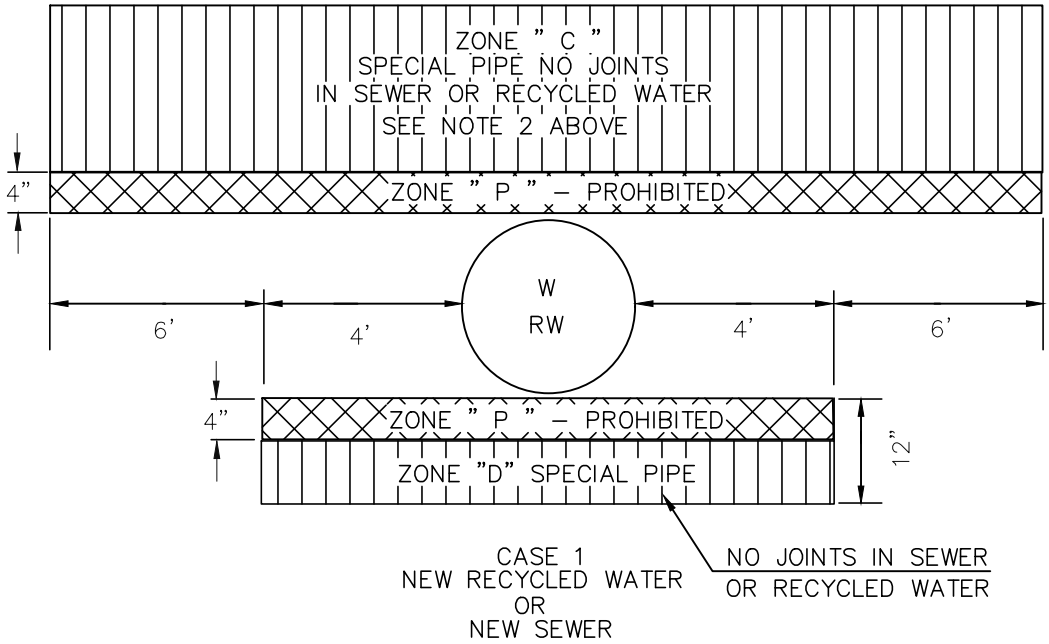
WATER, RECYCLED WATER AND SEWER MAIN PARALLEL SEPARATIONS

APPROVED	DATE	REV	STD NO
	12/28/10	0	29

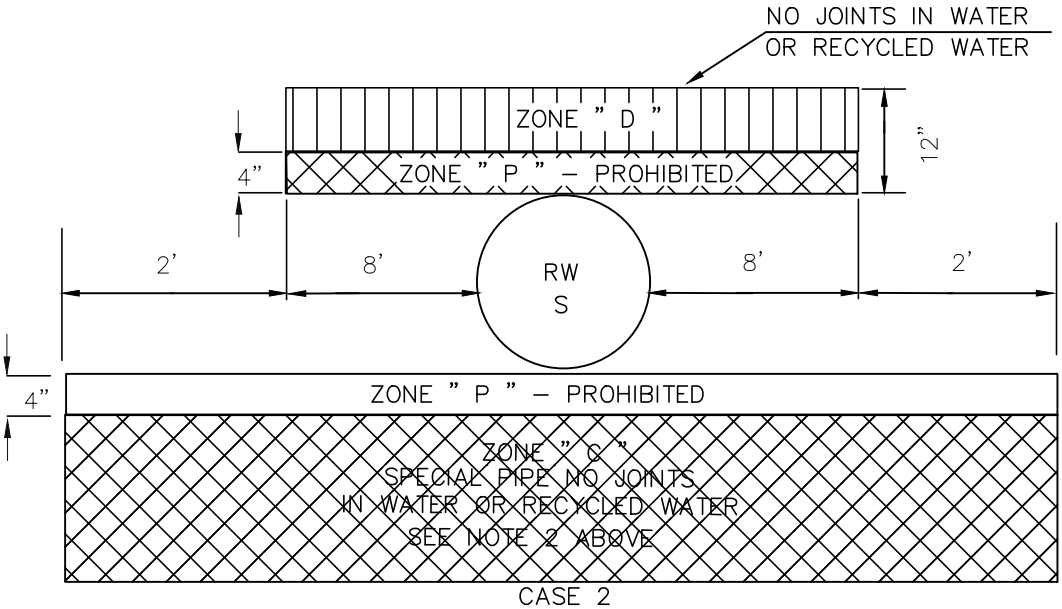
Jun 23, 2020 – 11:17am C:\JOB\MISC\STD\WEBSITE\29.dwg User: SUSAN

NOTES:

1) REQUIREMENTS OF THE STATE OF CALIFORNIA, HEALTH AND WELFARE AGENCY, DEPARTMENT OF HEALTH SERVICES
2) SEE STD NO. 31 FOR NOTES ON WATER, RECYCLED WATER AND SEWER MAIN PARALLEL AND PERPENDICULAR SEPERATIONS
3) MAINS SHALL CROSS OTHER UTILITIES AT A PERPENDICULAR ANGLE, UNLESS OTHERWISE APPROVED. IN ANY CASE, UTILITIES CROSSING AT A SKEW ANGLE OF SEVENTY FIVE DEGREES (75) OR LESS SHALL BE AVOIDED.
4) REFER ALSO TO NMWD STANDARD SPECIFICATION 15151 FOR PIPE SEPARATION REQUIREMENTS



CASE 1
NEW RECYCLED WATER
OR
NEW SEWER



CASE 2
NEW POTABLE WATER
OR
NEW RECYCLED WATER

NORTH MARIN WATER DISTRICT

WATER, RECYCLED WATER AND SEWER MAIN PERPENDICULAR SEPARATIONS

APPROVED	DATE	REV	STD NO
	12/28/10	0	30

DATE REVISED: 05/07

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CONSTRUCTION REQUIREMENTS FOR WATER, RECYCLED WATER AND SEWER MAINS

CASE 1: NEW RECYCLED WATER OR SEWER MAINS

ZONE

A SPECIAL PERMISSION REQUIRED. DO NOT LOCATE ANY PARALLEL SEWER OR RECYCLED WATER MAINS IN THIS AREA WITHOUT DISTRICT AND STATE HEALTH DEPARTMENT APPROVAL

B PVC SEWER PIPE WITH PUSH-ON TYPE RUBBER RING JOINTS FOR SEWER MAINS. C-900, DR14 OR C-905, DR18 PVC PIPE WITH PUSH-ON TYPE RUBBER RING JOINTS FOR RECYCLED WATER MAINS

C A 20' CONTINUOUS SECTION OF PVC SEWER PIPE CENTERED AT THE MAIN BEING CROSSED OR SEWER PIPE INSTALLED IN A CASING (FOR SEWER MAINS)
A 20' CONTINUOUS SECTION OF C-900, DR14 OR C-905, DR18 PVC RECYCLED WATER PIPE CENTERED AT THE MAIN BEING CROSSED, OR RECYCLED WATER PIPE INSTALLED IN A CASING (FOR RECYCLED WATER MAINS)

D A 8' CONTINUOUS SECTION OF PVC SEWER PIPE CENTERED AT THE MAIN BEING CROSSED, OR SEWER PIPE INSTALLED IN A CASING FOR (SEWER MAINS)
A 8' CONTINUOUS SECTION OF C-900, DR14 OR C-905, DR18 PVC RECYCLED WATER PIPE CENTERED AT THE MAIN BEING CROSSED, OR RECYCLED WATER PIPE INSTALLED IN A CASING (FOR RECYCLED WATER MAINS)

P PROHIBITED ZONE; NO SEWER, WATER OR RECYCLED WATER MAINS; SECTION 64630 (E) (2) CALIFORNIA ADMINISTRATIVE CODE, TITLE 22

CONSTRUCTION REQUIREMENTS FOR WATER, RECYCLED WATER AND SEWER MAINS

CASE 2: NEW WATER OR RECYCLED WATER MAINS

ZONE

A SPECIAL PERMISSION REQUIRED. DO NOT LOCATE ANY PARALLEL WATER OR RECYCLED WATER MAINS IN THIS AREA WITHOUT DISTRICT AND STATE HEALTH DEPARTMENT APPROVAL

B C-900 DR14 OR C-905, DR18 PVC PIPE WITH PUSH-ON TYPE RUBBER RING JOINTS FOR WATER MAINS
C-900, DR14 OR C-905, DR18 PVC PIPE WITH PUSH-ON TYPE RUBBER RING JOINTS FOR RECYCLED WATER MAINS

C A 20' CONTINUOUS SECTION OF C-900, DR14 OR C-905, DR18 PVC WATER PIPE CENTERED AT THE MAIN BEING CROSSED, OR WATER PIPE INSTALLED IN A CASING (FOR WATER MAINS)
A 20' SECTION OF C-900, DR14 OR C-905, DR18 PVC RECYCLED WATER PIPE CENTERED AT THE MAIN BEING CROSSED, OR RECYCLED WATER PIPE INSTALLED IN A CASING (FOR RECYCLED WATER MAINS)

D A 16' CONTINUOUS SECTION OF C-900, DR14 OR C-905, DR18 PVC WATER PIPE CENTERED AT THE MAIN BEING CROSSED, OR WATER PIPE INSTALLED IN A CASING (FOR WATER MAINS)
A 16' CONTINUOUS SECTION OF C-900, DR14 OR C-905, DR18 PVC RECYCLED WATER PIPE CENTERED AT THE MAIN BEING CROSSED, OR RECYCLED WATER PIPE INSTALLED IN A CASING (FOR RECYCLED WATER MAINS)

P PROHIBITED ZONE; NO SEWER, WATER OR RECYCLED WATER MAINS; SECTION 64630 (E) (2) CALIFORNIA ADMINISTRATIVE CODE, TITLE 22

NORTH MARIN WATER DISTRICT

WATER, RECYCLED WATER AND SEWER MAIN PARALLEL AND PERPENDICULAR SEPARATION NOTES

APPROVED	DATE	REV	STD NO
	12/28/10	0	31

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NORTH MARIN WATER DISTRICT

STANDARD SPECIFICATIONS

SECTION 02200 EARTHWORK

PART 1 GENERAL

1.01 DESCRIPTION

Scope Covered By This Specification

The work to be performed applies to the furnishing of all plant, labor and equipment for site clearing, stripping and rough grading, structural excavation and backfill, finish grading, and road construction, all as shown on the design drawings and as further specified herein, including but not limited to:

A. Surveying to necessary lines and grades to perform the work.

B. Removal of trees and other vegetation.

C. Clearing and grubbing.

D. Stripping and stockpiling topsoil.

E. Removing any above grade or below grade improvements as necessary.

F. Protecting any above grade or below grade improvements as necessary.

G. Excavating to lines, grades and elevations as shown on the design drawings.

H. Removing and hauling excavated material to disposal areas or stockpiles for use as backfill.

I. Hauling material from stockpiles or borrow areas to points of placement.

J. Placing and compacting backfill material.

K. Furnishing, placing and compacting subgrade and base course materials for roads and paved areas.

L. Constructing shoulders and slopes.

Scope Not Covered By This Specification

- Trenching and backfilling for pipelines.
- Landscaping.

1.02 REFERENCED CODES AND STANDARDS

Unless otherwise specified herein or shown on the drawings, work under this Specification shall be performed in accordance with the following codes and standards in force on the date of award of the Subcontract to which this specification is a part thereof:

ASTM D 422	Standard Method for Particle-Size Analysis of Soils
ASTM D 1556	Standard Test Method for Density and Unit Weight of Soil In-Place by the Sand-Cone Method
ASTM D 1557	Standard Test Methods for Moisture-Density Relations of Soils and Soil-Aggregate Mixtures, Using 10-lb (4.54-kg) Rammer and 18-in. (457-mm) Drop
ASTM D 2487	Standard Method for Classification of Soils for Engineering Purposes
ASTM D 2922	Standard Test Methods for Density of Soil and Soil-Aggregate In-Place by Nuclear Methods (Shallow Depth)
ASTM D 4318	Standard Test Method for Liquid Limit, Plastic Limit and Plasticity Index of Soils
CAL/OSHA Title 8, Div. 1, Chapter 4, Subchapter 4	Construction Safety Orders
SS-26	Aggregate Bases

1.03 RELATED WORK SPECIFIED ELSEWHERE

NMWD Standard Specifications 01000, 02202, 02223, 02700

PART 2 MATERIALS

2.01 TOPSOIL

Topsoil is defined as friable clay loam surface soil found in a depth of not less than 4". Satisfactory topsoil is reasonably free of subsoil clay lumps, stones, and other objects over 2" in diameter, and without weeds, roots, trash and other unsuitable material.

2.02 FILL MATERIAL

Fill material, including common backfill, structural or select backfill, and subgrade material, shall be sound, dense and durable material obtained from the required excavation. Fill material shall be free of rock or gravel over 6" in the greatest dimension, organic material, roots, trash, frozen soil or any similar unsuitable material. When materials are not available from required excavations, materials shall then be obtained from designated borrow areas.

Fill material shall contain less than 50% by weight passing the No. 200 sieve and be classified as coarse grained soil in accordance with ASTM D-2487.

Materials with more than 50% by weight passing the No. 200 sieve, classified as fine grained soils in accordance with ASTM D-2487, encountered in the excavation or designated borrow areas are unsuitable for use as fill material.

2.03 AGGREGATE BASE

Aggregate base material shall conform to SS 26-1.02B. The combined aggregate shall conform to the grading specified for 3/4" maximum size aggregate.

2.04 HYDRO SEED MIX

See Section 2202, parts 2.02 and 2.03.

PART 3 EXECUTION

3.01 SURVEY REQUIREMENTS

The District will establish a baseline and reference bench mark in the vicinity of the work to be performed.

The contractor shall preserve all stakes, existing monuments and bench marks.

The contractor shall be responsible for all location and layout surveying associated with the scope of work other than establishment of a baseline and reference bench marks.

The District reserves the right to make a separate survey check of the work at any time and the Contractor shall cooperate with the District in checking work quantities. The Contractor shall be responsible for staking, measuring, and computing all quantities and units.

3.02 SITE CLEARING AND STRIPPING

Remove trees, shrubs, grass and other vegetation, improvements or obstructions, within the limits of the work as shown on the design drawings. Completely remove

stumps, tree roots larger than 1" in diameter, and other below grade debris. The upper 2 feet of soil in the root area should be overexcavated.

Any trees or shrubs within the limits of the work, to be preserved shall be noted on the design drawings and physically marked by the District.

Completely remove those underground pipe or conduits designated for removal as shown on the design drawings.

Those underground pipe or conduits to remain shall be protected to not disturb their function during the work.

Stripping shall consist of the removal of all topsoil and organic material within the limits of the work as shown on the design drawings. Strip topsoil to whatever depths encountered in a manner to prevent intermingling with underlying soil or other objectionable material.

Stockpile topsoil in storage piles in the vicinity of the work site as approved by the District. Construct storage piles to freely drain and not impound surface water. Cover storage piles as required to prevent wind blown dust.

Cleared debris, including trees, shrubs, stumps, roots, large rocks and other unsuitable material shall be hauled from the site and disposed of at an approved, off-site disposal area.

Burning of cleared debris is not permitted.

3.03 ROUGH GRADING AND EXCAVATION

Road subgrade and ditches shall not vary more than plus or minus 0.10 feet from the established grade and cross section.

Permanent cut slopes shall be no steeper than 2:1 and left rough graded. There shall be no trimming of the cut slope with grader, dozer, or other cutting blade. The cut slope shall be raked down as the cut slope is made to remove all clods, rocks and loose material.

Cut slopes shall not vary more than plus or minus 0.5 feet from the established grade and cross section as shown on the design drawings.

Site specific information on the soils expected to be encountered in performance of this work is provided in the Special Conditions.

Excavation shall include all materials encountered within the limits shown on the drawings, regardless of their nature or the manner in which the material is removed.

All excavated material suitable for fill shall be stockpiled or immediately placed in required fill areas. Excess excavated material shall be hauled to an approved disposal area.

Unsuitable material, as determined by the District, encountered at the sides or bottom of the excavation shall be removed and hauled to an approved disposal area. The extent of removal of such material shall be as directed by the District.

Water in excavations shall be controlled and removed. Excavation below grade shall be conducted so as to cause water to run to a low corner where it can be pumped out and will cause the least damage. Discharge from pumps shall be at locations to avoid erosion.

Overexcavation, beyond tolerances specified herein, shall be backfilled to grade in accordance with requirements for fill specified herein.

Excavation for tank pads and pump station foundations shall conform to the lines, grades and elevations shown on the drawings with allowable tolerance of minus zero to plus 0.2 feet.

The Contractor shall provide temporary erosion control in work areas as necessary.

The Contractor shall control dust in work areas to prevent damage to adjacent property and preclude any nuisance to property owners or other Contractors.

Excavated areas to be backfilled shall be maintained in a clean condition free from leaves, brush, sticks, trash and other debris.

Excavations shall comply with CAL/OSHA requirements.

3.04 BORROW MATERIAL

Borrow materials shall be obtained from the borrow area(s) designated by the District. Approval of other sources selected by the Contractor may be requested in writing from the District.

In transporting borrow material, the Contractor shall avoid spillage from trucks onto the road. Spilled material shall be removed immediately by the Contractor.

All borrow areas shall be graded for drainage at the end of each work day.

3.05 FILLS

Fills shall be constructed to lines and grades shown on the drawings. The material shall be placed in successive horizontal layers not to exceed 12" in loose depth for the full width of the cross section and shall be compacted to the percentage of maximum dry density specified herein. For areas not accessible to heavy compaction equipment, fill materials shall be placed in horizontal layers not to exceed 6" in loose depth and compacted with hand tools.

An area shall receive fill only after the area has been stripped and the in-situ soil compacted to the density specified herein. Any soft spots shall be removed and replaced with backfill as specified herein.

Material shall be placed in filled areas so that, when compacted, it forms a homogeneous mass, free from lenses, pockets, streaks, and layers of material differing substantially in texture and gradation from surrounding fill material. The surface of each compacted layer shall be scarified to a minimum depth of 2" before placing the next layer. If the fill surface softens as a result of heavy rains, the surface shall be scarified and allowed to dry until the moisture content is suitable for the compaction specified.

All necessary work shall be performed to adjust the moisture content of the fill material to the range suitable for the compaction specified. This shall include but not be limited to adding water, spreading, scarifying and mixing to wet or dry the soil to reach the moisture content range suitable for the compaction specified.

Material to be compacted shall whenever possible be moisture conditioned in the stockpiles or borrow sources.

Moisture content of loose excavation material placed directly into the fill shall be adjusted as necessary to the range suitable for the compaction specified.

Unless specified otherwise herein or on the design drawings, all fill material shall be compacted to 90% of maximum dry density as determined by ASTM D 1557.

Contractor shall grade uncompleted fill areas for drainage and thoroughly compact the surface at the end of each work day.

When concrete has just been placed, Contractor shall wait until the strength of concrete has reached 60% of final compaction before placing backfill against the concrete.

If the subgrade concrete has been waterproofed, the backfilling shall be done so as not to damage the waterproofing or its protective materials.

Backfill within two feet of structures shall be compacted using hand tools.

3.06 BASE COURSE

Aggregate base course shall be provided where shown on the design drawings.

Aggregate base course material shall be delivered as a uniform mixture and spread in layers. Segregation shall be avoided and the base shall be free from pockets of coarse or fine material.

Each layer shall be compacted to a relative compaction of not less than 95% and to a point where no movement (pumping) or rutting can be observed under the load of normal construction equipment.

The surface of the finished base at any point shall not vary more than 0.05 feet above or below the design grade. Pockets of loose rock on the surface will not be accepted. Base which does not conform to the above requirements shall be reworked.

3.07 DUST CONTROL

Take all steps possible to prevent and reduce dust arising from the construction activity. Have adequate water trucks on the site at all times and water, as necessary, the areas where dust may arise. Cooperate fully with the Owner and water immediately, when told to do so. Coordinate with the City of Novato or County of Marin in advance of work to ensure compliance with requirements for haul routes to minimize the impacts on dust control, traffic disruption and safety.

3.08 INSPECTION AND TESTING

The District requires inspection and tests on the fill material to ensure compliance with this Specification. The Contractor shall employ an independent soils testing firm, acceptable to the District, to conduct in-place density and other tests in the compacted fill and the related laboratory compaction testing to determine the relative degree of compaction and other properties. In addition, concurrent with construction, the Contractor will take samples of the material from the borrow or stockpile areas and the independent soils testing firm will test these samples for moisture content and gradation, and carry out any other control or record tests which may be required. Testing will be performed as frequently as deemed necessary. The Contractor shall furnish labor, equipment and materials to obtain samples.

Fill sections failing to meet these specifications shall be removed and replaced or reworked until the required compaction is achieved.

Tests will be performed simultaneously with the construction operations in order that the test results can be used by the Contractor in his operations.

Laboratory maximum density tests will be performed on fill material in accordance with ASTM D 1557 as set forth in this Specification. Prior to filling, at least three tests will be performed on a representative sample of the material to be used. During filling, three laboratory maximum density tests will be performed each time there is evidence of a change in fill material.

At the District's request, gradation tests and Atterberg limits tests will be performed on fill material in accordance with ASTM D 422 and ASTM D 4318. Three gradation tests and three Atterberg limits tests will be performed on each sample used for laboratory maximum density testing. In addition, three gradation tests and three Atterberg limits tests will be performed whenever it appears the material has changed.

In-place density tests will be performed on fill material in accordance with ASTM D 1556, or ASTM D 2922. At least one in-place density test will be performed for each lift to be compacted and at least one test will be performed each day for each area being compacted.

In the event tests indicate that the density does not meet specified requirements, the material shall be reworked until retesting indicates that the compacted material meets these Specifications.

END OF SECTION

NORTH MARIN WATER DISTRICT'S STANDARDS

STANDARD SPECIFICATIONS

SECTION 02202 SLOPE PROTECTION AND EROSION CONTROL

PART 1 GENERAL

1.01 DESCRIPTION

This section includes materials and installation for slope protection and erosion control.

1.02 REFERENCE STANDARDS

The publications listed below form part of this specification to the extent referenced and are referred to in the text by the basic designation only. Reference shall be made to the latest edition of said standards unless otherwise called for.

ACI 301	-	Specifications for Structural Concrete for Buildings
ACI 318	-	Building Code Requirements for Reinforced Concrete
ASTM A 185	-	Standard Specification for Steel Welded Wire Fabric, Plain, for Concrete Reinforcement
ASTM C 90	-	Standard Specification for Load-Bearing Concrete Masonry Units
ASTM C 150	-	Standard Specification for Portland Cement
ASTM C 476	-	Standard Specification for Grout for Masonry
ASTM C 615	-	Standard Specification for Granite Dimension Stone
ASTM E 162	-	Standard Test method for Surface Flammability of Materials Using a Radiant Heat Energy Source

1.03 RELATED WORK SPECIFIED ELSEWHERE

NMWD Standard Drawings
NMWD Standard Specifications 01000, 02223, and 15000

1.04 LOCAL AND STATE AGENCY REQUIREMENTS

Slope protection and erosion control shall be accordance with the requirements of the Agency of Jurisdiction, the Regional Standards, and the Regional Water Quality Control Board.

PART 2 MATERIALS

2.01 CUT-OFF WALLS

Cut-off walls shall be as shown in the Standard Drawings and /or construction drawings. The following materials are acceptable for the various configurations in the construction of the walls, as shown on the drawings:

A. Portland Cement: Cement shall be Type II per ASTM C 150.

B. Concrete: Per ACI 301. Compression strength shall be 2500 PSI minimum (560-D-3250) with four (4) inches slump maximum. All admixtures (i.e. air-entraining, accelerators, water-reducing or pozzolan, etc.) shall be per manufacturer's recommendations. Calcium chloride shall not be used in concrete.

C. Masonry: All masonry units shall conform to ASTM C 90, with a minimum compression strength of 1500 PSI minimum @ 28 days.

D. Reinforcing Steel & Welded Wire Fabric: Bars shall be per ASTM A 615, Grade 60. Fabric mesh shall be per ASTM A 185. Reinforcing steel and welded wire fabric shall be installed in accordance with the Standards Drawings.

E. Mortar: Mortar shall consist of 1 part Portland cement, 1/4 to 1/2 part lime putty or hydrated lime, and sand equal to 2 1/4 to 3 times the sum volumes of cement and lime used and shall conform to ASTM C 476. Mortar compressive strength shall be 1800 PSI minimum @ 28 days.

2.02 SEED MIX (HAND SEEDED)

Where a prescribed seeding or planting palette has not already been designated by the general land-use agency for the project, a site-specific seed mixture list is to be prepared by the Contractor and presented to the District for comment and approval prior to the purchase of any seed and/or planting materials. An example of a seed mixture list for re-vegetation is as follows:

Composition:

PLS* %	Species (BotanicalCommon)	Minimum Germ
20%	Nassella pulchra	50
30%	Hordem branchyantherum	50
25%	Bromus Carinatus	50
25%	Elymus glaucus	50
	45 total lbs per acre	

*PLS = Pure Live Seed

A. Quality: All seed shall be in conformance with the California State Seed Law of the Department of Agriculture. Each seed bag shall be delivered to the site sealed and clearly marked as to species, purity, percent germinations, dealer's guarantee, and dates of test. Prior to seeding at the request of the District, the Contractor shall provide a letter of certification, original Association of Official Seed Analysts (AOSA) seed test results.

B. All legume seed shall be pellet-inoculated as provided in Bulletin AXT-280 of the University of California Cooperative Extension, "Pellet Inoculation of Legume Seed." Inoculant sources shall be species specific and shall be applied at a rate of 2 pounds of inoculant per one hundred pounds of seed.

C. Seed mix shall be supplied by Rana Creek Habitat Restoration, Pacific Coast Seed, or approved equivalent.

2.03 HYDRO SEED MIX

The hydro seed mix shall be a bonded matrix consisting of wood fiber, fertilizer and high quality live seed (per Item 2.02 above) in the following proportions:

Seed	See SEED MIX above
Fiber mulch	2,000 lbs/acre
Slow release fertilizer 20-10-5	150 lbs/acre
Soil binder	100 lbs/acre

Mix soil binder at the rate of 1 lb per 25 gallons of water.

PART 3 EXECUTION

3.01 SURFACE RESTORATION

A. Hand seeding and hydro seeding: Unimproved areas disturbed during the course of construction shall be reseeded by one of the following methods. Hand seeding may be used when the area to be seeded is 1.0 acre or less. Hydro seeding shall be used on all areas in excess of 1.0 acre. The landscape contractor shall provide all labor, materials, tools and equipment necessary to complete all work as required.

1. Hand seeding shall be performed using the mixture listed above. Seeding shall be performed on prepared topsoil. Depending on the time of year, application of water may be required to speed germination.

2. Hydro seeding shall be performed using the mixture listed above. A landscape contractor licensed to perform this type of work shall install hydro seeding. Preparation of the topsoil and maintenance of the area after seeding shall be performed per the requirements and recommendations of the hydro-seeding contractor. The District, as shown on the Approved Drawings, may require a temporary irrigation system. Apply the hydro seed mixture in the form of slurry consisting of fiber mulch, seed, soil binder, fertilizer, and water. When hydraulically sprayed on the soil surface, the mix shall form a uniform blotter-like ground cover of seed, fertilizer, binder and fiber mulch.

B. Slope Protection:

1. Slopes from 0% to 20%:

   Apply hand seeding or hydro seeding per directions described above.

2. Slopes from 20% to 50%:

   In addition to the seeding, the following additional slope protection shall be employed:

   a. Erosion Control Blankets:

      Erosion control blanket shall be SC150 by North American Green or approved equal.

      Erosion control blankets shall be installed per the manufacturer's recommendations.

b. Straw Wattles:

Shall be manufactured from rice straw and be wrapped in tubular plastic netting. The netting shall have a strand thickness of at least .030 inch, and be composed of UV inhibition polyethylene and ethyl vinyl acetate. Wattles shall be 8 to 10 inches in diameter, 25 ft. in length, and weigh a minimum of 35 lbs. Wattles shall be installed in accordance with manufacturer's recommended specifications, which includes but is not limited to: trenched in on contour at the specified interval, secured by wood stakes, and placed and spaced as noted on plans. The ends of adjacent wattles shall be abutted together.

3. Slopes over 50%:

In addition to the seeding, the following additional slope protection shall be employed:

a. Erosion Control Blankets:

Erosion control blanket shall be SC150 by North American Green or approved equal.

Erosion control blankets shall be installed per the manufacturer's recommendations.

b. Straw Wattles:

Shall be manufactured from rice straw and be wrapped in tubular plastic netting. The netting shall have a strand thickness of at least .030 inch, and be composed of UV inhibition polyethylene and ethyl vinyl acetate. Wattles shall be 8 to 10 inches in diameter, 25 ft. in length, and weigh a minimum of 35 lbs. Wattles shall be installed in accordance with manufacturer's recommended specifications, which includes but is not limited to: trenched in on contour at the specified internal, secured by wood stakes, and placed and spaced as noted on plans. The ends of adjacent wattles shall be abutted together.

c. Chevrons:

V-type interception ditches or chevrons shall be installed at twenty-five (25) foot intervals. The ditches shall be twelve (12) inches deep and shall be skewed in a down slope direction at 45^0 on each side of the centerline of the easement (i.e. the higher end of the skewed ditch shall be at the centerline and the lower ends of the ditch shall be at the two edges of the easements).

END OF SECTION

NORTH MARIN WATER DISTRICT

STANDARD SPECIFICATIONS

SECTION 02223 TRENCHING, EXCAVATION, BACKFILLING, AND COMPACTING

PART 1 GENERAL

1.01 DESCRIPTION

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

1.02 REFERENCE STANDARDS

The publications listed below form part of this specification to the extent referenced and are referred to in the text by the basic designation only. Reference shall be made to the latest edition of said standards unless otherwise called for.

ASTM C 131 -	Test Method for Resistance to Degradation of Small-Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine
ASTM C 150 -	Portland Cement
ASTM D 75 -	Practice for Sampling Aggregates
ASTM D 1556 -	Test Method for Density and Unit Weight of Soil in Place by the Sand-Cone Method
ASTM D 1557 -	Test Method for Moisture-Density Relations of Soils Using a Modified Effort
ASTM D 2419 -	Test Method for Sand Equivalent Values of Soil and Fine Aggregate
ASTM D 2922 -	Test Method for Density of Soil in Place by Nuclear Methods (Shallow Depth)
ASTM D 3017 -	Test Method for Water Content of Soil and Rock in Place by Nuclear Methods
ASTM D 3776 -	Test Method for Mass Per Unit Area (Weight) of Woven Fabric
ASTM D 4253 -	Test Methods for Maximum Index Density and unit weight of Soils Using a Vibratory Plate
ASTM D 4254 -	Test Methods for Minimum Index Density and Unit Weight of Soils and Calculation of Relative Density
ASTM D 4632 -	Test Method for Grab Breaking Load and Elongation of Geotextiles
ASTM D 4751 -	Test Method for Determining the Apparent Opening Size of a Geotextile
CAL-OSHA -	Title 8 General Industry Safety Orders
STANDARD SPECIFICATIONS -	State of California Department of Transportation

1.03 RELATED WORK SPECIFIED ELSEWHERE

NMWD Standard Drawings
NMWD Standard Specifications 01000, 02200, 02202, 02700, 03461, 03462, 15000, 15044, 15056, 15061, 15064, and 15065

1.04 GEOTECHNICAL TESTING

The Developer or Contractor shall engage the services of a geotechnical engineering firm or individual licensed in the State of California to monitor soil conditions during earthwork, trenching, bedding, backfill and compaction operations. Sampling and testing procedures shall be performed in accordance with the Reference Standards and as follows:

A. The soils technician shall be present at the site during all backfill and compaction operations. Failure to have the soils technician present will subject such operations to rejection.

B. Density and optimum moisture content of soil shall be determined by the use of the sand cone method, ASTM D 1556, or nuclear density gauge method, ASTM D 2922 & D 3017. Since the composition of the pipe and the walls of the trench can have an effect on the nuclear density gauge output, any tests performed at depths greater than 1 foot below the ground surface shall be performed with a gauge calibrated within the trench at the test depth.

C. Determine laboratory moisture-density relations of existing soil by ASTM D 1557.

D. Determine the relative density of cohesionless soils by ASTM D 4253, ASTM D 4254 AND D4564.

E. Sample backfill material by ASTM D 75.

F. Express "relative compaction" as a percentage of the ratio of the in-place dry density to the laboratory maximum dry density.

A report of all soils tests performed shall be stamped and signed by the soils firm or individual and shall be submitted by the Developer or Contractor prior to the filing of the Notice of Completion by the District. The report shall document the sampling and testing of materials, the location and results of all tests performed, and shall certify that materials and work are in compliance with this specification.

1.05 PIPE ZONE

The pipe zone includes the full width of the trench from four (4) inches below the bottom of the pipe to twelve (12) inches above the top of the pipe and extends into manhole or vault excavations to the point of connection to or penetration of such structure.

1.06 TRENCH ZONE

The trench zone includes the portion of the trench from the top of the pipe zone to the bottom of the pavement zone in paved areas, or to the existing surface in unpaved areas, and extends into manhole or vault excavations above the pipe zone.

1.07 PAVEMENT ZONE

The pavement zone includes the concrete or asphalt concrete pavement and aggregate base section placed over the trench zone and extends into manhole or vault excavations above the trench zone.

1.08 PROTECTION OF EXISTING UTILITIES AND FACILITIES

The Contractor shall be responsible for the care and protection of all existing utilities, facilities and structures that may be encountered in or near the area of the work in accordance with Section 01000.

1.09 PROTECTION OF EXISTING LANDSCAPING

The Contractor shall be responsible for the protection of all the trees, shrubs, fences, and other landscape items adjacent to or within the work area in accordance with Section 01000.

1.10 ACCESS

The Contractor shall provide continuous, unobstructed access to all driveways, water valves, hydrants, or other property or facilities within or adjacent to the work areas.

1.11 SAFETY

A. Protection of workers within trenches shall be as required by the California Labor Code and in accordance with Section 01000.

B. All excavations shall be performed in a safe manner and shall be protected and supported in accordance with CAL-OSHA regulations.

C. Barriers and traffic delineators shall be placed in accordance with the requirements of the agency having jurisdiction.

1.12 BLASTING

Blasting for excavation shall not be performed without the written permission of the District. Submit verification that procedures and methods of blasting shall conform to all Federal, State and local laws and ordinances to District for approval prior to issuance of written permission.

1.13 PIPE JACKING

Pipe jacking may be permitted in accordance with Section 15125. District approval is required in advance of such operations.

1.14 EXCESS EXCAVATED MATERIAL

A. The Contractor shall remove and legally dispose of all excess excavated material and demolition debris.

B. It is the intent of these specifications that all surplus material shall be legally disposed of by the Contractor. Before acceptance of the work by District, the Contractor shall provide the District with written releases signed by all property owners with whom the Contractor has entered into agreements for disposing of excess excavated material, absolving the District from any liability connected therewith.

1.15 CHANGES IN LINE AND GRADE

In the event obstructions not shown on the plans are encountered during the progress of the work, and which will require alterations to the plans, the Engineer shall have the authority to change the plans and order the necessary deviation from the line and grade, in accordance with Section 01000. The Contractor shall not deviate from the specified line and grade without prior written approval by the District.

1.16 HYDROSTATIC TESTING

Pre-testing of the piping system may be performed for the Contractor's convenience at any time. However, the final hydrostatic pressure test shall be as described in Section 15044.

PART 2 MATERIALS

2.01 GENERAL

The Contractor shall furnish backfill material as specified below. All materials used in and above the pipe zone shall be capable of attaining the required relative density.

2.02 PIPE ZONE GRANULAR MATERIAL

Granular Material shall be used within the Pipe Zone. Suitable material for pipe zone granular material shall have an ASTM 2487 soil classification of SW, SM, GW, or GM.

Material shall have a sand equivalent value of not less than 30 per ASTM D 2419, a coefficient of uniformity of 3 or greater.

Pipe zone granular material shall be certified to contain less than 1% asbestos by weight or volume and shall conform to the following gradation and requirements:

U. S. Standard Sieve Size	Percent Passing By Weight
¾ inch	100
½ inch	90-100
3/8 inch	80-100
No. 4	50-80
No. 30	10-35
No 200	0-5

Test	Test Method	Requirement
Percentage Wear	ASTM C 131	----
100 Revolutions	----	15 Maximum
500 Revolutions	----	52 Maximum

Test	Test Method	Requirement
Plasticity Index	ASTM D4318	NP-10
Liquid Limit	ASTM D4318	Less than 20
Min. pH	EPA 9040	Greater than 6
Sat. Soil Resistivity	SM 2510	Greater than 3,000(Ohm-cm)
Chloride Concentration	EPA 300	Less than 200 mg/kg

2.04 TRENCH ZONE MATERIAL

Suitable material for trench zone (above the bedding material and below any pavement section) shall have an ASTM 2487 soil classification of SW, SM, SC, GW, GM, or GC and shall be free of organic matter and conform to the following gradation and requirements.

U. S. Standard Sieve Size	Percent Passing By Weight
3 inch	100
1 inch	70-100
3/8 inch	40-100
No. 4	20-90
No. 30	5-50
No. 200	0-40

Test	Test Method	Requirement
Plasticity Index	ASTM D4318	Less than 20
Liquid Limit	ASTM D4318	Less than 40
R-value	Caltrans 301	30 minimum

Imported trench zone material shall be Caltrans Class 1, 2 or 3 Aggregate Subbase or Class 2 Aggregate Base per Sections 25 and 26 of the latest version of Caltran's Standard Specifications.

Excavated spoil from the trenches may be suitable for the trench zone (above the bedding material and below any pavement section) provided it meets the above criteria and approved by the District Engineer.

2.05 SAND-CEMENT SLURRY (CONTROLLED DENSITY, CDF)

Sand-cement slurry shall be Shamrock Mix No. 1503 consisting of two sacks, 188 pounds of Portland cement per cubic yard of sand and sufficient moisture for workability. District approval is required for use of sand-cement slurry as a backfill material.

2.06 TRENCH PLUGS

Trench plugs consisting of compacted impermeable material approved by District Engineer or sand-cement slurry shall be installed on piping systems that are backfilled with crushed rock or placed on slopes steeper than 4:1 (horizontal:vertical).

2.07 ENGINEERING FABRICS

All engineering fabrics used for trench backfill operations shall be in accordance with Section 88 of Caltran's Standard Specifications.

PART 3 EXECUTION

3.01 CLEARING AND GRUBBING

A. Areas where work is to be performed shall be cleared of all trees, shrubs, rubbish, and other objectionable material of any kind, which, if left in place, would interfere with the proper performance or completion of the contemplated work, would impair its subsequent use, or would form obstructions therein.

B. Organic material from clearing and grubbing operations will not be incorporated in the trench backfill and shall be removed from the project site or retained and incorporated into the topsoil.

3.02 PAVEMENT, CURB, AND SIDEWALK REMOVAL

Bituminous or concrete pavements, curbs, and sidewalks shall be removed and replaced in accordance with the requirements of the agency having jurisdiction.

3.03 DEWATERING

A. The Contractor shall provide and maintain at all times during construction ample means and devices to promptly remove and dispose of all water from any source entering excavations or other parts of the work. Dewatering shall be performed by methods that will ensure a dry excavation and preservation of the final lines and grades of the bottoms of excavations. Dewatering methods may include well points, sump points, suitable rock or gravel placed as pipe bedding for drainage and pumping, temporary pipelines, or other means, all subject to the approval of the District. The cost of all dewatering activities shall be borne by the Contractor.

B. Sewer systems shall not be used as drains for dewatering trenches or excavations, nor for disposal of collected or accumulated groundwater, without the approval of the agency of jurisdiction.

C. Concrete shall not be poured in water, nor shall water be allowed to rise around concrete or mortar until it has set at least four hours.

D. The Contractor is responsible for meeting all Federal, State, and local laws, rules and regulations regarding the treatment and disposal of water from dewatering operations at the construction site.

3.04 SHORING AND SHIELDING

A. The Contractor's design and installation of shoring shall be consistent with the rules, orders, and regulations of CAL-OSHA. Unless otherwise specified, Type “C” soils should be assumed for shoring design.

B. Excavations shall be shored, sheeted, and supported such that the walls of the excavation will not slide or settle and all existing improvements of any kind, either on public or private property, will be fully protected from damage.

C. The sheeting and shoring shall be arranged so as not to place any stress on portions of the completed work until the general construction has proceeded far enough to provide ample strength.

D. Care shall be exercised in the moving or removal of trench shields, sheeting, and shoring to prevent the caving or collapse of the excavation faces being supported.

3.05 CORRECTION OF OVEREXCAVATION

Overexcavations shall be corrected by backfilling with approved pipe zone or trench zone material, compacted to 90% relative compaction, as directed by the District.

3.06 FOUNDATION STABILIZATION

A. When unsuitable soil materials are encountered, the unsuitable material shall be removed to the depth determined necessary in the field by the Soils Engineer, and as acceptable to the District. The sub-grade shall be restored with compacted pipe zone, trench zone material or crushed rock as recommended by the Soils Engineer. Place the appropriate bedding or base material on this restored foundation.

B. When rock encroachment is encountered, the rock shall be removed to a point below the intended trench or excavation sub-grade as determined necessary in the field by the Soils Engineer, and as acceptable to the District. The sub-grade shall be restored with compacted pipe zone or trench zone material as recommended by the Soils Engineer. Place the appropriate bedding or base material on this restored foundation.

C. When excessively wet, soft, spongy, or similarly unstable material is encountered at the surface upon which the bedding or base material is to be placed, the unsuitable material shall be removed to the depth determined necessary in the field by the Soils Engineer, and as acceptable to the District. Restore the trench with crushed rock enclosed in filter fabric or rock slope protection fabric as directed by the Engineer. Larger size rocks, up to six (6) inches with appropriate gradation, shall be used if recommended by the Soils Engineer. Place the appropriate bedding or base material on this restored foundation.

3.07 TRENCH EXCAVATION AND PLACEMENT OF BEDDING

A. Excavate the trench to the lines and grades shown on the drawings with allowance for four (4) inches of pipe bedding material. The trench section shall be as shown on the Standard Drawings.

B. The maximum length of open trench shall be five hundred (500) feet except by permission of the District. The distance is the collective length at any location, including open excavation and pipe laying, which has not been backfilled to the elevation of the surrounding grade.

C. Trench walls shall be sloped or shored per the requirements of CAL-OSHA.

D. The trench bottom shall be graded to provide a smooth, firm, and stable foundation that is free from rocks and other obstructions.

E. Place the specified thickness of bedding material over the full width of the trench. Grade the top of the pipe base ahead of the pipe laying to provide a firm, uniform support along the full length of pipe.

F. Excavate bell holes at each joint to permit proper assembly and inspection of the entire joint.

G. Trenches for main pipelines and all appurtenances shall be backfilled with the materials and methods as specified for the Pipe Zone, Trench Zone and Pavement Zone.

H. Trench widths shall be in accordance with the Standard Drawings.

I. Trench depth shall be as required to install pipelines in accordance with the Approved Plans and these Standard Specifications. Unless shown otherwise in the Approved Plans, the minimum cover for pipelines shall be as follows:

Pipeline Application	Minimum Cover Required
Potable Water	36 inches
Recycled Water	48 inches
Sewer	60 inches

J. Excavation and backfill of conduit for telemetring cables shall meet the requirements of this specification.

K. Final street sub-grade shall be established prior to the excavation of pipeline trenches. Minimum cover above pipe shall be 24 inches for hydrotesting.

3.08 MANHOLE AND VAULTS

A. The Contractor shall prepare an excavation large enough to accommodate the structure and permit grouting of openings and backfilling operations. The walls of the excavation shall be sloped or shored per the requirements of CAL-OSHA. Assume Type “C” soils unless otherwise specified.

B. Manholes and vaults shall be placed at the location and elevation shown on the plans, on undisturbed soils and six (6) inches of compacted crushed rock base.

C. Manhole and vault excavations shall be backfilled with the materials and methods as specified for the Pipe Zone, Trench Zone and Pavement Zone.

3.09 COMPACTION REQUIREMENTS

A. Compaction shall be accomplished by mechanical means. Consolidation by water settling methods such as jetting or flooding is prohibited.

B. If the backfill fails to meet the specified relative compaction requirements; the backfill shall be reworked until the requirements are met. All necessary excavations for density tests shall be made as directed by the Soils Engineer, and as acceptable to the Engineer. The requirements of the City or County having jurisdiction shall prevail on all public roads.

C. Compaction tests shall be performed at random depths, and at random intervals not to exceed one hundred fifty (150) feet, as directed by the Soils Engineer or District.

D. Relative compaction shall be determined by the impact or field compaction test made in accordance with ASTM D 1557, D2922 and D3017.

E. Unless otherwise shown on the drawings or otherwise described in the specifications for the particular type of pipe installed, relative compaction in pipe trenches shall be as follows:

1. Pipe zone - 90% relative compaction.

2. Trench zone - 90% relative compaction. In paved areas, upper twelve (12) inches 95% relative compaction.

3. Structural section in paved areas - per City or County requirements, 95% minimum.

4. Imported Granular Material for over excavation or foundation stabilization - 90% relative density.

F. All excavations are subject to compaction tests.

3.10 TRENCH PLUGS

Trench plugs shall be installed at two hundred (200) feet intervals along the entire length of piping systems as specified in Section 2.06 or as shown on the plans. For trench plugs required on sloping terrain, trench plugs shall be placed at every twenty-five (25) feet in vertical elevation. Trench plugs shall be ten (10) feet in length and shall encompass the entire pipe zone. Additional trench plugs may be required as directed by the Engineer.

3.11 PIPE ZONE BACKFILL

A. Care shall be taken in placing the pipe zone material simultaneously around the main pipeline and appurtenance pipes so that the pipe barrel is completely supported and that no voids or uncompacted areas are left beneath the pipe or on the sides of the pipe. Care shall be taken to place material simultaneously on both sides of the pipe to prevent lateral movement. This area shall be mechanically compacted to attain 90% relative density. Care shall be taken when compacting appurtenance laterals two (2) inches and smaller to prevent the crushing or denting of the copper lateral. Additional lifts of twelve (12) inches or less thickness may be required on sixteen (16) inches or larger diameter pipe to attain complete support of the haunch area. Soils tests may be taken on this layer of backfill.

B. After the spring line backfill has been approved by the Soils Engineer, backfill of the remainder of the Pipe Zone may proceed. Do not drop sharp, heavy pieces of material directly onto the pipe or the tamped material around the pipe.

C. Place and compact the pipe zone material at a maximum of eight (8) inch lifts. Compact all material placed in the Pipe Zone by mechanical methods. Field density tests shall be taken on this layer of backfill.

D. The use of a backhoe-mounted compaction wheel is prohibited within the pipe zone to twelve (12) inches above the top of the pipe.

E. Under no circumstances shall consolidation by water settling or water-setting methods (i.e. jetting, diking, etc.) be permitted.

3.12 TRENCH ZONE BACKFILL

A. After the Pipe Zone material has been placed, compacted, approved by the Soil Engineer and accepted by the District, backfill in the Trench Zone may proceed.

B. Compaction using vibratory equipment, tamping rollers, pneumatic tire rollers, or other mechanical tampers shall be performed with the type and size of equipment necessary to accomplish the work. The backfill shall be placed in horizontal layers of such depths (not to exceed eighteen (18) inches) as are considered proper for the type of compacting equipment being used in relation to the backfill material being placed. Each layer shall be evenly spread, properly moistened, and compacted to the specified relative density. The Contractor shall repair or replace any pipe, fitting, manhole, or structure damaged by the installation operations as directed by the District.

3.13 PAVEMENT ZONE BACKFILL AND RESTORATION

A. After the Trench Zone material has been placed, compacted, approved by the Soil Engineer, and accepted by the District; backfill in the Pavement Zone may proceed as necessary in accordance with the requirements of the agency having jurisdiction.

B. Replace bituminous and concrete pavement, curbs, and sidewalks removed or damaged during construction in accordance with the requirements of the agency having jurisdiction.

C. Unpaved areas disturbed in any way by trenching and backfilling operations shall be restored to their original condition by the Contractor.

END OF SECTION

NORTH MARIN WATER DISTRICT

STANDARD SPECIFICATIONS

SECTION 02700 HOT MIX ASPHALT PAVING

PART 1 - GENERAL

1.1 DESCRIPTION

A. This Standard Specification applies to District Capital Improvement Projects, repairs to District facilities located within public right-of-way, and maintenance of District-owned facilities.

B. Work included: Work covered in this section consists of performing all work and operations necessary for producing and placing hot mix asphalt (HMA) by mixing aggregate and asphalt binder at a mixing plant and spreading and compacting the HMA mixture for new roadways as well as patching of existing. The section also includes requirements for pavement striping, markings and markers.

C. General intent: All roadway surfaces shall be replaced in a manner which will result in a surface equal to or better than that existing prior to the trenching operations.

D. Section Includes:

1. Quality Control Testing.
2. Acceptance Testing.
3. Asphalt Binder and Tack Coat.
4. Aggregate Materials.
5. Hot Mix Asphalt.
6. Traffic Paint and Thermoplastic Materials
7. Pavement Markers and Adhesives

E. HMA shall be provided in accordance with the Standard HMA construction process and conform to Section 39 of the 2018 Caltrans' Standard Specifications and as detailed in this specification unless modified by a Local Agency Having Jurisdiction under requirements of an Encroachment Permit.

F. Related Work described elsewhere:

1. Section 02200 - Earthwork
2. Section 02223 - Trench Excavation and Backfill

G. References

1. CALIFORNIA TEST METHODS (CT)

a. CT 125 (2010) Sampling Highway Materials and Products Used in the Roadway Structural Sections.

b. CT 202 (2010) Method of Test for Sieve Analysis of Fine and Coarse Aggregates.
c. CT 205 (2010) Method of Test for Percentage of Crushed Particles.
d. CT 211 (2010) Method of Test for Abrasion of Coarse Aggregate by use of the Los Angeles Abrasion Testing Machine.
e. CT 217 (2008) Method of Test for Sand Equivalent.
f. CT 226 (2010) Method of Test for Moisture Content of Soils and Aggregates by Oven Drying.
g. CT 308 (2010) Determining Bulk Specific Gravity and Density of Compacted Hot Mix Asphalt.
h. CT 309 (2010) Theoretical Maximum Specific Gravity and Density of Bituminous Paving Mixtures.
i. CT 366 (2000) Stabilometer Value.
j. CT 367 (1999) Recommending Optimum Bitumen Content (OBC).
k. CT 370 (2002) Determining Moisture Content of Asphalt Mixtures or Mineral Aggregate Using Microwave Ovens.
l. CT 371 (2003) Resistance of Compacted Bituminous Mixture to Moisture Induced Damage.
m. CT 375 (2004) Determining the In-Place Density and Relative Compaction of AC Pavement.
n. CT 379 (2000) Determining Asphalt Content of Bituminous Mixtures (Troxler Nuclear Gauge Model 3241).

2. State of California, Business and Transportation Agency, Department of Transportation (Caltrans), Standard Specifications, latest edition excluding measurement and payment items.

3. Uniform Construction Standards, All Cities and County of Marin, 2018

4. City of Novato Design and Construction Standards (Interim), 2014

1.2 SUBMITTALS

A. Submit all product data, laboratory test results, material source information, and certificates of compliance listed in this Section under a single submittal cover for review. Incomplete submittals will not be reviewed.

B. The Contractor shall provide the Engineer with the following information a minimum of 10 days prior to commencing the Work:

1. Hot mix asphalt job mix formula (JMF) in accordance with Caltrans' Standard Specifications.
   Proposed JMF, include percentage of reclaimed asphalt pavement (RAP)
   a. Mix design documentation, data and aggregate quality within 12 months of submittal.

2. Written confirmation from the supplier that the JMF to be supplied meets all specified requirements.

C. Tack Coat

1. Submit asphalt binder tack coat and asphaltic emulsion tack coat.

1.3 TESTING DURING PLACEMENT

A. In place density tests per CT 379 Nuclear Gage field test shall be performed during HMA operations by Independent Assurance Tester to meet compaction requirements per Standard Specifications. The frequency of testing shall be in accordance with CT 379.

B. Should any test specified in this Section fail to meet density requirements, Independent Assurance Tester shall take density core samples every 500 feet of paved roadway per Section 39 of Standard Specifications to verify density results.

1.4 PRODUCT HANDLING

A. All products described herein shall be handled in conformance to the applicable provisions of the Standard Specifications.

1.5 PROJECT CONDITIONS

A. Weather Limitations:
1. No HMA shall be placed when weather conditions prevent the proper handling, finishing, or compaction of the mixtures.
2. Do not apply when underlying surface is muddy, frozen or wet.
3. Do not place tack coat when temperature is below 45º F.
4. Do not place hot mix asphalt when air temperature is below 45º F and surface temperature is below 50º F.

PART 2 - PRODUCTS

2.1 TACK COAT

A. Tack Coat, Grade PG 64-16, conforming to the provisions of Sections 39 and 92 of the Standard Specifications shall be used between layers of each lift of HMA, and on curbs, gutters and construction joints.

2.2 ASPHALT BINDER

A. Asphalt binder, Grade PG 64-16, conforming to the provisions of Sections 39 and 92 of the Standard Specifications.

2.3 AGGREGATE

A. Aggregate shall be clean and free from deleterious substances and shall meet the gradation and quality for 1/2-inch HMA Type A in the Caltrans' Standard Specifications.

2.4 HOT MIX ASPHALT

A. Hot Mix Asphalt shall be 1/2-inch HMA Type A and conform to the provisions of Section 39 of the Standard Specifications.

B. HMA batch plant shall be Department-qualified under the Department's Materials Plant Quality Program of the Standard Specifications.

C. Reclaimed asphalt pavement shall be acceptable in accordance with the Standard Specifications not exceeding 15.0 percent of the aggregate blend.

2.5 PAVEMENT MARKINGS AND TRAFFIC STRIPES

A. All markings and striping shall be thermoplastic in accordance with Caltrans Section 84-2.

PART 3 - EXECUTION

3.1 PROTECTION OF EXISTING STREET SURFACE

A. During the entire construction period, the Contractor shall take care to protect existing pavement or sealed surfaces. Backhoes and trenchers must have street pads. Grossers or metal tipped pads will not be allowed. Surfaces scarred by cleanup or excavation equipment shall be repaired in a manner satisfactory to the Engineer. Any and all damage caused by the Contractor's operations to existing roads and streets shall be repaired by the Contractor to at least the original condition and to the satisfaction of the Engineer, at no additional cost to the Owner.

B. If pavement is damaged (excessive loading, grouser marking, scarring/scraping of pavement, etc.) in adjacent lanes, a full lane width grinding and overlay will be required as directed by the Owner. If pavement is damaged due to excessive loading near the trench wall causing openings in the pavement, full depth structural section replacement will be required as directed by the Owner. If pavement restoration comes to within 4 feet from the edge of the pavement or lip of gutter/curb, pavement shall be replaced to the lip of gutter/curb.

3.2 PAVING REMOVAL

A. Saw-cutting shall be required for all roads. See Section 02223 "Trench Excavation and Backfill" for paving removal requirements.

B. Subgrade shall be compacted to a firm and unyielding condition prior to placement of HMA.

C. Clean and dry subgrade area prior to commencing with placement of HMA.

3.3 AGGREGATE BASE

A. Aggregate base shall be spread and compacted according to Specification Section 02300 and Section 26 of the Standard Specifications. Compact to 95 percent relative compaction.

3.4 TACK COAT

A. Ensure the area is clean and dry. All material accumulations which would interfere with the adhesion of the tack coat or with the placing and performance of the HMA shall be removed, including dust, loose aggregate, soil, leaves, and pieces or lumps of other foreign material deposited on the surface.

B. A tack coat shall be applied to existing pavement including planed surfaces, between HMA layers, and to vertical surfaces of curbs, gutters and construction joints at the minimum residual rates specified in Section 39-1.09 C “Tack Coat” of the Standard Specifications.

C. Before placing HMA, a tack coat shall be furnished and applied uniformly to contact surfaces of all cold pavement joints, curbs, gutters, pavement reinforcing fabric and all existing pavement to be surfaced in conformance with Section 39 of the Standard Specifications.

D. Tack coat shall be applied to any course in advance of spreading the next course unless the surface temperature is at least 140 °F.

E. Hot mix asphalt shall not be placed until tack coat has cured.

F. Immediately in advance of placing HMA, apply additional tack coat to damaged areas or where loose or extraneous material is removed.

G. Close areas receiving tack coat to traffic. Do not track tack coat onto pavement surfaces beyond the job site.

H. The cost of applying tack coat will be considered included in the Contract Price and no additional compensation will be allowed therefore.

3.5 TRANSPORTING HOT MIX ASPHALT

A. From mixing site in trucks having tight, clean compartments.

B. Coat hauling compartments with lime-water mixture to prevent sticking.

C. Elevate and drain compartment of excess solution before loading mix.

D. Provide covers over asphalt concrete mixture to protect from weather and to prevent loss of heat.

E. During periods of cold weather or for long distance deliveries, pre-insulation around entire truck bed surfaces.

F. Do not use petroleum products such as kerosene or diesel fuel to release HMA from trucks, spreaders, or compactors.

3.6 HOT MIX ASPHALT

A. HMA surfacing shall conform to the provisions of Section 39 of the Standard Specifications. Placing HMA shall be done under suitable weather conditions for such operations. Rain, snow or other inclement weather will be cause for discontinuing paving Work. The Engineer shall have the authority for determining whether weather conditions are sufficient cause to postpone work.

3.7 SPREADING AND COMPACTING

A. Spreading and compacting shall be performed in accordance with Section 39-1.10 and Section 2.01C of the Standard Specifications.

B. HMA shall be transferred from the trucks into the hopper of the paving machine. Any equipment used to transfer asphalt concrete to the paving machine shall not exceed the load capacity of any surface it is driven over and, therefore, shall not produce rutting or pumping of the existing roadway surface or newly placed HMA at any time. No trucks or other rubber-tired construction equipment are allowed on the subgrade at any time except when proofrolling in the presence of the Engineer or during the placement of HMA. No trucks or other rubber-tired construction equipment are allowed on newly placed HMA until the day after the HMA is placed.

C. Longitudinal joints in the top layer must match specified lane edges shown on the striping plans. Longitudinal joints in lower HMA layers shall be offset at least 0.5 feet from each side of the specified lane edges.

D. Finish rolling shall be completed before pavement surface temperature is below 150 degrees F.

E. Traffic shall not be allowed on HMA until mid-depth temperature is below 160 degrees F and the pavement surface temperature is below 140 degrees F.

3.8 SMOOTHNESS AND DRAINAGE

A. Verify smoothness and drainage using a 10-foot straight edge. Any low spots deeper than 1/4 inch shall be corrected by sawcutting, removing and replacing HMA a sufficient distance from puddles and birdbaths to correct them, or by grinding. All smoothness and drainage corrections to HMA shall be at the Contractor’s expense and to the satisfaction of the Engineer.

3.9 PAVEMENT MARKING AND TRAFFIC STRIPES

A. Prepare pavement area to be marked or striped including layout with stenciling or preformed markings.

B. Apply thermoplastic per Caltrans Section 84-2.03.

3.10 STREET MAINTENANCE

A. Until the permanent pavement is placed, the base rock or temporary asphaltic mix at the surface of the trench shall be maintained at all times at a grade level with the adjacent street. Continuous inspection and maintenance of the trench area will be required. Lights and barriers shall be maintained on all Work that is not safe for travel until such time as is made safe.

3.11 CONTRACTOR'S RESPONSIBILITY

A. Settlement of replaced pavement over trenches within the warranty period shall be considered the result of improper or inadequate compaction of the subbase or base materials. The Contractor shall promptly repair all pavement deficiencies noted during the warranty period.

B. For DISTRICT On-call Work Only: HMA work shall be completed within 30 days of a District-issued Task Order, Work Order or Purchase Order unless weather conditions require a longer period or otherwise approved by the District.

END OF SECTION 02700

NORTH MARIN WATER DISTRICT

STANDARD SPECIFICATIONS

SECTION 03300 CAST-IN-PLACE CONCRETE

PART 1 - GENERAL

1.01 SUMMARY

A. Section includes cast-in-place concrete for the following:

1. New Tank or Pump Station Foundations.
2. Equipment Pads
3. Thrust Blocks
4. Public Right-of-Way: sidewalk, curb and gutter

B. Related Sections (Capital Improvement Projects only):

1. Section 03100 – Concrete Formwork.

2. Section 03200 – Concrete Reinforcement.

3. Section 03600 – Grout

1.02 REFERENCE SPECIFICATIONS, CODES, AND STANDARDS

A. Local Codes and Standards:
1. Uniform Construction Standards, All Cities and County of Marin, latest edition.
2. City of Novato Design and Construction Standards 2014, or latest version.

B. Commercial Standards:

ACI 301	Specifications for Structural Concrete.
ACI 305	Hot Weather Concreting.
ACI 318	Building Code Requirements for Structural Concrete.
ASTM C33	Standard Specification for Concrete Aggregates.
ASTM C94	Standard Specification for Ready-Mixed Concrete.
ASTM C150	Standard Specification for Portland Cement.
ASTM C260	Standard Specification for Air-Entraining Admixtures for Concrete.

ASTM C494	Standard Specification for Chemical Admixtures for Concrete.
ASTM C595	Standard Specification for Blended Hydraulic Cements.
ASTM C1017	Standard Specification for Chemical Admixtures for use in Producing Flowing Concrete.
ASTM C1107	Standard Specification for Packaged Dry, Hydraulic-Cement Grout (Nonshrink).
ASTM D994	Standard Specification for Preformed Expansion Joint Filler for Concrete (Bituminous Type).
ASTM D1190	Standard Specification for Concrete Joint Sealer Hot-Applied Elastic Type.
ASTM E1643	Standard Practice for Installation of Water Vapor Retarders Used in Contact with Earth or Granular Fill under Concrete Slabs.
ASTM E1745	Standard Specification for Plastic Water Vapor Retarders Used in Contact with Soil or Granular Fill under Concrete Slabs.

1.03 SUBMITTALS

A. Section 01300 – Submittals for Requirements for Submittal.

B. **Mix Designs**: Prior to beginning the WORK, the CONTRACTOR shall submit to the DISTRICT ENGINEER, for review, preliminary concrete mix designs that show the proportions and gradations of all materials proposed for each class and type of concrete specified herein. Mix designs shall satisfy the requirements of ACI 318. The mix designs shall be certified by an independent testing laboratory acceptable to the DISTRICT ENGINEER and shall demonstrate compliance with ACI 318 that the average strength is sufficient to achieve the minimum strength specified. All costs related to such mix design shall be borne by the CONTRACTOR. This Specification sets the minimum requirements for mix design that meets all requirements specified herein.

C. **Certified Delivery Tickets**: Where ready-mix concrete is used, the CONTRACTOR shall furnish certified weighmaster delivery tickets at the time of delivery of each load of concrete. Each certificate shall show the public weighmaster's signature, and the total quantities by weight of cement, sand, each class of aggregate, admixtures, and the amounts of water in the aggregate and added at the batching plant, as well as the amount of water allowed to be added at the site for the specific design mix. Each certificate shall, in addition, state the mix number, total yield in cubic yards, and the time of day to the nearest minute, corresponding to the times when the batch was dispatched, when it left the plant, when it arrived at the job, the time that unloading began, and the time that unloading was finished.

D. When a water-reducing admixture is to be used, the CONTRACTOR shall furnish mix designs for concrete both with and without the admixture.

1.04 QUALITY ASSURANCE

A. Unless otherwise specified, all formwork shall conform to ACI 347.

B. The cost of all laboratory tests on cement, aggregates, and concrete will be borne by the DISTRICT. However, the CONTRACTOR shall be charged for the cost of any additional tests and investigation on WORK performed that does not meet the requirements of the Contract Documents.

C. Concrete for testing shall be supplied by the CONTRACTOR at no additional cost to the DISTRICT, and the CONTRACTOR shall provide assistance to the DISTRICT ENGINEER in obtaining samples and disposing and cleaning up excess material. Concrete samples for slump, air content, and test cylinders will be taken at the placement (discharge) end of the line.

D. Field Compression Tests:

1. Compression test specimens will be taken during construction from the first placement of each class of concrete specified herein and at intervals thereafter as selected by the DISTRICT ENGINEER to ensure continued compliance with the Contract Documents. Each set of test specimens will be a minimum of four (4) cylinders.

2. Compression test specimens for concrete shall be made in accordance with ASTM C 31, Section 9.2. Specimens shall be 6-inch diameter by 12-inch high cylinders.

3. Compression tests shall be performed in accordance with ASTM C 39. One (1) test cylinder will be tested at seven (7) days and two (2) test cylinders will be tested at twenty-eight (28) days. The remaining cylinder will be held to verify test results, if needed.

4. For Thrust Blocks or equipment pads, the need for compressions test will be at the discretion of the District.

5. For Public Right-of-Way work including sidewalk, curb and gutter, the need for compression testing shall be at the discretion of the DISTRICT or the agency with jurisdiction's encroachment permit requirements (City of Novato, County of Marin, or Caltrans).

E. Evaluation and Acceptance of Concrete

1. Evaluation and acceptance of the compressive strength of concrete shall be according to the requirements of ACI 318, Chapter 5, "Concrete Quality," and as specified herein.

2. A statistical analysis of compression test results will be performed according to the requirements of ACI 214. The standard deviation of the test results shall not exceed 640 psi.

3. If any concrete fails to meet these requirements, immediate corrective action shall be taken to increase the compressive strength for all subsequent batches of the type of concrete affected.

4. When the standard deviation of the test results exceeds 640 psi, the average strength for which the mix is designed shall be increased by an amount necessary to satisfy the statistical requirement that the probability of any test being more than 500 psi below or the average of any three (3) consecutive tests being below the specified compressive strength is 1 in 100. The required average strength shall be calculated by Criterion No. 3 of ACI 214 using the actual standard of deviation.

5. All concrete that fails to meet the ACI requirements and these Contract Documents is subject to removal and replacement at the expense of the CONTRACTOR.

PART 2- PRODUCTS

2.01 CONCRETE MATERIALS

A. Cement: ASTM C150, Type I Portland type.

B. Fine and Coarse Aggregates: ASTM C33.

C. Water: Clean and not detrimental to concrete.

2.02 ADMIXTURES

A. Furnish materials in accordance with local standards.

B. Air Entrainment: ASTM C260

C. Chemical: ASTM C494 Type A – Water Reducing, Type B – Retarding

D. Fly Ash: ASTM C618 Class F.

2.03 ACCESSORIES

Non-Shrink Grout: ASTM C1107, Grade A

2.04 JOINT DEVICES AND FILLER MATERIALS

A. Joint Filler: ASTM D1751.

B. Expansion and Contraction Joint Devices: ASTM B221.

2.05 EPOXY ADHESIVES

A. Epoxy adhesives for bonding freshly mixed, plastic concrete to hardened concrete shall be Sikadur 32 Hi-Mod Epoxy Adhesive, as manufactured by Sika Chemical Corporation; Concresive Liquid (LPL), as manufactured by Master

Builders; BurkEpoxy mV, as manufactured by the Burke Company, or approved equal.

2.06 ANCHOR ROD EPOXY ADHESIVE

A. Epoxy adhesives for installing anchor rods in existing concrete shall be Sikadur AnchorFix-4 structural epoxy, as manufactured by Sika Chemical Corporation; or approved equal.

2.07 CONCRETE MIX

A. Mix concrete in accordance with ACI 301. Deliver concrete in accordance with ASTM C94.

B. Select proportions for normal weight concrete in accordance with ACI 301 trial mixtures.

C. Hand mixed concrete materials type and proportions shall be submitted and approved by the DISTRICT ENGINEER prior to application on site. The maximum slump shall be 4” to 6”.

1. Packaged, dry, combined concrete products shall meet ASTM C387.

2. Use of Quikrete or Sakrete packaged products is acceptable.

D. Concrete by Use

1. Foundations and Equipment Pads: Provide concrete to the following criteria:

Unit	Measurement
Compressive Strength (28 day)	4,000 psi
Coarse Aggregate	ASTM C 33, #467 or #57
Fine Aggregate	ASTM C 33
Water/Cement Ratio (maximum)	0.45 by weight
Slump	4-in (plus or minus 1-inch)

2. Thrust Blocks: Provide concrete to the following criteria:

Unit	Measurement
Compressive Strength (28 day)	3,000 psi
Coarse Aggregate	ASTM C33, #57
Fine Aggregate	ASTM C 33
Water/Cement Ratio (maximum)	0.50 by weight
Slump	5-in (plus or minus 1-inch)

3. Sidewalks, Curb and Gutter (public right of way):

Unit	Measurement
Compressive Strength (28 day)	3,000 psi

Coarse Aggregate	1” max, Caltrans Section 90-2
Fine Aggregate	Caltrans Section 90-2
Colorant (City of Novato)	2 lbs/CY Lamp Black; 1 lbs/CY jet black*

**not used on certain city streets*

D. Admixtures: Include admixture types and quantities indicated in concrete mix designs approved through submittal process.

1. Add air entraining agent to normal weight concrete mix for work exposed to exterior.

PART 3- EXECUTION

3.01 EXAMINATION

A. Verify requirements for concrete cover over reinforcement.

B. Verify anchors, seats, plates, reinforcement and other items to be cast into concrete are accurately placed, positioned securely, and will not interfere with placing concrete.

3.02 PLACING CONCRETE

A. Place concrete in accordance with ACI 301, ACI 318.

B. Ensure reinforcement, inserts, embedded parts, formed expansion and contraction joints are not disturbed during concrete placement.

C. Repair vapor barrier damaged during placement of concrete reinforcing. Repair with vapor barrier material; lap over damaged areas minimum 12-inches and seal watertight.

D. Separate slabs on grade from vertical surfaces with ½-inch thick joint filler.

E. Maintain records of concrete placement. Record date, location, quantity, air temperature, and test samples taken.

F. Place concrete continuously between predetermined expansion, control, and construction joints.

G. Saw cut joints within 12 hours after placing. Use 3/16-inch thick blade, cut into ¼- inch depth of slab thickness.

H. Screed slabs on grade level, maintaining surface flatness of maximum ¼-inch in 10 feet.

I. Follow City of Novato standards for transverse expansion joints, control joints and doweling into existing concrete.

3.03 CURING AND PROTECTION

A. Immediately after placement, protect concrete from premature drying, excessively hot or cold temperatures, and mechanical injury.

B. Maintain concrete with minimal moisture loss at relatively constant temperature for period necessary for hydration of cement and hardening of concrete.

3.04 FIELD QUALITY CONTROL

A. Tests of cement and aggregates may be performed to ensure conformance with specified requirements.

B. Three concrete test cylinders will be taken for every 200 or less cu yards of concrete placed.

C. One slump test will be taken for every delivery truck of concrete.

D. Maintain records of concrete placement. Record date, location, quantity, air temperature and test samples taken.

3.05 PATCHING

A. Excessive honeycomb or embedded debris in concrete is not acceptable. Notify DISTRICT ENGINEER upon discovery.

B. Patch imperfections in accordance with ACI 301.

3.06 DEFECTIVE CONCRETE

A. Defective Concrete: Concrete not conforming to required lines, details, dimensions, tolerances or specified requirements.

B. Repair or Construction of defective concrete will be determined by DISTRICT ENGINEER.

C. Public Right-of-Way work: The Agency with Jurisdiction (encroachment permit issuer) may determine needed repair for any defective work.

END OF SECTION

NORTH MARIN WATER DISTRICT

STANDARD SPECIFICATIONS

SECTION 15045 CLOSED-CIRCUIT TELEVISION (CCTV) INSPECTIONS

PART 1 GENERAL

1.01 DESCRIPTION

This section describes the requirements and procedures for closed-circuit television (CCTV) inspection of newly constructed and rehabilitated sewer mains and rehabilitated water mains (if required by the District).

1.02 REFERENCED STANDARDS

The publications listed below form part of this specification to the extent referenced and are referred to in the text by the basic designation only. Reference shall be made to the latest edition of said standards unless otherwise called for.

SSPWC - Standard Specifications for Public Works Construction ("Greenbook")

1.03 RELATED WORK SPECIFIED ELSEWHERE

WAS Standard Specifications 01000, 15043, and 15061.

1.04 REQUIREMENTS PRIOR TO TESTING

CCTV inspections on newly constructed sewer mains shall be conducted after all utilities have been installed and backfill compaction has been certified, but prior to final pavement.

The Contractor shall notify the Engineer two (2) working days in advance of the anticipated date of televising so that the Engineer may observe CCTV inspection operations. Schedule shall also include time for pre-cleaning operations, when necessary.

1.05 QUALITY ASSURANCE

A. New Mains: CCTV inspections shall be performed by the Contractor as follows:

1. Inspection of sewer mains 36 inches and smaller for the purpose of documenting the physical condition and cleanliness of the pipe and detection of reverse slope by ponding of water or dips in pipe alignment.

B. Existing Mains: CCTV inspections shall be performed on existing sewer mains to detect and locate defects and document the current condition of the sewer main, leading to evaluation and selection of repair methodology by the District.

PART 2 MATERIALS

CCTV EQUIPMENT

The Contractor shall furnish all equipment and materials required for inspection. Equipment shall be in accordance with SSPWC Section 500, SSPWC Regional Supplement Amendments Section 306 and as noted below:

A. The video equipment utilized shall be specifically designed and constructed to be operative in one hundred percent (100%) humidity conditions. Lighting for the camera shall minimize reflective glare. Lighting and camera quality shall be suitable to provide a clear, continuously in-focus picture of the entire inside periphery of the pipe for all conditions encountered during the inspection. A reflector in front of the camera may be required to enhance lighting in large diameter pipe.

B. CCTV inspections must be recorded onto digital media such as DVD.

C. Equipment used in sewer surveillance shall not be used in drinking water mains.

2.02 TEMPORARY BYPASS PUMPING

The Contractor shall provide pumps, piping, hoses, and accessories suitable for continuous pumping of raw sewage. Backup equipment of equal size and power shall be provided to ensure continuous pumping in the event of equipment or power failure.

2.03 PRE-CLEANING

The Contractor shall work with the District for determination of equipment required and its use. Equipment selection and method for cleaning may be based on the age, pipe material, and the probable condition of the pipe.

PART 3 EXECUTION

3.01 TEMPORARY BYPASS PUMPING

If temporary bypass pumping is required during the duration of the CCTV inspection, the existing sewer main shall be plugged at the nearest manhole and sewage effluent shall be bypassed around the areas of inspection. Bypass piping shall be located out of the traveled way and protected during use.

3.02 PRE-CLEANING

The Contractor shall work closely with the District during the cleaning operations. Cleaning operations shall not damage the sewer or any manhole during cleaning. Cleaning operations shall remove dirt, sand, rocks, solids, debris, grease or grit from the entire circumference of the sewer between manholes or access points.

3.03 CCTV PROCEDURES

Procedures for CCTV inspections shall be in accordance with SSPWC Section 500, SSPWC Regional Supplement Amendments Section 306 and as noted below:

A. The camera operator shall slow or stop the camera at potential or actual imperfections in the main to obtain a high quality video image. Each location where a potential obstruction or structural deficiency exists shall be identified with accurate distance measurements above ground from the manhole or access hole.

3.04 CCTV INSPECTION

Structural cracking, excessively deflected joints, protruding joint sealing material, corrosion, evidence of reverse slope by ponding of water or dips in sewer pipe alignment and any other defect revealed by the CCTV inspection shall be repaired to the satisfaction of the District Engineer at the Contractor's expense.

After defects in the pipe lining or joints are repaired, another video shall be taken of the repaired section and submitted for approval by the District Engineer.

3.05 DOCUMENTATION

Documentation of CCTV inspections shall be in accordance with SSPWC Section 500, SSPWC Regional Supplement Amendments Section 306 and as noted below:

A. Audio and written documentation shall accompany all DVD(s) submitted to the District Engineer.

B. If voice recording is used on the videotape the recording shall have brief informative comments on unusual conditions, type and size of connection and fitting, collapsed sections, the presence of scale and corrosion, location and description of each defect, and other significant data.

C. The Contractor shall prepare an inspection report which shall be a complete written log of pipe conditions, indexed to the footage counter. The Contractor shall turn over the original videotape or DVD and written reports to the District Engineer at completion of the inspection.

3.06 DISINFECTION FOLLOWING INSPECTION AND REPAIRS OF POTABLE WATER MAINS

Following inspection by CCTV and any repairs performed on drinking water mains, the District's procedures for disinfection of new water mains should be carried out to prevent bacterial contamination of potable water supply.

END OF SECTION

NORTH MARIN WATER DISTRICT

STANDARD SPECIFICATIONS

SECTION 15065 POLYVINYL CHLORIDE (PVC) GRAVITY SEWER PIPE

PART 1 GENERAL

1.01 DESCRIPTION

This section includes materials and installation of polyvinyl chloride (PVC) gravity sewer pipe and fittings.

1.02 REFERENCE STANDARDS

The publications listed below form part of this specification to the extent referenced and are referred to in the text by the basic designation only. Reference shall be made to the latest edition of said standards unless otherwise called for.

ASTM D 2321	-	Underground Installation of Thermoplastic Pipe for Sewers and Other Gravity-Flow Applications
ASTM D 3034	-	Type PSM Poly (vinyl chloride) (PVC) Sewer Pipe and Fittings
ASTM F 679	-	PVC Large-Diameter Plastic Gravity Sewer Pipe and Fittings
ASTM F 789	-	Type PS-46 PVC Plastic Gravity Flow Sewer Pipe And Fittings
California Administrative Code, Title 22		
SSPWC	-	Standard Specifications for Public Works Construction (Green Book)
UNI-B-5	-	Recommended Practice for the Installation of PVC Sewer Pipe
Uni-Bell	-	Handbook of PVC Pipe Design and Construction

1.03 RELATED WORK SPECIFIED ELSEWHERE

NMWD Standard Drawings
NMWD Standard Specifications 01000, 02223, 03000, 03461, 15000, 15043, 15045

1.04 SERVICE APPLICATION

A. PVC gravity sewer pipe will be used to convey sewage as indicated on the Approved Plans.

B. In accordance with their ASTM designations PVC gravity sewer pipe shall be used for pipe sizes as follows:

1. Sewer Laterals: Sewer laterals shall be as indicated on the Approved Plans with a minimum size of four (4) inch.

2. Sewer Mains: Sewer mains shall be as indicated on the Approved Plans.

1.05 DESIGN REQUIREMENTS

A. PVC pipe shall have common profiles for inter-changeability between rough-barrel dimensions, couplings, ends, and elastomeric gaskets to facilitate future repairs. When assembled, the pipe shall have only one gasket per bell and spigot end, and/or two gaskets per coupling.

B. Pipe, fittings, couplings, and joints shall comply with the size, dimensions, materials, and performance requirements of the following ASTM designations:

Four (4) inch through fifteen (15) inch	ASTM D 3034, SDR 26
Eighteen (18) inch through twenty-seven (27) inch	ASTM F 679, SDR 35 (T-I)
Twenty-one (21) inch through forty-eight (48) inch	ASTM F 794, Closed Profile

C. Sewer pipe shall be furnished in standard thirteen or twenty (13 or 20) foot lengths, unless otherwise detailed or required on the Approved Plans. Random lengths may be furnished but shall not exceed 15% of the total footage.

D. Follow the manufacturer's recommendations for the minimum allowable radius for the size of pipe used.

E. All pipe, fittings, and couplings shall be clearly marked in accordance with ASTM D3034, F679, and F794, respectively.

F. All pipe shall have a home mark on the spigot end to indicate proper penetration when the joint is made.

G. The bell and spigot configuration for the fittings and couplings shall be compatible with those used for the pipe.

H. Minimum length of PVC pipe sections used for tie-ins and stub-outs shall be thirty-six (36) inches, unless otherwise approved by the District Engineer.

I. Curves will be allowed in the sewer usually to match the curve of the road in which the sewer main is to be installed. Curves in sewer pipe shall be as recommended by the pipe manufacturer with a minimum radius of two hundred (200) feet.

J. Minimum slope of sewer pipe shall be:

pipe size (inches)	Minimum Slope r in feet per foot
6	.006
8	.0035
10	.0025
12	.0020

1.06 QUALITY ASSURANCE

A. The manufacturer of each shipment of pipe shall be required to supply a statement certifying that each lot or load of pipe has been subjected to the tests specified for PVC gravity sewer pipe. Tests shall show that the pipe has been found to meet all the requirements of ASTM D3034, F679, and/or F794 as applicable.

B. PVC pipe and couplings shall bear indelible identification markings as required by ASTM

D3034, F679, and/or F794 and as follows:

1. All pipe, fittings, and couplings shall be clearly marked at an interval not to exceed five (5) feet as follows:

    a. Nominal pipe diameter.

    b. PVC cell classification.

    c. Company, plant, date of manufacture, ASTM and SDR designation. Fittings and couplings do not require the SDR designation.

    d. Service designation or legend.

2. All pipe shall have home marks on the spigot ends to indicate proper penetration when joints are made.

1.07 DELIVERY, STORAGE, AND HANDLING

A. PVC pipe shall be stored in suppliers' yards and on the job site in accordance with AWWA M23 and the manufacturer's recommendations. PVC pipe that has been subjected to excessive ultraviolet radiation from the sun shall not be used. The determination as to the acceptability of PVC pipe faded by the sun's radiation shall rest solely with the District Engineer.

B. Store PVC pipe in the field by supporting the pipe uniformly per AWWA M23. Do not stack pipe higher than four (4) feet or stack the pipe with weight on the bell ends. Cover stored PVC pipe to protect it from the sun's ultraviolet radiation. Any pipe that has been contaminated with any petroleum products (inside or outside) shall not be installed.

C. Pipe and fittings shall be handled according to manufacturer's recommendations. Proper care shall be used to prevent damage in handling, moving and placing the pipe. All pipe, fittings, and other pipeline materials shall be lowered into the trench in a manner that prevents damage. The pipe shall not be dropped, dragged or handled in a manner that will cause bruises, cracks, or other damage. PVC pipe or fittings that have been gouged or scratched shall be subject to rejection as determined by the District Engineer.

1.08 SADDLE CONNECTIONS TO EXISTING SEWER MAINS

Saddle-type or wye connections are used for connecting new sewer laterals to existing sewer mains. All connections to be existing system must be performed in the presence of District Engineer.

1.09 WARNING/IDENTIFICATION TAPE

All PVC pipe sewer mains shall include the installation of Warning/Identification Tape in accordance with Section 15000.

1.10 CURB IDENTIFICATION MARK FOR SERVICES

The Contractor shall mark the location of each sewer lateral at the curb crossing as described in

Section 15000.

1.11 CLEANOUTS

Size-on-size cleanouts are required at the end of mains eight (8) inches and smaller that extend no more than two hundred (200) feet and have no more than three (3) laterals installed at or near the end of the main. Manholes are required at the ends of mains larger than eight (8) inches, or on mains which have four (4) or more laterals at or near the end, or on mains extending beyond two hundred (200) feet.

1.12 SEWER FORCE MAINS

Sewer force mains are pressure lines and shall be constructed of PVC pipe in accordance with Section 15064 and the Approved Plans.

PART 2 MATERIALS

2.01 PIPE AND FITTINGS

A. PVC gravity sewer pipe and appurtenant components and materials shall be selected from the Approved Materials List.

B. PVC pipe in sizes four (4) inches through fifteen (15) inches shall comply with the requirements of ASTM D3034, SDR-26.

C. PVC pipe in sizes eighteen (18) inches through (27) inches shall comply with the requirements of ASTM F679, SDR-29 (T-1).

D. PVC pipe in sizes twenty one (21) inches through forty eight (48) inches shall comply with the requirements ASTM F794, Closed Profile.

2.02 PIPE ZONE MATERIAL

Material for use in the pipe zone shall be in accordance with Section 02223.

2.03 TRENCH PLUGS

When shown on drawing, trench plugs consisting of compacted selected impervious materials or sand cement slurry, shall be in accordance with Section 02223 and Standard Drawing.

2.04 TRENCH ZONE MATERIAL

Material for use in trench zones shall be in accordance with Section 02223.

2.05 CONCRETE

Concrete used for anchor blocks, lugs and other uses as required shall be in accordance with Section 03000.

2.06 WARNING/IDENTIFICATION TAPE

Warning/Identification Tape materials shall be in accordance with Section 15000 and selected from the Approved Materials List.

2.07 CLEANOUTS

Materials used for the installation of cleanouts shall be selected from the Approved Materials List.

PART 3 EXECUTION

3.01 GENERAL

A. At all times when the work of installing pipe is not in progress, including worker break times, close the ends of the pipe with a tight-fitting, vermin-proof and child-proof, cap or plug. Do not permit trench water to enter the pipe. Do not place tools, clothing, or other materials in the pipe. The Contractor shall maintain the interior of the pipe in a sanitary condition free from foreign materials.

B. Where pipe sections less than the standard thirteen or twenty (13 or 20) foot pipe lengths are required, the pipe sections shall be installed in accordance with the manufacturer's installation guide and shall only be used with the approval of the District Engineer. The minimum pipe length permitted is five (5) feet when used to connect to manholes and cleanouts. The minimum pipe length permitted for stub outs shall be thirty six (36) inches.

3.02 TRENCHING, BACKFILLING AND COMPACTION

Trenching, bedding, backfilling and compaction operations shall be performed in accordance with Section 02223.

3.03 TRENCH PLUGS

The installation of sewer mains shall incorporate trench plugs. Trench plugs shall be installed in accordance with Section 02223 and Standard Drawings.

3.04 DEWATERING

The Contractor shall provide and maintain at all times during construction ample means and devices to promptly remove and dispose all water from any source entering trench excavations or other parts of the work in accordance with Section 02223. Any damage caused by flooding of the trench shall be the Contractors responsibility.

Dewatering shall be performed by methods that will maintain a dry excavation, preservation of the

final lines and grades and protection of all utilities. Sewer mains shall not be used as drains for dewatering construction trenches. If flooding of the trench does occur, the Contractor shall immediately dewater and restore the trench. Damaged or altered pipeline appurtenances or trench materials shall be repaired or replaced as directed by the Engineer.

3.05 PIPE INSTALLATION

When the work requires and the size of the pipe allows entry of personnel into the pipe, the Contractor shall comply with all Federal and State regulations for confined space entry. Work inside pipelines shall not be undertaken until all the tests and safety provisions of the Code of Federal Regulations 1910.146, and the General Industry Safety Orders of the California Code of Regulations, Title 8, Section 5159 for confined space entry have been performed and the area is verified as safe to enter.

The Contractor shall furnish and install all pipe, specials, fittings, closure pieces, supports, gaskets, jointing materials, and all other appurtenances as shown and as required to provide a complete and workable installation. Pipe installation shall be as recommended in UNI-B-5 except as modified below and as shown on the Approved Plans.

A. Inspect each section of pipe prior to lowering the pipe into the trench. Thoroughly clean the ends of the pipe. Remove foreign matter and dirt from inside of the pipe and keep pipe clean during and after installation.

B. Install pipe according to the manufacturer's approved order of installation to the proper lines and grades as shown on the Approved Plans.

   1. Pipe shall be installed with pipe bells up-grade. Lay pipes uphill if the grade exceeds ten percent (10%).

   2. Installation tolerances for the pipe shall not vary more than two (2) inches horizontally or one (1) inch vertically from the alignment and elevations shown on the Approved Plans.

   3. Install the pipe such that the identification markings on each pipe section are continuously aligned for the total length of the pipeline alignment. Orient the strip marking upward to the 12 o’clock position (top) of the trench opening.

   4. Avoidance of reverse slope: Any pipeline installed with reversed slope, as evidenced by ponding of water or sag, is not allowed. Any such pipeline shall be removed and replaced (at proper line and grade) to the nearest upstream and downstream sewer structure as directed by the District Engineer.

C. The pipe shall have firm bearing along its full length, and bell holes shall be provided at each joint to permit visual inspection of the joint and prevent the pipe from being supported by the bell end or coupling.

C. Field cutting and milling shall be accomplished to equal the quality of shop-fabricated ends in accordance with the manufacturer’s written instructions.

D. Pipe Assembly: Assemble the pipe joint using NSF 61 approved lubricant supplied by the pipe manufacturer. Insert the spigot end into the bell or coupling to the proper insertion mark. Check that the elastomeric ring has not left the groove during assembly by passing a feeler gauge around the completed joint. Drive the spigot end into the bell in accordance with the manufacturer’s recommendations. Stabbing shall not be permitted.

F. Horizontal or vertical curve alignments shall be accomplished as required, in accordance with the manufacturer's recommendations. A combination of random pipe lengths, bending, and joint deflection shall be utilized to create smooth radius curves in accordance with the manufacturer's recommendations and as directed by the District Engineer.

G. PVC wyes shall be located where shown on the Approved Plans in accordance with the Standard Drawings. Wyes shall not be placed closer than five (5) feet from the exterior of any structure such as manholes.

3.06 SEWER LATERALS

A. The Contractor shall install sewer laterals using wye-branch fittings sized and located as shown on the Approved Plans.

B. All sewer laterals that are to be left unconnected to a building lateral extension shall be capped and identified as shown on the Standard Drawings.

C. All sewer laterals shall run perpendicular from the sewer main to the property line. They shall be bedded, backfilled and compacted the same as the sewer main into which they connect in accordance with Section 02223.

D. All sewer laterals shall be plugged or capped at the end of the last joint, to withstand the internal pressure during leakage and infiltration testing.

3.07 SADDLE CONNECTIONS TO EXISTING SEWER MAINS

The Contractor shall furnish the saddle fitting, appurtenances and all other materials as called for in the Standard Specifications in accordance with the Approved Materials List. The Contractor shall provide all equipment and labor required for the excavation and installation of the connection including, but not limited to backfill and pavement replacement. In certain circumstances the Contractor may be required to provide a water truck, bypass pump, and fittings as part of the equipment for making the connections. Emergency standby equipment or materials may be required of the Contractor by the District Engineer.

Saddle connections to existing sewer mains for the tie-in of new sewer laterals shall be as follows:

A. Prior to construction, Contractor shall pothole the existing pipe at the location of the proposed connection. The District shall inspect the pothole prior to Contractor’s repair of trench. Refer to Section 01000 for protection of existing facilities. Contractor shall record the following information on Record Drawings:

1. Pipe size, outside diameter.

2. Pipe type such as PVC or VCP.

3. Elevation, grade, and alignment.

4. Can the tie in be made at the indicated location, assure no collars, pipe bells, fittings or couplings exist in the area of the connection.

5. Potential conflicts with existing utilities.

B. To facilitate the proposed connection and allow for slight adjustments in alignment, the Contractor shall leave a minimum ten (10) foot gap between the new pipe installation and the proposed connection point at the existing main. The Contractor shall leave a gap longer than ten (10) feet if conditions warrant, or if directed by the Engineer.

C. After the District Engineer has given approval to proceed with the connection, the Contractor shall schedule with the District Engineer for the connection.

1. Tie-ins will be scheduled at the convenience of the District. Work may be scheduled for nights and weekends if required.

2. The Contractor shall give the District Engineer a minimum of five (5) working days notice prior to any proposed excavation. Scheduling shall be subject to approval of the District Engineer.

3. The District Engineer may postpone or reschedule the connection operation if, for any reason, the District Engineer believes that the Contractor is improperly prepared with competent personnel, equipment, or materials to proceed with the connection.

4. If progress in completing the connection within the time specified is inadequate, the District Engineer may order necessary corrective measures. Corrective measures may consist of directing District personnel or another contractor to complete the work. All costs for corrective measures shall be borne by the Contractor.

D. Contractor may proceed with the excavation and connection, only when approved materials are onsite, connection operations have been scheduled and a copy of the approved traffic control plan has been supplied to the District Engineer.

1. The Contractor shall saw-cut pavement, excavate and provide and install shoring and steel plating, when necessary, one day prior to the hot tap or cut-in installation.

2. The Contractor shall provide lights, barricades and traffic control in accordance with the Agency of jurisdiction as deemed necessary for the excavation by the District Engineer.

3. After the District has performed connection operations, and the District Engineer has given approval to proceed, the Contractor shall complete the installation as shown on the Approved Plans in accordance with Standard Specifications including:

a. Installing the pipe section(s) necessary to make the closure to the new system.

b. Complete all backfill and compaction of the trench in accordance with Section 02223.

c. Make all pavement repairs and/or replacement as necessary in accordance with agency of jurisdiction requirements.

d. Discard pipe and appurtenances removed from service as specified in this Section.

3.08 CONNECTION TO EXISTING SEWER SYSTEM

A. Connection to the existing sewer system at an existing manhole or dead end shall be made as shown on the Approved Plans in accordance with Section 03461. All work shall be performed in the presence of the District Engineer.

B. In order to prevent accidental use of the new sewer before completion and acceptance, the new inlet to the existing tie-in manhole and the outlet of the first new upstream manhole shall be sealed with expandable plugs. Installation of plugs shall be in accordance with the manufacturer's recommendations and as approved by the District Engineer. Plugs shall be removed at the time of final inspection or as directed by the District Engineer.

3.09 CONCRETE

Concrete for anchor blocks, lugs and other uses shall be installed as called for in Section 03000 in accordance with the Standard Drawings. Refer to Section 03000 for the minimum concrete curing time required.

3.10 WARNING/IDENTIFICATION TAPE

Warning/Identification Tape shall be installed in accordance with Section 15000 and the Standard Drawings.

3.11 CLEANOUTS

Cleanouts shall be installed at the locations shown on the Approved Plans in accordance with the Standard Drawings.

3.12 CLEANING

A. Before testing, each pipe shall be thoroughly flushed with clean water from manhole to manhole with an appropriately- sized inflatable ball.

B. All construction debris and water shall be removed from each manhole prior to removal of the plugs.

C. Water used in flushing out the new sewer mains, laterals, or house plumbing shall not be discharged into the existing sewer system.

3.13 MANDREL TEST

A. Following backfill and compaction, installation of all utilities, and prior to permanent pavement replacement, all main line sewer pipe shall be mandrelled to check for obstructions. A rigid mandrel, circular in cross section, having a diameter of 95% of the pipe inside diameter, and equal in length to the pipe diameter, shall be pulled through the pipe by hand.

B. Obstructions encountered by the mandrel shall be corrected by the Contractor. If an obstruction is encountered, the District Engineer shall approve corrective measures prior to implementation.

3.14 LEAKAGE AND INFILTRATION TESTING

Field leakage and infiltration testing of sewer mains shall be performed in accordance with Section

Section 15043.

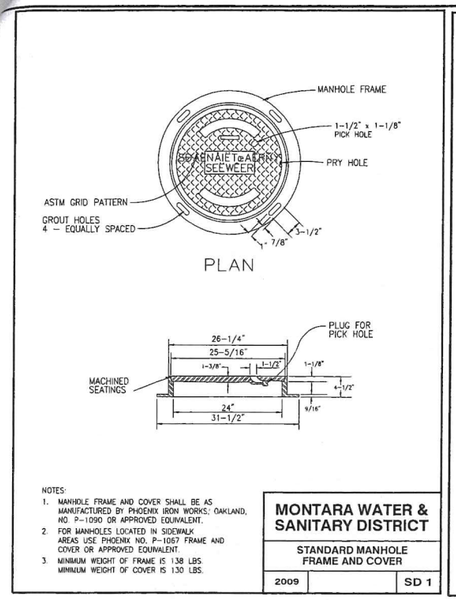
3.15 CLOSED-CIRCUIT TELEVISION INSPECTION

Closed-circuit television (CCTV) inspections of sewer mains shall be performed in accordance with Section 15045.

3.16 FINAL INSPECTION

A final visual inspection shall be made after paving has been completed and all manhole frames have been raised to grade. The Contractor shall have a responsible person present and shall furnish the necessary labor to assist the District Engineer in making the final inspection. Acceptance of the system will be pending completion or correction of items identified during this inspection.

END OF SECTION

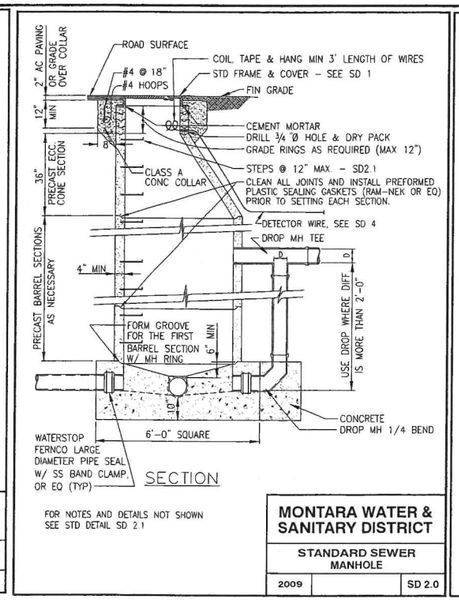


NOTES:
1. MANHOLE FRAME AND COVER SHALL BE AS MANUFACTURED BY PHOENIX IRON WORKS, OAKLAND, NO. P-1090 OR APPROVED EQUIVALENT.
2. FOR MANHOLES LOCATED IN SIDEWALK AREAS USE PHOENIX NO. P-1067 FRAME AND COVER OR APPROVED EQUIVALENT.
3. MINIMUM WEIGHT OF FRAME IS 138 LBS MINIMUM WEIGHT OF COVER IS 130 LBS.

MONTARA WATER & SANITARY DISTRICT

STANDARD MANHOLE FRAME AND COVER

2009		SD 1

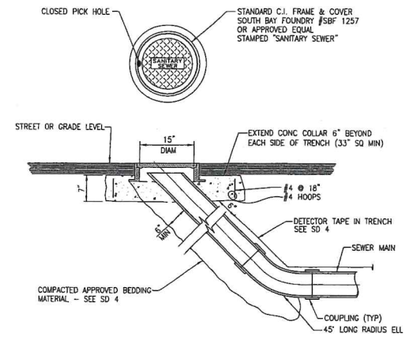


FOR NOTES AND DETAILS NOT SHOWN SEE STD DETAIL SD 2.1

MONTARA WATER & SANITARY DISTRICT

STANDARD SEWER MANHOLE

2009		SD 2.0

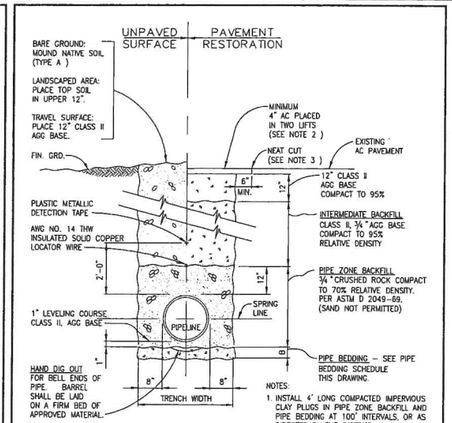


STANDARD ROD HOLE

MONTARA WATER & SANITARY DISTRICT

STANDARD 6 INCH RODDING INLET

2009		SD 3



PIPE BEDDING DETAIL

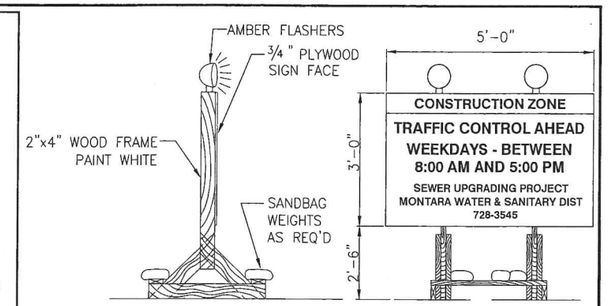
PIPE BEDDING SCHEDULE		
TRENCH MATERIAL	BEDDING DEPTH – B	BEDDING MATERIAL
SOIL – DRY	6"	3/4" CRUSHED ROCK
SOIL W/ WATER	12"	1 1/2" CRUSHED ROCK
ROCK OR HARD PAN – DRY	6"	3/4" CRUSHED ROCK
ROCK OR HARD PAN W/ WATER	6"	1 1/2" CRUSHED ROCK

NOTES:
1. INSTALL 4' LONG COMPACTED IMPERVIOUS CLAY PLUGS IN PIPE ZONE BACKFILL AND PIPE BEDDING AT 100' INTERVALS, OR AS DIRECTED BY THE DISTRICT.
2. ASPHALT THICKNESS SHALL CONFORM TO THE REQUIREMENTS OF THE AGENCY WITH JURISDICTION OVER STREET.
3. CONSULT LOCAL JURISDICTION FOR ASPHALT CUTTING REQUIREMENTS.

MONTARA WATER & SANITARY DISTRICT

TYPICAL TRENCH SECTION

2009	REV. 1	SD 4.0



NOTE:
LINE 1 – 3" SERIES D LETTERS
BLACK ON REFLECTIVE ORANGE BACKGROUND

LINES 2 TO 4 – 4" SERIES D LETTERS
BLACK LETTERS ON REFLECTIVE WHITE BACKGROUND

LINES 5 TO 6 – 3" SERIES D LETTERS
BLACK LETTERS ON REFLECTIVE WHITE BACKGROUND

STANDARD PROJECT SIGN (6/2)

4 REQ'D N.T.S.

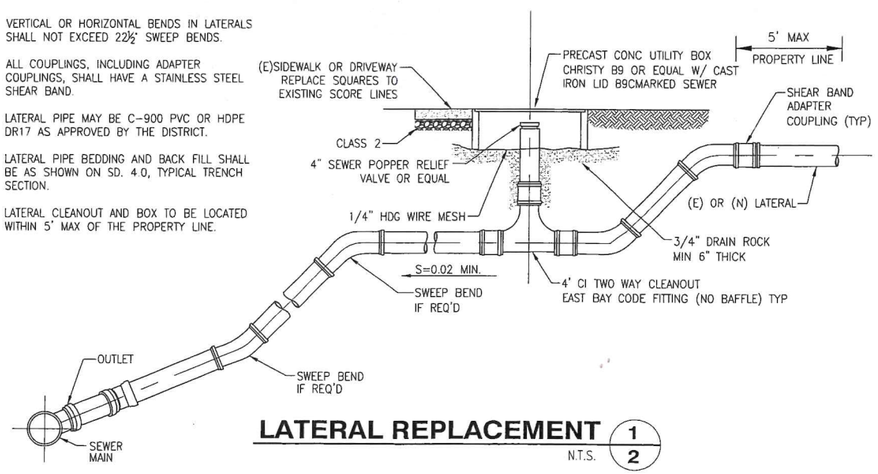
VERTICAL OR HORIZONTAL BENDS IN LATERALS SHALL NOT EXCEED 22½° SWEEP BENDS.

ALL COUPLINGS, INCLUDING ADAPTER COUPLINGS, SHALL HAVE A STAINLESS STEEL SHEAR BAND.

LATERAL PIPE MAY BE C-900 PVC OR HDPE DR17 AS APPROVED BY THE DISTRICT.

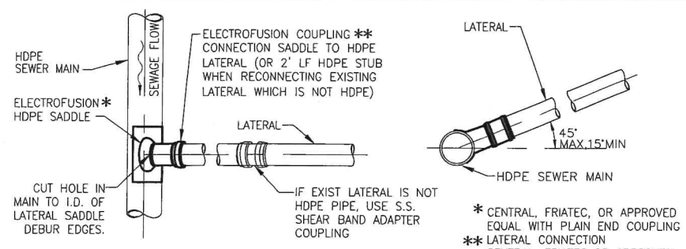
LATERAL PIPE BEDDING AND BACK FILL SHALL BE AS SHOWN ON SD. 4.0, TYPICAL TRENCH SECTION.

LATERAL CLEANOUT AND BOX TO BE LOCATED WITHIN 5' MAX OF THE PROPERTY LINE.



LATERAL REPLACEMENT (1/2)

N.T.S.



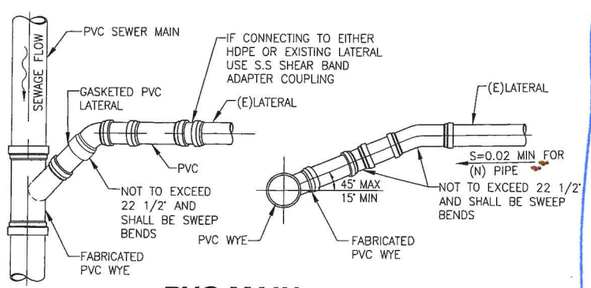
* CENTRAL, FRIATEC, OR APPROVED EQUAL WITH PLAIN END COUPLING
** LATERAL CONNECTION CENTRAL, FRIATEC OR APPROVED EQUAL

HDPE MAIN LATERAL CONNECTION - A (2/2)

N.T.S.

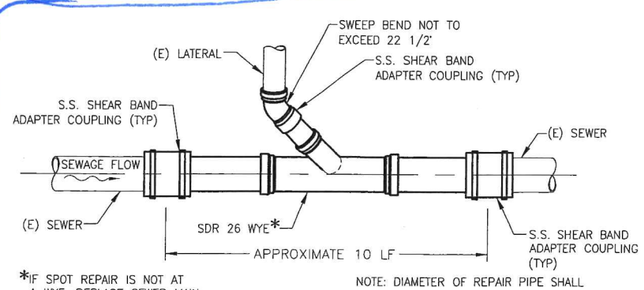
RECORD DRAWING FEBRUARY 2016

These record drawings (or corrected specifications) have been prepared, in part, on the basis of information compiled and furnished by others. The Engineer will not be responsible for any errors or omissions which may have been incorporated into this document as a result.



PVC MAIN LATERAL CONNECTION - B (3/2)

N.T.S.



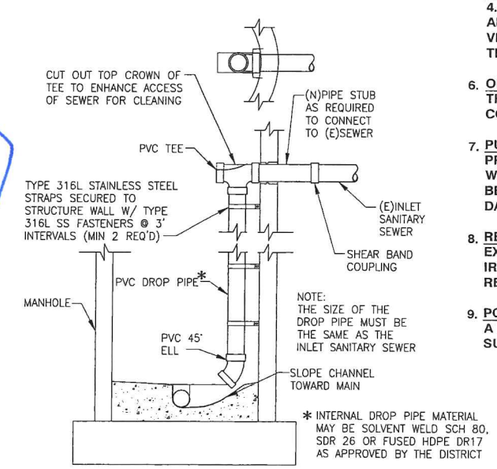
*IF SPOT REPAIR IS NOT AT A WYE, REPLACE SEWER MAIN WITH SDR 26 PIPE SECTION

NOTE: DIAMETER OF REPAIR PIPE SHALL MATCH DIAMETER OF (E) SEWER. FIELD VERIFY (E) PIPE SIZE AND MATERIAL.

SEWER MAIN SPOT REPAIR (4/2)

N.T.S.

NOTE: ASSUME 10' LONG BY 8' DEEP, 6" Ø PIPE FOR BID ESTIMATION PURPOSES TO BE USED AT THE DISTRICTS DIRECTION.



* INTERNAL DROP PIPE MATERIAL MAY BE SOLVENT WELD SCH 80, SDR 26 OR FUSED HDPE DR17 AS APPROVED BY THE DISTRICT

INTERNAL DROP CONNECTION (5/2)

N.T.S.

NOTE: MAY NOT BE USED ON THIS PROJECT.

LATERAL NOTES:

1. **LOCATION OF LATERALS** - LATERAL LOCATIONS ARE NOT SHOWN. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF EACH LATERAL AT THE PROPERTY LINE BEFORE CONSTRUCTING THE SEWER MAIN. EACH LATERAL SHALL BE POTHOLED TO DETERMINE WHICH ONES ARE LIVE. EXCAVATED PITS SHALL BE COMPLETELY COVERED WITH 3/4 INCH PLYWOOD OR STEEL PLATES IN TRAFFIC AREAS. ALL EXCAVATED MATERIALS SHALL BE REMOVED.
2. **CONNECTION OF LATERALS** - ALL LATERALS DETERMINED TO BE LIVE SHALL BE RECONNECTED TO THE NEW SEWER MAIN USING THE NECESSARY PIPES, FITTINGS AND CONNECTORS.
3. **REPLACEMENT OF LOWER LATERALS** - ALL LATERALS DETERMINED TO BE LIVE SHALL BE REPLACED FROM THE SEWER MAIN TO THE PROPERTY LINE AND SHALL BE RECONNECTED TO THE EXISTING LATERAL.
4. **UTILITY CONFLICTS** - IF LATERALS ARE IN CLOSE PROXIMITY TO OR UNDER OTHER UTILITY SERVICES, THE DISTRICT MAY DIRECT THE CONTRACTOR TO INSTALL THE NEW LATERAL BY OPEN TRENCHING AT LEAST 5' AWAY FROM THE UTILITY SERVICES AND MAKE AN OFFSET AT THE TIE IN TO THE EXISTING SEWER LATERAL.
5. **PIPEBURSTING LATERALS** - LATERALS MAY BE PIPEBURST WITH INSERTION OF 4.5" OD HDPE DR17 PIPE ONLY UPON PRE-TELEVISING TO DETERMINE IF THERE ARE ANY SAGS AND WITH THE APPROVAL OF THE ENGINEER. THE PRE-TELEVISING VIDEO MUST BE SUBMITTED TO THE DISTRICT ENGINEER 1 (ONE) WEEK PRIOR TO THE CONSTRUCTION OF THE SEWER MAIN
6. **OPEN TRENCH LATERALS** - IF A SAG IS PRESENT OR IF REPAIRS ARE REQUIRED, THE LATERAL SHALL BE REPLACED BY OPEN TRENCH WITH PVC C-900 PIPE. THE CONTRACTOR IS RESPONSIBLE FOR ALL SURFACE RESTORATIONS.
7. **PUBLIC RELATIONS** - THIS PROJECT INVOLVES WORK ON OR NEAR PRIVATE PROPERTIES. THE CONTRACTOR SHALL SPECIFICALLY INSTRUCT ALL HIS WORKERS TO EXERCISE GOOD PUBLIC RELATIONS DURING THE WORK, INCLUDING BEING COURTEOUS, AVOIDING THE USE OF SWEAR WORDS, AND MINIMIZING DAMAGE TO PRIVATE PROPERTY.
8. **RESTORATION** - IN LANDSCAPED AREAS, BACKFILL UPPER 12" OF THE EXCAVATION WITH TOP SOIL. RESTORE ALL LANDSCAPING, LANDSCAPE IRRIGATION PIPING AND CONTROL WIRES WHICH ARE DAMAGED. RESTORE ALL OTHER SURFACES TO MATCH (E) IMPROVEMENTS.
9. **POST CONSTRUCTION LATERAL TELEVISING** A POST-CONSTRUCTION CCTV VIDEO AND LOG SHALL BE SUBMITTED PRIOR TO RELEASE OF RETENTION.

MONTARA WATER AND SANITARY DISTRICT
San Mateo County, California

2014 SEWER IMPROVEMENT PROJECT

DETAILS AND NOTES

NUTE ENGINEERING
907 MISSION AVE, SAN RAFAEL, CALIFORNIA TEL 415-453-4480

Drawn by: BEO	Job No.: 8260	Scale: AS SHOWN
Checked by: MTW	CR: 8349	Date: FEBUARY 2014

Printed: February 10, 2016 1:03 PM
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Appendix E

Element 6 (Spill Emergency Response Plan) Supporting Documents

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NORTH MARIN WATER DISTRICT

SPILL EMERGENCY RESPONSE PLAN

(SERP)

North Marin Water District – Oceana Marin

August 2026

WDID No.: 1SSO10052

V.W. HOUSEN & ASSOCIATES

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1. INTRODUCTION

The North Marin Water District, Oceana Marin Community Wastewater System Spill Emergency Response Plan (SERP) provides guidelines for responding to, cleaning, containing, and reporting spills that occur during the collection system service area.

1.1. Spill Emergency Response Plan Objectives

The Spill Emergency Response Plan includes measures to protect public health and the environment. This plan includes information to support the District's response to spills from its system in a timely manner that minimizes water quality impacts and nuisance by:

- Stopping the spill and preventing/minimizing a discharge to Waters of the State[1];
- Intercepting sewage flows to prevent/minimize spill volume discharged into waters of the State;
- Recovering, cleaning up and disposing of sewage and wash down water; and
- Cleaning publicly accessible areas while preventing toxic discharges to Waters of the State.

1.2. Regulatory Requirements

On May 2, 2006, the State Water Resources Control Board (SWRCB) issued a directive through Order No. 2006-0003-DWQ to require all public wastewater collection system agencies in California with greater than one mile of sewers to be regulated under the Statewide WDR. Portions of this Order related to monitoring and reporting were amended by Order No. 2013-0058-EXEC, dated July 30, 2013.

All of the previous SWRCB Orders were superseded by Order No. 2022-0103-DWQ, effective June 5, 2023, which is referenced in this document as the Statewide WDR.

The District must develop and implement a Spill Emergency Response Plan to ensure prompt detection and response to spills to reduce spill volumes and collect information for the prevention of future spills. At a minimum, this 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;

[1] Waters of the State include any surface water or groundwater, including saline waters, within the boundaries of the state as defined in Water Code section 13050(e), and are inclusive of waters of the United States.

- Comply with the notification, monitoring, and reporting requirements of the Statewide WDR, 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 by the Statewide WDR; and
- Annually, review and assess effectiveness of the Spill Emergency Response Plan and update it as needed.

2. SANITARY SEWER SPILL CATEGORIES

Four categories of spills, Categories 1 through 4, are defined in the Statewide WDR, as defined in Table 2.1. For reporting purposes, the Statewide WDR also has requirements for a "No Spill" category. Table 2.2 on the following page lists regulatory reporting timelines for each category of spill.

All agencies that own or operate sanitary systems greater than one mile in length that collect and/or convey untreated or partially treated wastewater to a publicly owned treatment facility are required to report all spills, excluding private lateral spills.

TABLE 2.1 STATEWIDE WDR SPILL CATEGORIES

Category 1	• A spill of any volume of sewage from or caused by a sanitary sewer system or publicly owned lateral 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.
Category 2	• A spill from a sewer main of 1,000 gallons or greater that does not discharge to a surface water.
Category 3	• A spill from a sewer main of equal to or greater than 50 gallons and less than 1,000 gallons that does not discharge to a surface water.
Category 4	• A spill from a sewer main of less than 50 gallons that does not discharge to a surface water.

TABLE 2.2 REGULATORY REPORTING TIMELINES

Element	Requirement	Method
NOTIFICATION	Category 1 Spill Greater than 1,000 Gallons: • Notify OES within two hours of becoming aware of the spill • Obtain an OES notification control number. • Also notify the Marin County Health Officer	• Call Cal OES at: **(800) 852-7550** • County Health Officer **(415) 473-4163** and County Environmental Health Services **(415) 473-6907** should also be contacted. • During evenings/weekends, call the Sheriff Communication Center at **(415) 473-7250.**
REPORTING	Category 1 Spill: • Draft Report within three business days of becoming aware of the spill | LRO certifies within 15 calendar days of spill end date • Spill Technical Report within 45 calendar days after the spill end date if 50,000 gallons or more Category 2 Spill: • Draft Report within 3 business days of becoming aware of the spill | LRO certifies within 15 calendar days of the spill end date Category 3 & 4 Spills: • CAT 3 - Certified report within 30 calendar days of the end of month in which the spill occurred • CAT 4 – Estimate the monthly total spill volume exiting the sanitary sewer system, and the total number of all Category 4 spills within 30 calendar days after the end of the calendar month in which the spills occurred • LRO certifies annually a report of all Category 4 spills, by February 1 after the end of the calendar year in which the spills occurred "No Spill" or "Category 4" Spill Certification • LRO certifies that no Spill or only Category 4 spills occurred within 30 calendar days of the end of the month in which there	• Enter data into the CIWQS Online Spill Database (http://ciwqs.waterboards.ca.gov), certified by the Legally Responsible Official(s). • All information required by CIWQS will be captured in the Sanitary Sewer Spill Report. • Certified spill reports may be updated by amending the report or adding an attachment to the spill report within 90 calendar days after the spill end date. After 90 days, the State Spill Program Manager must be contacted to request to amend an spill report along with a justification for why the additional information was not available prior to the end of the 90 days.
WATER QUALITY MONITORING	The District will conduct water quality sampling within 18 hours after being aware of Category 1 spills in which 50,000 gallons or greater are spilled to surface waters. EHS may require daily water quality sampling until compliance is achieved.	Water quality results will be included in the Spill Technical Report for Category 1 spills in which 50,000 gallons or greater reach surface waters.

3. NOTIFICATION PROCEDURES

3.1. General

The District is most often notified by the public or field staff of a spill. The public contacts the District telephone number, which is (415) 897-4133, day or night. Contact numbers are also included on the District website, at the following url: Contact - North Marin Water District. In the event of a pump station alarm, the notification is relayed to the on-call Operator through a SCADA call-out system.

Spills may also be reported in person at the District Office, or via 9-1-1. If the call is made to 9-1-1, the receiving agency (likely the Marin Fire Department) notifies the District of the spill to provide First Response. As described on the "Emergencies & After Hours" procedure on the Contact Info page of the NMWD website, after hours, the call is routed to an outside call center and then to the on-call operator. One staff member is assigned to be on-call for a 7-day rotational period to support after hours duties.

If the on-call operator feels the event needs to be elevated, they will contact the Treatment and Distribution Supervisor. The Treatment and Distribution Supervisor will deploy additional personnel and will inform the Director of Operations, if necessary.

Figure 3.1 at the end of this section presents a flowchart showing the spill chain of communication during business hours and non-business hours. This flowchart is also included in SSMP Element 2, Organization.

3.2. Notification During Normal Working Hours

Normal working hours are from Monday through Friday from 8:00 a.m. to 5:00 p.m. for office staff, and 7:00 am to 3:30 p.m. for field staff, excluding holidays. During these times, calls are received at the District Office front desk and forwarded to the Treatment and Distribution Supervisor, who then notifies the Director of Operations if necessary.

The first party to the spill site is the First Responder. The First Responder may be any District Operations or Maintenance staff.

The Treatment and Distribution Supervisor deploys available staff for spill investigation and response. District staff investigate as to whether the spill is from a public or private sewer blockage and also determine whether an outside contractor is needed for containment and to clear a blockage. When necessary, information collected at the site is also relayed by the Treatment and Distribution Supervisor to the Director of Operations, who informs the District's General Manager.

If the spill is from a private facility, the District is available to make recommendations to the property owner on how to proceed with clean-up. However, the District is not legally authorized to mandate private spill response procedures.

If the spill is from a District sewer blockage and an outside party is needed for containment and clearing of the blockage, Roy's Sewer Service is contacted. If Roy's staff is unavailable, depending on the urgency of the situation, Novato Sanitary District is called. District personnel, will arrive on scene to accompany Roy's staff.

In the event of a blockage resulting in a spill, Roy's is asked to remove the blockage using their equipment. In the event of a sewer break, sewage is diverted around the break area (most likely by pumping from the upstream to the downstream manhole), and then the line is repaired by District staff or by a third party. All visible debris is collected and diverted back into the sewer system. Any spill remnants that cannot be directly put back into the sewer system are contained, decontaminated, and retrieved for disposal.

If the spill is a Category 1 spill, the Director of Operations makes the initial (2-hour) notification to Cal OES.

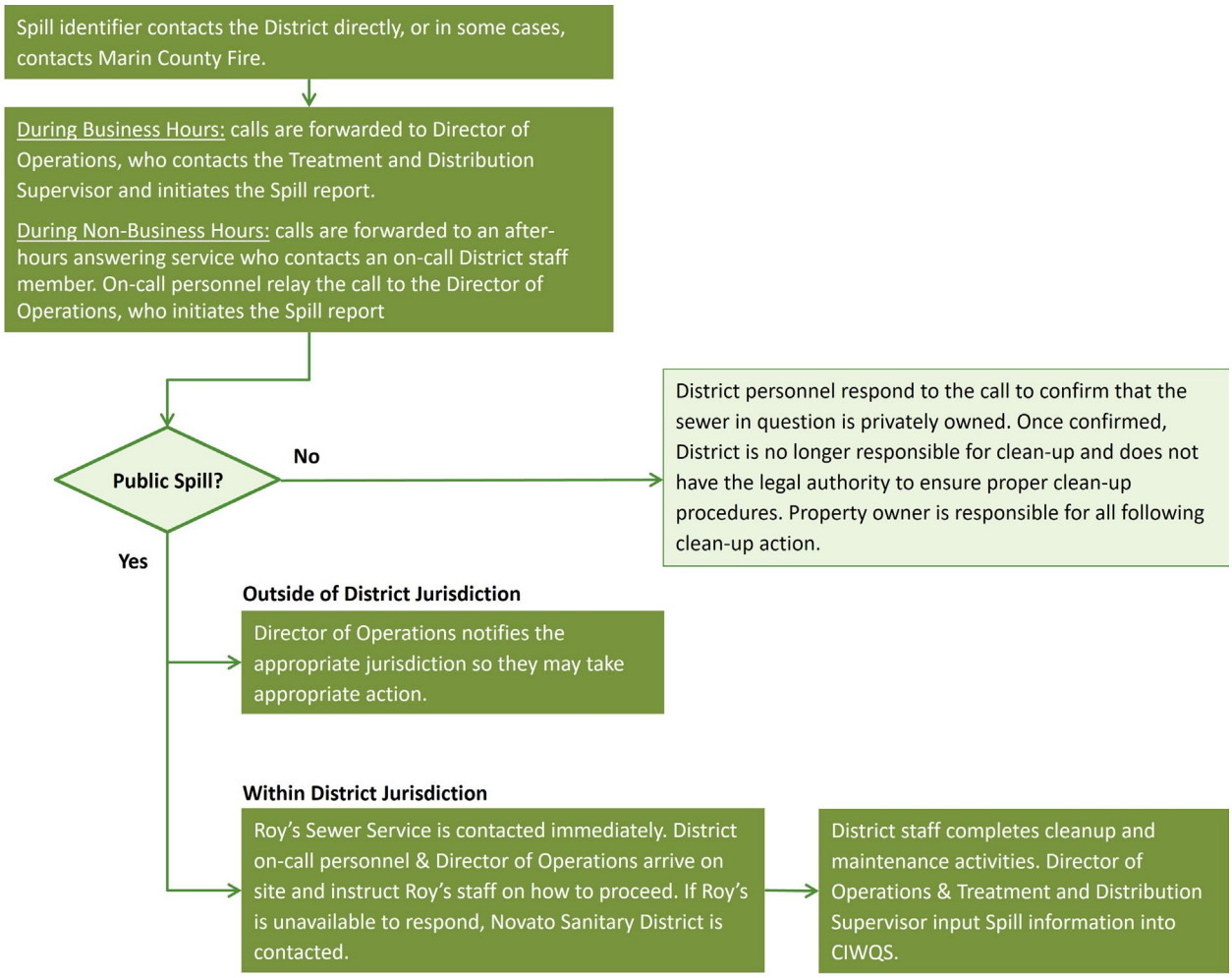
3.3. Notification During Non-Business Hours

During non-business hours, notification is automatically forwarded from the District's main number to on-call staff, who notifies the on-call operator. Alternatively, the on-call operator could receive a SCADA alarm. If required, the on-call operator elevates the issue to the Treatment and Distribution Supervisor. If further elevation is required, the issue is discussed with the Director of Operations. If the call is made to 9-1-1, the receiving agency, which is often the Marin County Fire Department, redirects the call to the District's main number.

One staff member is assigned to be on-call for a 7-day rotational period to support after-hours duties. The Treatment and Distribution Supervisor and/or Director of Operations deploy other staff as needed, to support the on-call staff member. Other responders may include contract support.

After the call is received by the District, spill response and reporting proceed in the same manner as during normal working hours.

FIGURE 3.1 CHAIN OF COMMUNICATION



4. SPILL RESPONSE PROGRAM

4.1. Responsibilities & Priorities

The following District and Contract Operators are responsible for responding to spills:

- First Responder to Spills: District personnel trained in spill response typically serve as the First Responder to the spill location. The First Responder may be any District Operations or Maintenance staff. Roy's Sewer Service will be contacted to assist if necessary. If Roy's Sewer Service is not available, Novato Sanitary District will be contacted.

- First Responder to Lift Station Failures: Maintenance personnel trained in spill response typically serve as the First Responder to lift station failures. If maintenance personnel are unavailable, Operations staff would respond.

- Claims Processing: Director of Administrative Services with legal support from District Counsel.

The contact information for those currently holding the positions named above are included in Appendix SERP-A at the end of this section.

The first responder's priorities are as follows:

- To follow safe work practices, including those related to traffic control, confined space, and employee and public safety
- To respond promptly with the appropriate equipment
- To evaluate the cause of spill and determine responsibility
- To restore the flow as soon as possible
- To contain the spill when feasible
- To minimize public access to and/or contact with the spilled sewage

4.2. Available Equipment

The District works with Roy's Sewer Service or an alternative Contract Operator to provide sufficient equipment for spill response. District staff have access to Roy's Sewer Service 24/7 if required. Equipment available from the District includes the following:

- Pumps including electric sewer sump pump
- 2-inch hose – hard hose comes out of manhole; lay-flat hose in 50' sections to transfer to downstream manhole
- Generator and power cord
- Pig bags for absorbing liquid to become sand bags
- 6-inch repair clamps and pipe
- Inflatable sewer plug
- Tyvec suits
- Nitrile gloves

Additional equipment to be provided by Contractor Operator may include:

- Combination Vacuum and Hydrojet truck
- Push cameras
- Hand-held GPS unit
- Trash pump and hoses

- Vacuum trailer
- Disposable cameras
- Spill berm & Spill mat
- Spill Shark (water based spill absorbent)
- 6-inch and 2-inch pumps

In addition, the Main Lift Station has a stationary stand-by generator that automatically starts with a power outage.

4.3. Initial Response

Figure 4.1 provides a general spill response flowchart. The First Responder targets an initial response time of 120 minutes from the initial spill report with the objective of minimizing and/or eliminating a spill. The appropriate response measure varies based on the circumstances and nature of the spill and the information provided by the caller. Actions related to external and internal spills are summarized below. Internal spills affect private properties.

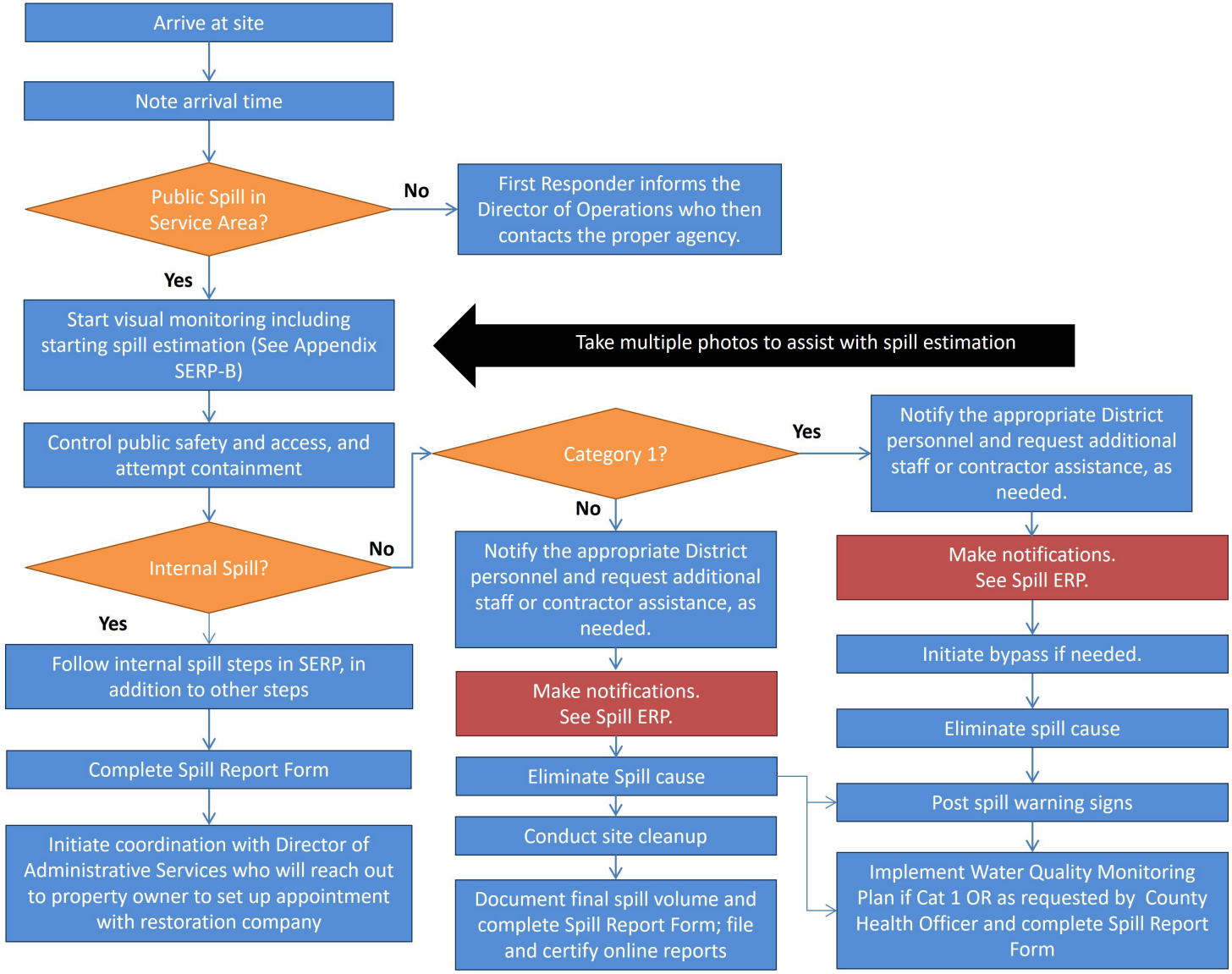
4.3.1. External Spill

External spills occur in the public right-of-way. Upon arrival at the site, the First Responder should complete the following:

- Note arrival time at spill site, and include the time in the applicable Spill Reporting Form (See Appendix SERP-A). Record basic incident information on site, and complete the form after finishing the response.
- Verify the existence of the spill.
- Field-verify the address and nearest cross street, and confirm that the spill is part of the District's sewer/conveyance system.
- Conduct visual monitoring to determine immediate actions, including determination if the spill reached surface waters or drainage culverts, and documentation of spill volume using the methods included in Appendix SERP-B.
- Notify Director of Operations or Treatment and Distribution Supervisor and relay preliminary observations.
- If the spill is a Category 1 spill and is greater than or equal to 1000 gallons, the District Director of Operations will notify Cal OES and the County Health Department within 2 hours following identification of the spill. Spill categories are defined in Table 2.1, above.
- Begin activities to contain, mitigate, and minimize impacts from the spill, and restore flow.

- If the blockage cannot be cleared within a reasonable time, or the sewer requires construction repairs to restore flow, then initiate containment and/or bypass pumping.
- Identify and clearly assess the affected area and extent of spill, including possible impacts on surface water. Where it is safe and practical, visually inspect surface water in the vicinity of the spill and record observations on the applicable Spill Report Form. Signs of receiving water impacts include clear signs of sewage (solids, grease, paper), abnormal color, fish kills, etc.
- The California Department of Fish and Wildlife (CDFW), Bay Delta Region (Table 6.2), should be notified in the event a spill impacts any creeks, cullies, or natural waterways. CDFW will provide guidance associated with cleanup. Cleanup should proceed quickly, and any water used in the process should be dechlorinated prior to reaching a storm drain.
- The Director of Operations notifies the General Manager if the spill appears to be large (over 1,000 gallons), in a sensitive area, may imminently and substantially endanger human health, results in fish kills, if there is doubt regarding the extent, impact, or how to proceed, or if additional help is needed for line cleaning or repair, containment, recovery, lab analysis, and/or site cleanup.
- Where safe and feasible, take necessary water quality samples at the point of discharge and at upstream and downstream locations. Use best judgment and consult with contract responders and/or the Treatment and Distribution Supervisor and Director of Operations if uncertain. Water quality monitoring is not given precedence over stopping the spill or protecting public health. However, if sufficient personnel are available, monitoring is conducted in parallel with these activities or with the cleanup effort.
- Comply with all safety precautions (traffic, confined space, etc.).
- Contact caller, if time permits. Identify spill cause, including conducting closed-circuit television (CCTV) inspection as appropriate.
- Document all activities through photos and written documentation.
- The First Responder should provide the completed Spill Reporting Form to the Director of Operations. The Director of Operations will enter the information in the CIWQS database as required to meet SWRCB deadlines.

FIGURE 4.1 GENERAL SPILL RESPONSE FLOWCHART



4.3.2. Internal Spill

An internal spill occurs inside a private property. Upon arrival at the location of a spill into a house or a building, the First Responder should evaluate and determine if the spill was caused by a blockage in the lateral or in the District-owned sewer main. If a blockage is found in a property owner's lateral, it should be clearly communicated that response and repair of private laterals is not the District's responsibility. The homeowner is responsible for clearing any blockage in the home's plumbing system or private lateral and for any resulting flood damage to the structure. The homeowner is also responsible for damage that happens because a lateral was not properly installed.

If a backup in the District's main line is found to have caused the spill in a house or building, the First Responder should take steps to address the issue as described above. The First Responder should instruct the property owner to follow the following guidelines:

- Keep all family members and pets away from the affected area.
- Place towels, rags, blankets, etc. between areas that have been affected and areas that have not been affected.
- Move any uncontaminated property away from the spill area. Do not remove any contaminated items.
- Turn off the HVAC system.

The First Responder should follow the following steps to assist the homeowner:

- Gather information from the homeowner.
- Initiate coordination to schedule cleaning by a restoration company.
- Forward applicable Spill Report Form and related documents to the Director of Operations and Director of Administrative Services.

4.3.3. Lift Station or Forcemain Spill

In the event of equipment failure resulting in a spill at a Lift Station, the protocol and response is similar to that of a spill occurring in a pipe. Temporary repairs will be completed by District staff or an external contractor and operations must be restored quickly. The force main lift station at the Tahiti Way site has a standby generator that will automatically start and provide back-up power. The North Street lift station will require a portable generator to be connected to the lift station until power is restored; typical lead time is 4 hours for a generator to be set up.

In the event of structural failure in a force main resulting in a spill, the first action is to turn off the pump to prevent additional pressurized discharge. Following this step, similar protocol as above should be followed. The force main should be repaired as quickly as possible. If failure is too severe to allow an immediate repair, emergency measures should be taken. These measures could include contracting with a septic tank pumping company to haul sewage from the lift

station to the District's treatment ponds. A list of haulers and contractors that perform work for the District is listed below:

- City Sewer Service, Pt. Reyes Station: (415) 663-1926
- Roto Rooter, San Rafael: (415) 454-7281
- Roy's Sewer Service: (415) 892-5480
- Petaluma Septic Service: (707) 888-2822

All visible debris should be cleaned up within the vault and any spill outside of the vault will require decontamination, retrieval, and disposal of solids.

The District has developed a separate lift station emergency response plan ("PS-ERP") that is included in Appendix SERP-B. The PS-ERP provides additional information about the stations, and is a supplement to (i.e., does not replace) the information in this SERP.

4.3.4. Containment or Bypass

The First Responder should attempt to contain as much of the spilled sewage as possible using the following steps:

- Determine the immediate destination of the spill.
- Plug storm drains using available equipment and materials to contain the spill, where feasible. If spilled sewage has made contact with the storm drainage system, attempt to contain the spilled sewage by plugging downstream storm drainage facilities.
- Contain/direct the spilled sewage using dikes/dams or sandbags.
- Pump around the blockage/pipe failure/lift station or vacuum flow from upstream of the blockage and dispose of downstream of the blockage to prevent further spills.
- If a spill reaches a water body, follow the requirements below for posting and spill notification signage (see Appendix SERP-B for example signs). Also, conduct water quality sampling as discussed above.

4.3.5. Spill Volume Estimation

Accurate spill volume estimation and thorough documentation of the processes used to estimate spill volumes have a high priority in spill response.

Use the methods outlined in the Appendix SERP-B to estimate the volume of the spilled sewage. Wherever possible, document the estimate using photos of the spill site before and during the recovery operation. If possible, use at least two methods to confirm the accuracy of the estimated spill volume.

Some spills may occur in locations where the wastewater can seep into the ground or flow away from the spill location. In such conditions, consider when the spill was first detected and observations from bystanders in order to determine the total spill volume.

4.4. Impact to Waters of State

If a spill is confirmed to have entered waters of the State[2], the Director of Operations must be notified immediately. The Director of Operations will notify the General Manager. The response team would then proceed with the following additional activities:

- Determine the extent of the spill by investigating downstream until there is no evidence of sewage or debris along the creek or water body.
- Conduct Water Quality Sampling, following the process described below. If the spill is 50,000 gallons or greater, collect water quality samples **within 18 hours** of becoming aware of the spill. Water quality sampling will be conducted by District Water Quality Division staff. If unavailable, qualified District operators may collect the samples.
- Perform daily water quality sampling (or sampling per EHS) until compliance is achieved.
- Immediately post contaminated water sign(s) and protect the water body from public access on all sides.
- Photograph sign placement and evidence of the spill in and around the water body to the farthest point reached by the sewage.
- Determine if the water body is safe to enter. During the winter storm season, cleaning the water body may not be feasible due to high water flows.
- If feasible, block the water body downstream of the affected area in a location that is safe to enter and is accessible to set up a pump or utilize other sewer cleaning equipment.
- To the extent feasible, recover and return contaminated water to the collection system.
- Perform follow-up sampling until the area shows no water quality impairment and the posted signs can be removed. The Director of Operations ultimately determines when this happens and makes any follow up calls to affected agencies.

4.4.1. Water Quality Sampling

Water quality sampling and testing is required by the Statewide WDR whenever 50,000 gallons or greater of spilled sewage enter a water body. The purpose of testing is to determine the extent and impact of the spill. The guidelines listed below must be followed.

[2] Waters of the State include any surface water or groundwater, including saline waters, within the boundaries of the state as defined in Water Code section 13050(e), and are inclusive of waters of the United States.

- The Operator in Charge, Treatment and Distribution Supervisor, or the Director of Operations should arrange for the collection of samples. Samples should be collected as soon as possible, and **within 18 hours** of initial knowledge of the spill event.
- Records of monitoring information should include the date, exact place, and time of sampling or measurements, the individual(s) who performed the sampling or measurements, the date(s) analyses were performed, the individual(s) who performed the analyses, the analytical technique or method used, and the results of such analyses.
- The required water quality sampling procedures are as follows:
  - Collect one water sample, each day of the duration of the spill, upstream of the spill entry point if sewage discharges to a surface water via a drainage conveyance system, and/or
  - Three receiving water sampling locations (upstream, at the spill entry point, and downstream)
  - If the receiving water has no flow during the duration of the spill, report "No Sampling Due To No Flow" for the receiving water sampling locations
  - Analyze the collected receiving water samples for Ammonia and the appropriate other bacterial indicator(s) that include one or more of the following, unless directed otherwise by the Regional Water Board: Total Coliform Bacteria, Fecal Coliform Bacteria, E-coli, and/or Enterococcus.
  - Collect and analyze additional samples as required by the applicable Regional Water Board Executive Officer or designee

Sample locations are described further in Table 4.1.

TABLE 4.1 SAMPLING LOCATIONS FOR SPILLS 50,000 GALLONS OR GREATER

Sampling Location	Description
• DCS-001	• A point in a drainage conveyance system before the drainage conveyance system flow discharges into a receiving water.
• RSW-001 Point of Discharge	• A point in the receiving water where sewage initially enters the receiving water.
• RSW-001U: Upstream of Point of Discharge	• A point in the receiving water, upstream of the point of sewage discharge, to capture ambient conditions absent of sewage discharge impacts.
• RSW-001D: Downstream of Point of Discharge	• A point in the receiving water, downstream of the point of sewage discharge, where the spill material is fully mixed with the receiving water.

- Sample analysis must be conducted according to sufficiently sensitive test methods approved under 40 Code of Federal Regulations Part 136 for the sample analysis of pollutants. A method is considered sufficiently sensitive when the minimum level of the

analytical method approved under 40 Code of Federal Regulations Part 136 is at or below the receiving water pollutant criteria.

- The analysis of water quality samples required per this General Order must be performed by a laboratory that has accreditation pursuant to Article 3 (commencing with section 100825) of Chapter 4 of Part 1 of Division 101 of the Health and Safety Code. (Water Code section 13176(a).) The State Water Board accredits laboratories through its Environmental Laboratory Accreditation Program (ELAP).

For spills less than 50,000 gallons, water quality sampling may be required by, and directions should be taken from EHS.

The water quality sampling procedures should follow EHS procedures as follows:

- Keep the sterile collection bottle closed until it is to be filled. Do not contaminate the inner surface of the lid or bottle rim.
- Collect a water sample just below the surface, in knee deep water, approximately 3 feet deep (full arm's length), without rinsing. If needed, extend the sampling pole to the fullest length to reach deeper water depth. Minimize contact with the bank or beach bed as water fouling may occur.
- Remove the cap and hold the bottle near its base and plunge it, neck downward, below the surface
- Turn the bottle until the neck points slightly upward and the mouth is directed toward the current. Fill the bottle, leaving about 1 inch of air to allow the lab to mix by shaking. Collect a minimum of 100 mL. (If applicable, insert sterile collection bottle into the holder on the sample pole. Extend the sample pole and plunge the bottle end into the water, bottle opening downward.)
- Immediately place the cap securely on the bottle to avoid leaks and contamination
- Dry the bottle
- Label container with distinctive sample site name, date, and time collected
- Complete the laboratory requisition slip with requested information (site, bottle number, collector, date and time of collection, type of sample, test requested, name and phone number of the responsible person for reporting purposes, and deliverer name). Note any field observations that may have occurred during the sampling.
- Samples should be tested for ammonia (if 50,000 gallons or greater), fecal coliform, total coliform, and enterococcus.
- Samples should be stored and shipped by placing the water sample bottle in a cooler with frozen blue ice. The water sample must be kept cool. Ice may be used but care must be taken so water samples are not contaminated or diluted by the ice.

Water samples are taken to **District Laboratory, located at 999 Rush Creek Pl, Novato, CA 94945**. The water samples must be brought to the laboratory within 8 hours of collection, before 3:00 p.m., for processing.

If a spill occurs during the weekend, the First Responder shall coordinate with the laboratory on-call personnel to provide the water samples. If on-call District Water Quality laboratory staff are unavailable, the First Responder may use an alternate qualified laboratory or other prearranged analytical support capable of meeting required sample-handling and analytical timeframes.

4.4.2. Spill Technical Report

If 50,000 gallons or greater spill reaches surface waters, a Spill Technical Report must be prepared and submitted to the CIWQS online spill database within 45 calendar days of the spill end date. A template for the Spill Technical Report is included in Appendix SERP-C. The Spill Technical Report must include, at a minimum, the following:

1. Spill causes and circumstances, including at minimum:
    a. Complete and detailed explanation of how and when the spill was discovered;
    b. Photographs illustrating the spill origin, the extent and reach of the spill, drainage conveyance system entrance and exit, receiving water, and post-cleanup site conditions;
    c. Diagram showing the spill failure point, appearance point(s), the spill flow path, and ultimate destinations;
    d. Detailed description of the methodology employed, and available data used to calculate the discharge volume and, if applicable, the recovered spill volume;
    e. Detailed description of the spill cause(s);
    f. Description of the pipe material, and estimated age of the pipe material, at the failure location;
    g. Description of the impact of the spill;
    h. Copy of original field crew records used to document the spill; and
    i. Available historical maintenance records for the failure location.
2. The District's response to the spill:
    a. Chronological narrative description of all actions taken by the District to terminate the spill;
    b. Explanation of how the SERP was implemented to respond to and mitigate the spill; and
    c. Final corrective action(s) completed and a schedule for planned corrective actions, including:
        i. Local regulatory enforcement action taken against an illicit discharge in

response to this spill, as applicable,

ii. Identifiable system modifications, and operation and maintenance program modifications needed to prevent repeated spill occurrences, and

iii. Necessary modifications to the SERP to incorporate lessons learned in responding to and mitigating the spill.

3. Water Quality Monitoring, including at minimum:
   a. Description of all water quality sampling activities conducted;
   b. List of pollutants and parameters monitored, sampled, and analyzed;
   c. Laboratory results, including laboratory reports;
   d. Detailed location map illustrating all water quality sampling points; and
   e. Other regulatory agencies receiving sample results (if applicable).
4. Evaluation of spill impact(s), including a description of short-term and long-term impact(s) to beneficial uses of the surface water.

The Director of Operations will enter the information in the CIWQS database and certify the spill as the designated LRO. The Treatment and Distribution Supervisor will review the certified spill report and advise of any potential changes that should be made to amend the certification.

4.4.3. Spill Notification Signage

Barriers shall be installed to prevent the public from having contact with the sewage. Signs should be posted to keep vehicles and pedestrians away from contact with spilled sewage. Signs should remain in place until removal of the signs is directed by the Director of Operations, as advised by EHS.

If a creek, stream, and/or beach have been contaminated as a result of a spill, notifications should be posted at visible access locations until the risk of contamination has subsided to acceptable background levels. The warning signs, once posted, should be checked every day to ensure that they are still in place. “Closed” signs should be posted at the outfall and a minimum of 100 feet upstream and 100 feet downstream of the discharge. If there is a large volume of sewage, more signs must be posted downstream.

Signs must remain posted until at least two consecutive days of sampling meet the Public Beach Sanitation and Ocean Water-Contact Sports standards that are described above. The removal of signs must be approved by EHS and the County Public Health Officer.

4.5. Recovery and Cleanup

The recovery and cleanup phase begins immediately after the flow has been restored and the spill has been contained to the extent possible. Spilled sewage shall be vacuumed or pumped and returned to the greatest extent possible back into the sanitary sewer system.

The spill recovery and cleanup procedures include volume estimation, sewage recovery, and cleanup and disinfection.

4.5.1. General

Clean up and disinfection procedures should be implemented to reduce the potential for human health issues and adverse environmental impacts that are associated with a spill event. The procedures described are for dry weather conditions and should be modified as required for wet weather conditions. Clean up should proceed quickly in order to minimize negative impact. Any water that is used in the cleanup process should be de-chlorinated prior to use.

Where cleanup is beyond the capabilities of District staff, the Director of Operations should work with the Treatment and Distribution Supervisor to contact a cleanup contractor to complete the work.

Spills inside houses or buildings should be cleaned by a professional cleaning company. Claims by homeowners should be forwarded to the District's Director of Administrative Services.

4.5.2. Guidelines for Cleanup

On **hard surface areas**, collect all signs of sewage solids and sewage-related material either by hand or with the use of rakes, brooms, and shovels. Take reasonable steps to contain and vacuum up the wastewater. Wash down the affected area with clean water and/or non-toxic biodegradable surface disinfectant until the water runs clear. Allow area to dry. Repeat the process if additional cleaning is required.

On **landscaped or unpaved areas**, collect all signs of sewage solids and sewage-related material either by hand or with the use of rakes, brooms, and shovels. Wash down the affected area with clean water until the water runs clear. Either contain or vacuum up the wash water so that none is released. Allow the area to dry. Repeat the process if additional cleaning is required. Outside contractors are hired to dispose larger volumes of contaminated soils.

Operators will use PPE such as gloves and glasses during cleanup operations.

If the spill has reached the **storm drain system**, the District's contract responder should be called and use a combination sewer cleaning truck to vacuum/pump out the catch basin and any other portion of the storm drain that may contain sewage. In the event that a spill occurs at night, the location should be re-inspected as soon as possible the following day. The operator should look for any signs of sewage solids and sewage-related material that may warrant additional cleanup activities.

4.6. Coordination with Storm Drain and Other Utility Agencies

The District plans to establish communication procedures with storm drain and other applicable utilities for spill response by June 30, 2027. These procedures will be incorporated into the SERP upon completion.

The stormwater system within the Oceana Marin service area is maintained by the Oceana Marin Homeowner's Association. Water service within the area is primarily provided by Estero Mutual Water Company, with some areas served by California Water Service Company.

During a sewer spill or other emergency that may affect these utility systems, District personnel will coordinate with the appropriate utility agency using the contact information provided below.

- Oceana Marin Association (OMA) (707) 878-2480
- Estero Mutual Water Company (707) 878-2400
- California Water Service Company, Redwood Valley District (800) 220-4299

4.7. Post-Spill Assessment and Annual Review

Staff will meet regularly to review the procedures used and to discuss what worked and where improvements could be made in preventing, responding to, and mitigating future spill events. The results of the debriefing will be documented through the District's CMMS (NEXGEN) to support the completion of action items as scheduled. The objective of the post-spill assessment is to determine the cause of the spill and to identify corrective actions needed that will reduce or eliminate future potential for the spill to recur or for other spills to occur.

In addition, the District will review and evaluate the SERP and its effectiveness at mitigating spills annually. Based on this review, the SERP will be updated as necessary.

5. SPILL DOCUMENTATION

In accordance with the WDR, the District shall maintain spill-related records as follows:

1. Records are retained for at least five (5) years
2. Records are readily available, either electronic or hard copies, for review by Water Board staff during onsite inspections or through an information request
3. Records are retained for each of the following spill-related events and activities:
    a. Spill event complaints
    b. Category 4 spills (supplements Cat 1 through 3 documentation that is retained as part of regulatory reporting)
    c. Sewer system telemetry records
    d. Sewer system management plan implementation records
    e. Audit records
    f. Equipment Records
    g. Work orders

Specific requirements for recordkeeping are listed below.

5.1. Spill Event Complaints

The District shall maintain records for each of the following spill-related events and activities:

- Spill event complaint, including but not limited to records documenting how the District responded to notifications of spills. Each complaint record must, at a minimum, include the following information:
    - Date, time, and method of notification;
    - Date and time the complainant first noticed the spill, if available;
    - Narrative description of the complaint, including any information the caller provided regarding whether the spill has reached surface waters or a drainage conveyance system, if available;
    - Complainant's contact information, if available; and
    - Final resolution of the complaint.
- Records documenting the steps and/or remedial action(s) undertaken by the District;
- Records documenting how estimate(s) of volume(s) and, if applicable, volume(s) of spill recovered were calculated;
- All California Office of Emergency Services notification records, as applicable; and
- Water quality monitoring records.

5.2. Recordkeeping of Category 4 Spills

The District must maintain the following records for each individual Category 4 spill:

a. Contact information: Name and telephone number of District contact person to respond to spill-specific questions;

b. Spill location name;

c. Description and GPS coordinates for the system location where the spill originated;

d. Did the spill reach a drainage conveyance system? If Yes:

    a. Description of drainage conveyance system location;

    b. Estimated spill volume fully recovered within the drainage conveyance system;

    c. Estimated spill volume remaining within the drainage conveyance system; and

    d. Estimated total spill volume exiting the sanitary sewer system.

2. Spill date and start time;

3. Spill cause(s) (for example, root intrusion, grease deposition, etc.);

4. System failure location (for example, main, pump station, etc.);

5. Description of spill response activities, including description of immediate spill containment and cleanup efforts;

6. Description of how the volume estimation was calculated, including, at minimum:
   a. The methodology and type of data relied upon, including supervisory control and data acquisition (SCADA) records, flow monitoring or other telemetry information used to estimate the volume of the spill discharged, and the volume of the spill recovered (if any volume of the spill was recovered); and
   b. The methodology and type of data relied upon to estimate the spill start time, on-going spill rate at time of arrival (if applicable), and the spill end time.
7. Description of implemented system modifications and operating/maintenance modifications.

5.3. Recordkeeping for Total Annual Spill Information

The District shall keep the following records summarizing annual spills:

1. Estimated total annual spill volume;
2. Description of spill corrective actions, including at minimum:
   a. Local regulatory enforcement action taken against the sewer lateral owner in response to a spill, as applicable; and
   b. System operation, maintenance and program modifications implemented to prevent repeated spill occurrences at the same spill location.

5.4. Sewer System Telemetry Records

The District shall maintain the following sewer system telemetry records if used to document compliance with Statewide WDR, as applicable:

1. Supervisory control and data acquisition (SCADA) system(s);
2. Alarm system(s);
3. Flow monitoring device(s) or other instrument(s) used to estimate sewage flow rates, and/or volumes;
4. Computerized maintenance management system records; and
5. Asset management-related records.

5.5. Sewer System Management Plan Implementation Records

The District shall maintain records documenting the implementation of its Sewer System Management Plan, including documents supporting its Sewer System Management Plan audits, corrections, modifications, and updates to the Sewer System Management Plan.

5.6. Audit Records

The District shall maintain, at minimum, the following records pertaining to its Sewer System Management Plan audits, and other internal audits:

1. Completed audit documents and findings;
2. Name and contact information of staff and/or consultants that conducted or involved in the audit; and
3. Follow-up actions based on audit findings.

5.7. Equipment Records

The District shall maintain a log of all owned and leased sewer system cleaning, operational, maintenance, construction, and rehabilitation equipment.

5.8. Work Orders

The District shall maintain record of work orders for operations and maintenance projects. Most equipment is replaced when it has reached the end of its service life. Pump heads are replaced when performance shows limited efficiency.

5.9. Spill Specific Monitoring

Spill-specific monitoring means the gathering of information and data for a specific spill event to be reported or kept as records. The WDR requires the following assessments, as a component of data gathering following a spill.

5.9.1. Spill Location and Spread

The District shall visually assess the spill location(s) and spread using photography, global positioning system (GPS), and other best available tools. The District shall document the critical spill locations, including:

- Photography and GPS coordinates for:
  - The system location where spill originated; or
  - For multiple appearance points of a single spill event, the points closest to the spill origin.
- Photography for:
  - Drainage conveyance system entry locations;
  - The location(s) of discharge into surface waters, as applicable;
  - Extent of spill spread; and

- The location(s) of clean up.

5.9.2. Spill Volume Estimation

Use the methods outlined in Appendix SERP-B to estimate the volume of the spilled sewage.

Some spills may occur in locations where the wastewater can seep into the ground or flow away from the spill location. In such conditions, consider when the spill was first detected and observations from bystanders in order to determine the total spill volume.

6. REGULATORY REPORTING

This section describes the requirements that have been established for reporting of spills to the regulatory agencies.

Table 6.1 on the following page lists regulatory reporting requirements and timelines that are also described further in this section. Table 6.2 provides contact and access information for regulatory reporting.

TABLE 6.1 REGULATORY REPORTING REQUIREMENTS

If Spill	Then Notify
Category 1 Spill: 1000 gallons or more reaching a surface water or with the potential to reach a surface water.	**2-Hour Notification to** Cal OES: (800) 852-7550. Ask for an OES Control Number (for RWQCB). County Health Officer (925) 313-6712 and Contra Costa County Environmental Health Services (EHS) (925) 608-5500 are also to be contacted. **Within 3 Business Days** of Notification report to SWRCB using CIWQS **Within 15 Calendar Days** of Conclusion of Response certify by LRO using CIWQS **Within 45 Calendar Days of Conclusion of Response** submit spill Technical Report via CIWQS online database if 50,000 gallons or more **Additional Notification as Needed** – California DFWS: (707)-944-5500
Category 2 Spill: 1,000 gallons or more without the potential to reach surface waters.	**Within 3 Business Days** of Notification report to SWRCB using CIWQS. **Within 15 Calendar Days** of Conclusion of Response certify by LRO using CIWQS.
Category 3 Spill: 50 gallons to 999 gallons without the potential to reach surface waters. Category 4 Spill: 49 gallons or less, not reaching surface waters.	**Within 30 Calendar Days** past End of Month with Spill Event, report to SWRCB and certify by LRO using CIWQS. **By February 1 of the Year Following the Year in Which Cat 4 Spills Occurred** submit annual report to SWRCB and Certify by LRO using CIWQS.
No Spill Reporting: (no spills in month.	**Within 30 Calendar Days** past End of Month report by LRO to SWRCB using CIWQS.
Annual Report (Was Collection System Questionnaire)	Update and certify April 1 beginning in 2024

TABLE 6.2 CONTACT AND ACCESS INFORMATION FOR REGULATORY REPORTING

California Integrated Water Quality System (CIWQS)

SWRCB REPORTING TIMEFRAMES DEPEND ON THE SIZE AND FINAL DESTINATION OF THE SPILL
• CIWQS must be used for reporting if the website is available (http://ciwqs.waterboards.ca.gov)
  ○ User Name: XXXX
  ○ Password: XXXX
  ○ Waste Discharge Identification Number (WDID): 1SSO10052
• The spill database will automatically generate an email notification with customized information about the spill upon initial reporting and final certification for all Category 1 spills.
• In the event that the CIWQS website is down, take a screenshot of the error message and contact ciwqs@waterboards.ca.gov (866-792-4977).
• If the spill information is time-sensitive, document the information and provide it directly by email to the CA North Coast RWQCB at RB1SpillReporting@waterboards.ca.gov (707) 576-2220 until CIWQS is restored.

Two-Hour Notification

• State Office of Emergency Services (OES) Phone: (800) 852-7550. Make sure you ask for an "OES CONTROL NUMBER"
• Marin County Environmental Health Services
  ○ Deputy Director (415) 473-6907
• Marin County Health and Human Services
  ○ Public Health Officer (415) 473-4163
• RWQCB Region 1 (CA North Coast)
  ○ Phone – Day: (707) 576-2220
  ○ Online: RB1SpillReporting@waterboards.ca.gov
• California Department of Fish & Wildlife, Bay Delta Region (707) 428-2002

Other Contact Information
• County Sheriff's Office (415) 473-7250

6.1. Multiple Appearance Points – Single Spill

For reporting purposes, if one spill event of whatever category results in multiple appearance points in a sewer system, a single spill report is required in CIWQS which includes the GPS coordinates for the location of the spill appearance point closest to the failure point, blockage or location of the flow condition that caused the spill, and descriptions of the locations of all other discharge points associated with the single spill event.

6.2. 2-Hour Notification to Regulatory Agencies of Spills

Cal OES is only to be notified of a Category 1 spill greater than or equal to 1,000 gallons discharged to surface water or spilled in a location where it probably will be discharged to surface water. In addition, the County Public Health Officer is to be contacted at (415) 473-4163 and County Environmental Health Services at (415) 473-6907 during regular business hours. During evenings/weekends, call the County Sheriff's Office at (415) 473-7250.

The District's Director of Operations & Treatment and Distribution Supervisor are responsible for reviewing field data for reporting to regulatory agencies. If it is determined that the criteria for OES notification was met, then the First Responder must notify OES of the event no later than two (2) hours after:

1. The District has knowledge of the spill;
2. Notification is possible; and
3. Notification can be provided without substantially impeding cleanup or other emergency measures.

The OES State Warning Center phone number is (800) 852-7550.

The First Responder or their designee is responsible for obtaining an OES Control number. Following the initial notification to OES and until the spill report is certified in the SWRCB online Spill Database, the LRO will provide updates (or provide direction for updates to be provided) to OES regarding substantial changes to the estimated volume of untreated or partially treated sewage discharged and any substantial changes to known impact(s).

6.3. Detailed Reporting Requirements

Table 6.1, above, provides details on the District's regulatory reporting process, which is also described below.

6.3.1. Spill Reporting for Category 1 Spills

6.3.1.1. Spill Reporting for Category 1 Spills – 3 Business Days of Becoming Aware of Spill

Cal OES and the County Health Officer shall receive notification of Category 1 spills greater than or equal to 1,000 gallons, as stated earlier in this Section.

The District's Data Submitter, currently the Director of Operations, must then submit the initial draft report to the SWRCB's CIWQS Online spill database @ http://ciwqs.waterboards.ca.gov/ciwqs within 3 business days of becoming aware of the spill.

Table 6.3 lists information that is required in the draft spill report. The data provided in the draft spill must be supplemented during the certification process, as discussed further below.

TABLE 6.3 CATEGORY 1 AND 2 CIWQS DRAFT SPILL REPORT – REQUIRED INFORMATION

Required Information for Category 1 and 2 Draft Spill Reports
1. Contact information: Name and telephone number of contact person to respond to spill-specific questions; 2. Spill location name; 3. Date and time the District was notified of, or self-discovered, the spill; 4. Operator arrival time; 5. Estimated spill start date and time; 6. Date and time the District notified the California Office of Emergency Services, and the assigned control number; 7. Description, photographs, and GPS coordinates of the system location where the spill originated; 8. If a single spill event results in multiple appearance points, provide GPS coordinates for the appearance point closest to the failure point and describe each additional appearance point in the spill appearance point explanation field; 9. Estimated total spill volume exiting the system; 10. Description and photographs of the extent of the spill and spill boundaries; 11. Did the spill reach a drainage conveyance system? If Yes: a. Description of the drainage conveyance system transporting the spill; b. Photographs of the drainage conveyance system entry location(s); c. Estimated spill volume fully recovered from the drainage conveyance system; d. Estimated spill volume remaining within the drainage conveyance system; e. Description and photographs of all discharge point(s) into the surface water; ** Items 12 and 13 are required for Category 1 spills only ** 12. Estimated spill volume that discharged to surface waters; and 13. Estimated total spill volume recovered.

6.3.1.2. Spill Certification for Category 1 Spills – 15 Calendar Days of the Spill End Date

Within 15 calendar days of the spill end date, the LRO must review and certify the report in the CIWQS Online spill database @ http://ciwqs.waterboards.ca.gov/ciwqs

The Certified Spill Report requires additional information to supplement the data provided in the Draft Spill Report.

Table 6.4 summarizes information that is required during spill certification.

TABLE 6.4 CATEGORY 1 CIWQS SPILL CERTIFICATION – REQUIRED INFORMATION

Required Information for Category 1 and 2 Spill Certification
1. Description of the spill event destination(s), including GPS coordinates if available, that represent the full spread and reach of the spill; 2. Spill end date and time; 3. Description of how the spill volume estimations were calculated, including at a minimum: a. The methodology, assumptions and type of data relied upon, such as supervisory control and data acquisition (SCADA) records, flow monitoring or other telemetry information used to estimate the volume of the spill discharged, and the volume of the spill recovered (if any volume of the spill was recovered); and b. The methodology(ies), assumptions and type of data relied upon for estimations of the spill start time and the spill end time; 4. Spill cause(s) (for example, root intrusion, grease deposition, etc.); 5. System failure location (for example, main, lateral, pump station, etc.); 6. Description of the pipe material, and estimated age of the pipe material, at the failure location; 7. Description of the impact of the spill; 8. Whether or not the spill was associated with a storm event; 9. Description of spill response activities including description of immediate spill containment and cleanup efforts; 10. Description of spill corrective action, including steps planned or taken to reduce, eliminate, and prevent reoccurrence of the spill, and a schedule of major milestones for those steps; 11. Spill response completion date; 12. Detailed narrative of investigation and investigation findings of cause of spill; 13. Reasons for an ongoing investigation (as applicable) and the expected date of completion; 14. Name and type of receiving water body(s); 15. Description of the water body(s), including but not limited to: a. Observed impacts on aquatic life; b. Public closure, restricted public access, temporary restricted use, and/or posted health warnings due to spill; c. Responsible entity for closing/restricting use of water body; and d. Number of days closed/restricted as a result of the spill. 16. Whether or not the spill was located within 1,000 feet of a municipal surface water intake; and 17. If water quality samples were collected, identify sample locations and the parameters the water quality samples were analyzed for. If no samples were taken, “Not Applicable” shall be selected.

6.3.1.3. Spill Technical Report

If 50,000 gallons or greater from a spill reaches surface waters, a Spill Technical Report must be prepared and submitted to the CIWQS online spill database within 45 calendar days of the spill end date. The LRO is responsible for submitting the Spill Technical Report. The required contents of the Spill Technical Report are discussed in Section 4.4, above.

6.3.1.4. Spill Amendments for Category 1 Spills – 90 Calendar Days of the Spill End Date

The District shall update or add additional information to a Certified Spill Report within 90 calendar days of the spill end date by amending the report or by adding an attachment to the Spill Report in the online CIWQS Sanitary Sewer System Database. The Enrollee shall certify the amended report. After 90 calendar days, the District shall contact the State Water Board at SanitarySewer@waterboards.ca.gov to request to amend a Spill Report. The Legally Responsible Official shall submit justification for why the additional information was not reported within the Amended Spill Report due date.

6.3.2. Spill Reporting for Category 2 Spills

6.3.2.1. Spill Reporting for Category 2 Spills – 3 Business Days of Becoming Aware of the Spill

Within 3 business days of becoming aware if the spill, the Data Submitter must submit the initial report to the SWRCB's CIWQS Online spill database at http://ciwqs.waterboards.ca.gov/ciwqs.

The draft report shall include Items 1 through 11 of the list provided above for the Category 1, 3-day draft report.

6.3.2.2. Spill Certification for Category 2 Spills – 15 Calendar Days of the Spill End Date

Within 15 calendar days of the spill end date, the LRO must review and certify the report in the CIWQS Online spill database @ http://ciwqs.waterboards.ca.gov/ciwqs.

The Spill Certification must include, in addition to the information provided in the draft report, the items shown in Table 6.5 on the following page.

TABLE 6.5 CATEGORY 2 CIWQS SPILL CERTIFICATION – REQUIRED INFORMATION

Required Information for Category 1 and 2 Spill Certification
1. Description of the spill event destination(s), including GPS coordinates if available, that represent the full spread and reach of the spill; 2. Spill end date and time; 3. Description of how the spill volume estimations were calculated, including at a minimum: a. The methodology, assumptions and type of data relied upon, such as supervisory control and data acquisition (SCADA) records, flow monitoring or other telemetry information used to estimate the volume of the spill discharged, and the volume of the spill recovered (if any volume of the spill was recovered); and b. The methodology(ies), assumptions and type of data relied upon for estimations of the spill start time and the spill end time; 4. Spill cause(s) (for example, root intrusion, grease deposition, etc.); 5. System failure location (for example, main, lateral, pump station, etc.); 6. Description of the pipe material, and estimated age of the pipe material, at the failure location; 7. Description of the impact of the spill; 8. Whether or not the spill was associated with a storm event; 9. Description of spill response activities including description of immediate spill containment and cleanup efforts; 10. Description of spill corrective action, including steps planned or taken to reduce, eliminate, and prevent reoccurrence of the spill, and a schedule of major milestones for those steps; 11. Spill response completion date; 12. Detailed narrative of investigation and investigation findings of cause of spill; 13. Reasons for an ongoing investigation (as applicable) and the expected date of completion; and 14. Whether or not the spill was located within 1,000 feet of a municipal surface water intake.

6.3.2.3. Amended Certified Spill Reports for Individual Category 2 Spills – 90 Calendar Days of the Spill End Date

The District shall update or add additional information to a Certified Spill Report within 90 calendar days of the spill end date by amending the report or by adding an attachment to the Spill Report in the online CIWQS Sanitary Sewer System Database. The LRO shall certify the amended report. After 90 calendar days, the District shall contact the State Water Board at SanitarySewer@waterboards.ca.gov to request to amend a Spill Report. The Legally Responsible Official shall submit justification for why the additional information was not reported within the Amended Spill Report due date.

6.3.3. Spill Reporting for Category 3 and 4 Spills

6.3.3.1. Monthly Spill Reporting for Category 3 Spills

Within 30 calendar days of the end of the calendar month in which the spill occurred, the LRO must submit and certify a report to the SWRCB's CIWQS Online spill database @ http://ciwqs.waterboards.ca.gov/ciwqs.

For each spill, the report shall include the information shown in Table 6.6.

TABLE 6.6 CATEGORY 3 CIWQS SPILL CERTIFICATION – REQUIRED INFORMATION

Required Information for Category 3 Spill Certification
1. Contact information: Name and telephone number of Enrollee contact person to respond to spill-specific questions; 2. Spill location name; 3. Date and time the Enrollee was notified of, or self-discovered, the spill; 4. Operator arrival time; 5. Estimated spill start date and time; 6. Description, photographs, and GPS coordinates where the spill originated: a. If a single spill event results in multiple appearance points, provide GPS coordinates for the appearance point closest to the failure point and describe each additional appearance point in the spill appearance point explanation field; 7. Estimated total spill volume exiting the system; 8. Description and photographs of the extent of the spill and spill boundaries; 9. Did the spill reach a drainage conveyance system? If Yes: a. Description of the drainage conveyance system transporting the spill; b. Photographs of the drainage conveyance system entry locations(s); c. Estimated spill volume fully recovered from the drainage conveyance system; and d. Estimated spill volume discharged to a groundwater infiltration basis or facility, if applicable. 10. Estimated total spill volume recovered; 11. Description of the spill event destination(s), including GPS coordinates, if available, that represent the full spread and reaches of the spill; 12. Spill end date and time; 13. Description of how the spill volume estimations were calculated, including, at minimum: a. The methodology and type of data relied upon, including supervisory control and data acquisition (SCADA) records, flow monitoring or other telemetry information used to estimate the volume of the spill discharged, and the volume of the spill recovered (if any volume of the spill was recovered); and b. The methodology and type of data relied upon to estimate the spill start time, on-going spill rate at time of arrival (if applicable), and the spill end time. 14. Spill cause(s) (for example, root intrusion, grease deposition, etc.); 15. System failure location (for example, main, pump station, etc.);

Required Information for Category 3 Spill Certification
16. Description of the pipe/infrastructure material, and estimated age of the pipe/infrastructure material, at the failure location; 17. Description of the impact of the spill; 18. Whether or not the spill was associated with a storm event; 19. Description of spill response activities including description of immediate spill containment and cleanup efforts; 20. Description of spill corrective actions, including steps planned or taken to reduce, eliminate, and prevent reoccurrence of the spill, and a schedule of the major milestones for those steps; including, at minimum: a. Local regulatory enforcement action taken against an illicit discharge in response to this spill, as applicable, and b. Identifiable system modifications, and operation and maintenance program modifications needed to prevent repeated spill occurrences at the same spill event location, including: i. Adjusted schedule/method of preventive maintenance; ii. Planned rehabilitation or replacement of sanitary sewer asset; iii. Inspected, repaired asset(s), or replaced defective asset(s); iv. Capital improvements; v. Documentation verifying immediately implemented system modifications and operating/maintenance modifications; vi. Description of spill response activities; vii. Spill response completion date; and viii. Ongoing investigation efforts, and expected completion date of investigation to determine the full cause of spill. 21. Detailed narrative of investigation and investigation findings of cause of spill.

6.3.3.2. Amended Certified Spill Reports for Individual Category 3 Spills – 90 Calendar Days of the Spill End Date

The District shall update or add additional information to a Certified Spill Report within 90 calendar days of the spill end date by amending the report or by adding an attachment to the Spill Report in the online CIWQS Sanitary Sewer System Database. The LRO shall certify the amended report. After 90 calendar days, the District shall contact the State Water Board at SanitarySewer@waterboards.ca.gov to request to amend a Spill Report. The Legally Responsible Official shall submit justification for why the additional information was not reported within the Amended Spill Report due date.

6.3.3.3. Monthly Spill Reporting for Category 4 Spills

Within 30 calendar days of the end of the calendar month in which the spill occurred, the Operator in Charge submits and the LRO certifies the estimated total spill volume exiting the sanitary sewer

system and the total number of all Category 4 spills to the SWRCB's CWIQS Online spill database @ http://ciwqs.waterboards.ca.gov/ciwqs.

6.3.3.4. Annual Spill Reporting for Category 4 Spills

The LRO must upload and certify a report, in an acceptable digital format, of all Category 4 spills to the online CIWQS Sanitary Sewer System Database, by February 1st after the end of the calendar year in which the spills occur.

6.3.4. No Spill or Category 4 Spills Certification (Monthly)

If either (1) no spills occur during a calendar month or (2) only Category 4 spills occur during a calendar month, the LRO shall certify, within 30 calendar days after the end of each calendar month, either a "No Spill" certification statement, or a "Category 4 Spills" certification statement in the online CIWQS Sanitary Sewer System Database, certifying that there were either no spills, or Category 4 spills that will be reported annually for the designated month.

If a spill starts in one calendar month and ends in a subsequent calendar month, and the District has no further spills of any category, in the subsequent calendar month, the LRO shall certify "no-spills" for the subsequent calendar month. If the District has no spills from its systems during a calendar month, but the District voluntarily reported a spill from a private lateral or a private system, the Operator in Charge submits and the LRO certifies "no-spills" for that calendar month.

6.3.5. CIWQS Not Available

In the event that the CIWQS online spill database is not available, the LRO should e-mail all required information to the SWRCB Spill Reduction Program office at SanitarySewer@Waterboards.CA.Gov in accordance with the time schedules identified above. In such an event, the District must also submit the appropriate reports using the CIWQS online spill database when the database becomes available. A copy of all documents that certify the submittal in fulfillment of this section shall be retained in the spill document file.

6.3.6. Amending Spill Reports

The LRO is responsible for amending spill reports. Certified spill reports may be updated by amending the report or adding an attachment to the spill report within 90 calendar days after the spill end date. After 90 days, the District must contact the State Spill Reduction Program to request to amend a spill report along with a justification for why the additional information was not available prior to the end of the 90 days. The SWRCB Spill Permit/Reporting contact information is as follows:

SanitarySewer@Waterboards.CA.gov

7. COMMUNICATIONS WITH THE PUBLIC

A sewer backup is a stressful event and may include interactions with an irate resident property owner. Professional presentation is important, as a homeowner will likely become unhappy if it is perceived that response staff are indifferent, uncaring, unresponsive, and/or incompetent.

7.1. General Communications

Effective management of a sewage backup situation is critical to avoid the potential for a costly, prolonged process with the property owner. The property owner should feel assured that the District is responsive and that their best interest is the District's top priority.

How you communicate, whether on the phone, in writing, or in person, is how you will be perceived. Good communication with the homeowner results in greater confidence in the District's ability to address the problem satisfactorily, and a greater chance that the property owner will be cooperative as the District completes response and follow-up activities. When interacting with an affected homeowner, consider the following:

- The homeowner needs ample time to explain the situation. Show interest in what the homeowner has to say. It does not matter if you have heard the story before or already understand the problem.
- As soon as possible, let the homeowner know that you will determine if the source of the sewer backup is in the sewer main and, if it is, will have it corrected as quickly as you can
- State that you understand their concern and then explain what can be done to address the issue, either by the District if applicable, or an outside contractor
- Do not admit fault. The determination of fault is handled by management staff. If it is determined that the District is at fault, the property owner has the right to file a claim for any reasonable repairs or losses resulting from the incident.
- Keep the homeowner informed on what is being done and will be done to correct the problem
- Keep focused on getting the job done in a very professional manner. Small talk and blame are not appropriate during the response activities.

7.2. Public Notification of Spills that Do Not Reach Public Waters

For spills that are contained and do not release unrecovered sewage into a storm drain, stream, or a surface water body, notification to the public shall be accomplished through the use of signs at the location of the spill.

7.3. Public Notification of Spills that Reach Waters of the United States

If sewage reaches a Waters of the United States, EHS will determine if a field investigation of the discharge site and potentially affected areas is required. If possible, verify the extent of the contamination in the field before the water body closure decision is made.

Creeks, streams and beaches that have been contaminated as a result of a spill should be posted at visible access locations until the risk of contamination has subsided to acceptable background levels. The warning signs, once posted, should be checked every day to ensure that they are still in place. "Closed" signs shall be posted at the outfall and a minimum of 100 feet upstream and 100 feet downstream of the discharge. If there is a large volume of sewage, more signs must be posted downstream.

Signs must remain posted until at least two consecutive days of samplings meet the Public Beach Sanitation and Ocean Water-Contact Sports standards, or as otherwise determined by EHS. EHS has the authority to close and re-open the beaches and water bodies for public water contact. The water bodies affected are determined by the following parameters and best professional judgment:

- The volume of sewage discharged
- Parameters affecting flow of sewage to the water bodies
- Direction of current
- Tides
- Past experience in the area; and/or
- Any other pertinent information.

8. TRAINING

8.1. Initial and Annual Refresher Training

All personnel and contractor employees who may have a role in responding to, reporting and/or mitigating a sewer system spill should receive training on the contents of the District's SERP. All new employees should receive training before they are placed in a position where they may have to respond. Current employees should receive annual refresher training on this plan and the procedures to be followed.

The District provides training on wastewater spill and cleanup activities, repairs, risks/hazards, and cleanup. This training includes information on spill notification, available equipment, initial response procedures, sewer bypass pumping, spill estimation, responding to forcemain breaks, and cleanup and disinfection. At the end of the training session, a quiz is provided to the attendees.

Currently, operators receive periodic training. In the future, personnel in the Utilities Department, the Maintenance Division, and the Water Quality Division also be provided the same training. The District's spill response contractor(s), including Roy's Sewer Service will be required to conduct its own training.

8.2. Spill Response Drills

Sewer spill response personnel should attend periodic training drills to ensure that employees are up to date on these procedures, equipment is in working order, and the required materials are

readily available. The training drills should cover scenarios typically observed during sewer related emergencies (e.g., mainline blockage, mainline failure, force main failure, lift station failure, and lateral blockage). The District will develop a program for these training drills in concurrence with expanding the training program as discussed above.

8.3. Spill Training Record Keeping

The District maintains training and test records related to its annual training at the wastewater treatment plant.

Appendix E – Spill Emergency Response Plan Documents

Appendix SERP-A

- Spill Report Forms
- SSMP and First Responder Contact List

Appendix SERP-B

- Lift Station Emergency Response Plan
- Spill Volume Estimation Methods
- Example Spill Notification Sign(s)

Appendix SERP-C

- Water Quality Monitoring Program
- Template for Spill Technical Report

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SERP APPENDIX A

SSMP and First Responder Contact List

Sanitary Sewer Spill Report Forms

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SSMP AND SPILL RESPONSE CONTACT NAMES AND NUMBERS

DISTRICT MAIN NUMBER: (415) 897-4133

NAME	TITLE	PHONE NO.	EMAIL
Tim Kennedy	Director of Operations	(415) 720-7187	TKennedy@NMWD.com
Jeff Corda	Treatment and Distribution Supervisor	(415) 720-1877	JCorda@NMWD.com
	Roy's Sewer Service	(415) 892-5480	
	District Laboratory	(415) 897-4133	
	Marin County Fire	9-1-1	
	Office of Emergency Services (OES)	(800) 852-7550	
	County Public Health Officer	(415) 473-4163	
	Environmental Health Services	(415) 473-6907	
	County Sheriff's Office	(415) 473-7250	
	SWRCB (CIWQS Questions)	866-79-CIWQS (24977)	

Table 2-2. List of Haulers and Contractors

NAME	LOCATION	PHONE NO.
City Sewer Service	Pt. Reyes Station	(415) 663-1926
Roto Rooter	San Rafael	(415) 454-7281
Roy's Sewer Service	Cotati	(415) 892-5480
Petaluma Septic Service	Petaluma	(707) 888-2822

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Reset Form:

INSTRUCTIONS: Complete all items except those that are shaded gray

Spill Category *(check one):*

- ☐ Category 1: A spill of any volume of sewage from or caused by a sanitary sewer system or publicly owned lateral that results in a discharge to (1) a surface water, including a surface water body that contains no flow or volume of water or (2) 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.
- ☐ Category 2: A spill from a sewer main of 1,000 gallons or greater that does not discharge to a surface water.
- ☐ Category 3: A spill from a sewer main of equal to or greater than 50 gallons and less than 1,000 gallons that does not discharge to a surface water.
- ☐ Category 4: A spill from a sewer main of less than 50 gallons that does not discharge to a surface water. **See Category 4 Sanitary Sewer Spill Field Report.**
- ☐ Private Lateral (not reportable)

A. IMMEDIATE NOTIFICATIONS WITHIN 2 HOURS – IF SPILL IS 1,000 GAL OR MORE AND DISCHARGING OR THREATENING TO DISCHARGE TO A SURFACE WATER

Office of Emergency Services (800) 852-7550 by (name): _____

Caller phone number: _____ Date: _____ Time: _____

Cal OES Control Number: _____ Spoke to (if applicable): _____

North Coast Regional Water Quality Control Board (Oceana Marin): 707-576-2220 by (name): _____

Date: _____ Time: _____

During weekdays:

Marin County Health Officer (415) 473-6907 by (name): _____

Date: _____ Time: _____

During evenings/evenings:

Marin County Sheriff's Office (415) 473-7250 by (name): _____

Date: _____ Time: _____

If spill impacts any creeks, cullies, or natural waterways:

California Department of Fish & Game (707) 944-5500 by (name): _____

Date: _____ Time: _____

A. CONTACT INFORMATION FOR SPILL-SPECIFIC QUESTIONS		
Name:	Phone number:	
This form was prepared by (name):	Title:	Date:
This form was reviewed by (name):	Title:	Date:

C. SPILL EVENT COMPLAINT		
Date of notification:	Time:	Method:
Date complainant first noticed the spill:		Time:
If not employee, name of complainant:		Phone number:
Narrative description of complaint, including any information the caller provided (whether the spill has reached surface waters or a drainage conveyance system, odors, spill appearance points, etc):		
Final resolution of the complaint:		

D. SPILL LOCATION		
Spill location name:		
Street name and number:		
Nearest cross street:	City:	Zip code:
County:	Location description:	
Latitude coordinates*:	Longitude coordinates*:	
*If a single spill event results in multiple appearance points, GPS coordinates for the appearance point closest to the failure point.	If a single spill event results in multiple appearance points, describe additional appearance points:	
Was spill located within 1,000 feet of a municipal surface water intake? ☐ Yes ☐ No		
Final spill destination (check all that apply): - Ocean or Ocean Beach - Surface Waters - Drainage Channel - Building or Structure - Separate Storm Drain - Combined Storm Drain - Paved Surface - Unpaved Surface - Street Curb or Gutter - Other (specify to the right)	If other final destination, specify: Final spill destination GPS coordinates: Latitude: _____ Longitude: _____	

E. SPILL OCCURRING TIME	
Estimated spill start date:	Estimated spill start time:
Date sewer crew arrived:	Time sewer crew arrived:

E. SPILL OCCURRING TIME CONT.	
Who was interviewed to help determine start time?	
Estimated on-going spill rate (gpm) at time of arrival (if applicable):	
Estimated spill end date:	Estimated spill end time:
Initial estimate of spill volume (gal):	
Methodology and type of data used to estimate start time, on-going spill rate, end time, and recovered spill volume:	

F. SPILL DESCRIPTION	
Spill appearance point (check all that apply): - Backflow Prevention Device - Combined Sewer D.I. (Combined CS Only) - Force Main - Gravity Mainline - Lateral Cleanout - Inside Building or Structure - Manhole - Pump Station - Lower Lateral - Upper Lateral - Other Sewer System Structure (specify)	Were there multiple appearance points? ☐ Yes ☐ No If **YES**, how many?: _____ If other structure, specify: Was the spill associated with a storm event? ☐ Yes ☐ No
Did the spill reach a drainage conveyance system? ☐ Yes ☐ No If **YES**, answer the following: Describe the drainage conveyance and its location: _____ Was it fully captured and returned to the sanitary sewer? ☐ Yes ☐ No Est. vol. discharged to drainage conveyance system (gal): | Recovered (gal): | Remaining (gal): Est. spill travel time from the point of entry into the drainage conveyance system to the point of discharge into the receiving water (if applicable): _____	
Did the spill reach a surface water? ☐ Yes ☐ No If **YES**, answer the following: Name and type of receiving waterbody: _____ Estimated spill travel time to receiving water: _____ Est. vol. discharged directly to surface water body (gal):	
~~Total estimated spill volume (gal):~~	Est. total spill vol. recovered (gal):
Est. total spill vol. remaining (gal):	
Cat. 2 & 3 requirement - Est. vol. discharged to a groundwater infiltration basin/facility (gal):	

F. SPILL DESCRIPTION CONT.	
Volume calculation methods (check all that apply): - Eyeball - Photo Comparison - Upstream Lat. Connections - Duration and Flowrate - Area of Volume (include sketch/photo with dimension - SCADA or Flow Records - Other (describe below) If other, describe:	Additional notes (conditions encountered, etc.):

G. CAUSE OF SPILL	
Where did failure occur? (check all that apply) - Air-Relief/Blow-Off Valve - Force Main - Gravity Mainline - Siphon - Lateral (Non-Port Managed) - Lateral (Port Managed) - Manhole - Pump Station Failure (Controls) - Pump Station Failure (Mechanical) - Pump Station Failure (Power) - Other (specify) If other, describe failure point:	Spill cause(s) (check all that apply): - Air-Relief/Blow-Off Valve Failure - Construction Diversion Faillure - CS Maintenance - Damage - Debris Construction - Debris Lateral - Debris General - Debris Rags - Flow Exceeded Capacity - FOG (Fats, oil, grease) - Inappropriate Discharge - Natural Disaster - Operator Error - Root Intrusion - Pipe Structural Problem/Failure - Pipe Failure Problem/Failure (Installation) - Rainfall Exceeded Design - Pump Station Failure (Controls) - Pump Station Failure (Mechanical) - Pump Station Failure (Power) - Siphon Failure - Vandalism - Surcharged Pipe - Non-Dispersible Wipes - Other (specify) If other, describe spill cause:
Sewer pipe material:	
Sewer pipe est. age (yrs):	
Pipe diameter (in):	
Narrative description of spill cause investigation and investigative findings:	

H. SPILL RESPONSE	
Spill response activities (check all that apply): - Cleaned-Up - Mitigated Effects of Spill - Restored Flow - Returned Spill to Sanitary Sewer System - Returned Portion of Spill to Sanitary Sewer System - Property Owner Notified - Other Enforcement Agency Notified (specify) - Other (specify)	Specify other enforcement agency notified: If other, describe: Date spill response completed: Time:
Chronological narrative of actions taken to terminate spill:	
Description of impact of spill (including receiving waters and/or potential impact to beneficial uses, if applicable):	
Observed impacts on aquatic life, including any fish killed:	Any ongoing investigation? ☐ Yes ☐ No If yes, reasons for ongoing investigation: Anticipated date of completion:
Public closure, restricted public access, temporary restricted use, and/or posted health warnings due to spill? ☐ Yes ☐ No If **YES**, answer the following: Provide responsible entity for closure: _____ Location of closures/restricted access/postings: _____ Number of days closed: _____	
Local regulatory enforcement action taken against an illicit discharge? ☐ Yes ☐ No	
Description of corrective actions (check all that apply): - Add sewer to preventative maintenance program - Adjust schedule/method of preventative maintanance - Enforcement action against FOG source - Inspect sewer using CCTV to determine cause - Plan rehabilitation or replacement of defective asset - Repair facilities or replace defect - Other (specify) If other, describe:	Provide an estimated schedule to actions selected on the left:

I. SAMPLING - ONLY FOR SPILLS OF 50,000 GAL OR MORE DISCHARGING TO A SURFACE WATER		
Were samples of impacted waters collected? ☐ Yes ☐ No ☐ N/A (no flow) If **YES**, check all that analyses taken: - Ammonia - Total Coliform Bacteria - Fecal Coliform Bacteria - E-coli - Enterococcus - Other (specify) If other, describe:	Description of water quality sampling activities: Conditions that may have influenced sample results:	
Samples taken by (name):	Time:	Date:
Other regulatory agencies receiving water quality reports:		
Water samples taken _____ ft upstream and _____ ft downstream of point of discharge. If spill reached drainage conveyance system, describe where the sample is taken from in drainage conveyance system (location MUST be before flow discharges into receiving waters):		
Sketch water quality sampling points:		
Re-sampling dates (if needed):		
Date of “clear” sample:	Date of signs removed:	

J. ADDITIONAL NOTES

SKETCH SPILL FAILURE POINT, APPEARANCE POINT, FLOW PATH, AND ULTIMATE DESTINATIONS:

REQUIRED PHOTOGRAPHS:

- System location where spill originated
- For spills with multiple appearance points, point closest to spill origin
- Extent of spill and spill boundaries
- Drainage conveyance system entry and exit location(s)
- For spills to surface waters (Category 1):
    - Discharge points to surface waters
    - Waterbody bank erosion
    - Floating matter
    - Water surface sheen (potentially from oil and grease)
    - Discoloration of receiving water
    - Impact to receiving water
- Warning sign placement(s)
- Location(s) of cleanup
- Post-cleanup conditions

Reset Form:

INSTRUCTIONS: Complete all items except those that are shaded gray

Spill Category *(check one)*:

- ☐ Category 4: A spill of less than 50 gallons, from or caused by the NMWD sanitary sewer system (including laterals from NMWD-owned buildings), that does not reach surface water.
- ☐ Spill from Private Lateral (Non-Reportable)

A. CONTACT INFORMATION FOR SPILL-SPECIFIC QUESTIONS		
Name:	Phone number:	
This form was prepared by (name):	Title:	Date:
This form was reviewed by (name):	Title:	Date:

B. SPILL EVENT COMPLAINT		
Date of notification:	Time:	Method:
Date complainant first noticed the spill:		Time:
Name of complainant:		Phone number:
Narrative description of complaint, including any information the caller provided regarding whether the spill has reached surface waters or a drainage conveyance system:		
Final resolution of the complaint:		

C. SPILL LOCATION		
Spill location name:		
Street name and number:		
Nearest cross street:	City:	Zip code:
County:	Location description:	
Latitude coordinates*:	Longitude coordinates*:	
*If a single spill event results in multiple appearance points, GPS coordinates for the appearance point closest to the failure point.	If a single spill event results in multiple appearance points, describe additional appearance points:	

D. SPILL OCCURRING TIME	
Estimated spill start date:	Estimated spill start time:
Date sewer crew arrived:	Time sewer crew arrived:
Estimated on-going spill rate (gpm) at time of arrival (if applicable):	
Who was interviewed to help determine start time?	
Estimated spill end date:	Estimated spill end time:
Methodology and type of data used to estimate start time, on-going spill rate, and end time:	

E. SPILL DESCRIPTION	
Spill appearance point (check all that apply): - Backflow Prevention Device - Force Main - Gravity Mainline - Lateral Cleanout - Inside Building or Structure - Manhole - Pump Station - Lower Lateral - Upper Lateral - Other Sewer System Structure (specify to the right)	Were there multiple appearance points? Yes No If **YES**, how many? If other structure, specify: Was this spill from a private lateral? Yes No If **YES**, name of responsible party:
Did the spill reach a drainage conveyance system? ☐ Yes ☐ No If **YES**, answer the following: Describe the drainage conveyance and its location: _____ Travel time to drainage conveyance: _____ Was it fully captured and returned to the sanitary sewer? Yes No Est. vol. discharged to drainage conveyance system (gal): | Recovered (gal): | Remaining (gal):	
Total estimated spill volume (gal):	Est. total spill vol. recovered (gal):
Volume calculation methods (check all that apply): - Eyeball - Photo Comparison - Upstream Lat. Connections - Duration and Flowrate - Area of Volume (include sketch/photo with dimensions) - SCADA or Flow Records - Other (describe below) _____ _____	Additional notes (conditions encountered, manhole numbers, etc.):

F. CAUSE OF SPILL	
Where did failure occur? (check all that apply) _____ _____	Spill cause(s) (check all that apply): - Air-Relief/Blow-Off Valve Failure - Construction Diversion Failure - CS Maintenance - Damage - Debris (Construction) - Debris (Lateral) - Debris (General) - Debris (Rags) - Flow Exceeded Capacity - FOG (Fats, oil, grease) - Inappropriate Discharge - Natural Disaster - Non-Dispersible Wipes - Operator Error - Root Intrusion - Pipe Structural Problem/Failure - Pipe Structural Problem/Failure (Installation) - Rainfall Exceeded Design - Pump Station Failure (Controls) - Pump Station Failure (Mechanical) - Pump Station Failure (Power) - Siphon Failure - Surcharged Pipe - Vandalism - Other (specify below) _____

G. SPILL RESPONSE		
Spill response activities (check all that apply): - Cleaned-Up - Disinfected Site - Mitigated Effects of Spill - Restored Flow - Returned Spill to Sanitary Sewer System - Returned Portion of Spill to Sanitary Sewer System - Property Owner Notified - Other Enforcement Agency Notified (specify to the right) - Other (specify to the right)	Specify other enforcement agency notified: If other, describe: Amount of spilled contained (gal): All Portion None Date spill response completed:	Time:
Description of corrective actions (check all that apply): - Add sewer to preventative maintenance program - Adjust schedule/method of preventative maintenance - Capital improvements - Enforcement action against FOG source - Inspect sewer using CCTV to determine cause - Plan rehabilitation or replacement of defective asset - Repair facilities or replace defect - Other (specify below) _____ _____	Chronological narrative of actions taken to terminate spill:	

H. ADDITIONAL NOTES

ADD PHOTOGRAPHS:
• System location where spill originated • Drainage conveyance system entry locations • Extent of spill spread • Location(s) of clean up • Spill appearance points

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SERP APPENDIX B

Pump Station Emergency Response Plan

Sanitary Sewer Spill Volume Estimation Methods

Example Spill Notification Sign(s)

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NORTH MARIN WATER DISTRICT

OCEANA MARIN PUMP STATION EMERGENCY RESPONSE PLAN

August 2026

Prepared by

V.W. HOUSEN & ASSOCIATES

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Figure 6-1 Main Lift Station Electrical Components

Figure 6-2 North Street Lift Station Electrical Components

Figure 9-1 Collection System Map

Chapter 1 Lift Station Information

The North Marin Water District Oceana Marin Pump Station Emergency Response Plan ("PS-ERP") provides guidelines for responding to and reporting emergency incidents (i.e. overflow, pump failure) that occur in the District's two lift stations. The PS-ERP is a supplement to the District's Spill Emergency Response Plan ("SERP"). Please refer to the SERP for additional requirements related to spill response.

The District's sewer collection system includes approximately 5.1 miles of gravity sewer pipe, two lift stations, and 0.75 miles of forcemain pipe. The District's system conveys approximately 17,000 gallons per day of average dry weather flow to the Oceana Marin treatment plant from the Oceana Marin planned community (approximately 232 homes) and nine residential parcels in Dillon Beach. Figure 1-1 shows the system and its key features.

Figure 1-1. Approximate Boundary for NMWD Oceana Marin Service Area

1.1 Oceana Marin Main Lift Station

The Oceana Marin Main Lift Station, shown on Figure 1-2, pumps wastewater through a 3,890 lineal foot, 6-inch diameter epoxy-lined asbestos cement forcemain from the entire Oceana Marin service area to the treatment ponds. The ponds are located on a hillside approximately 380 feet higher in elevation, as shown on Figure 1-1 on the previous page. The lift station is located on a bluff above the ocean, at approximate elevation 66 feet.

The station consists of a below grade concrete structure, a small building housing a standby engine generator set, and a doghouse shed containing the power supply, main circuit breaker, and automatic transfer switch. The lift station wet well is separated from the dry well, which contains the pumps and all electrical equipment, main panels, and controls. A grit catchment area in the wet well is pumped out periodically throughout the year. Aeration is provided within the wet well to reduce odors.

Figure 1-2. Oceana Marin Main Lift Station

The lift station dry well station contains four rotary lobe pumps, comprising two sets of two pumps in series. The pumps operate in series to overcome the high pumping head between the lift station and treatment plant. Each pump set has a capacity of 120 gallons per minute ("gpm") at a discharge head of 175 psi, as provided by the District. The pump sets are named "A" and "B", each with two pumps "1" and "2". Pump sets A and B operate in lead-lag and switch after every pump cycle. If one of the pumps 1 or 2 fails in either pump set, that pump set automatically shuts off and the other pump set is called to run. In

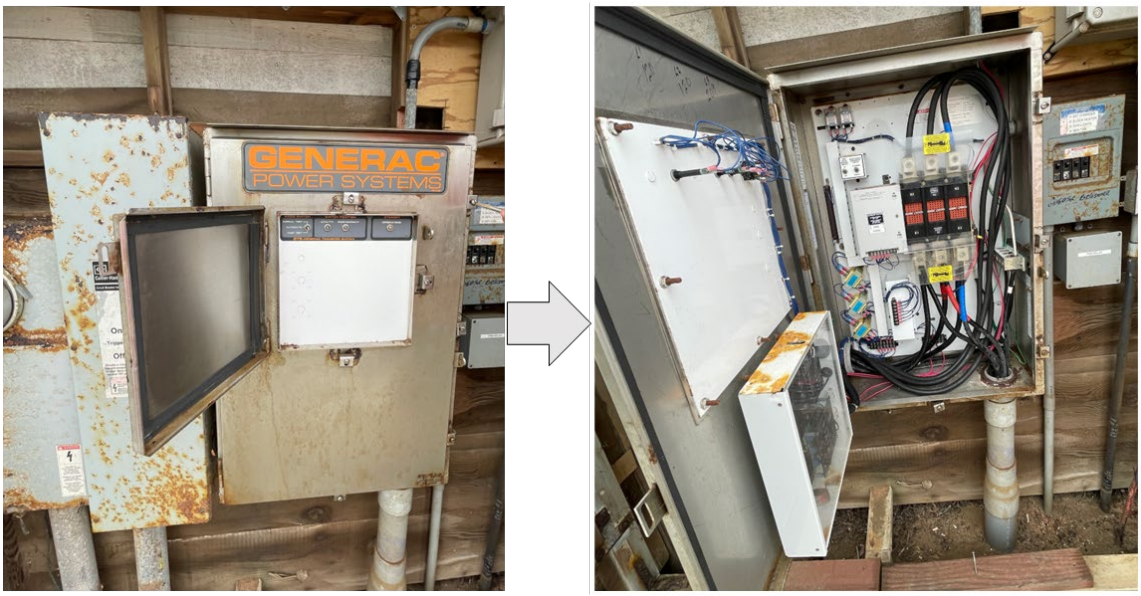
addition to pumps, the dry well includes a separate sump pump, pump motors, a remote telemetry unit, and electrical panels. Figure 1-3 shows the inside of the lift station dry well.

Figure 1-3. Main Lift Station Dry Well

The standby propane generator is located in an adjacent above-ground building, which also contains the generator electrical panel. The propane tank is located outside of the generator building. Adjacent to the generator tank is a storage building containing community emergency supplies. Figure 1-4 shows the emergency generator building, adjacent tank, and community storage shed. Figure 1-5 shows the automatic transfer switch and panel.

Figure 1-4. Generator Building, Fuel Tank, and Community Storage Shed

Figure 1-5. Generator Transfer Switch



Additional information about the Main Lift Station is included on Table 1-1 on the following page.

Table 1-1. Main Lift Station Information

Location Summary		
Address	10 Lanai Way, Dillion Beach, CA 94929	
Lat, Long	38°15’07.41” N, 122°58’04.65” W	
Directions	The Oceana Marin main lift station is accessed from the end of Tahiti Way in Oceana Marin. From the North Marin Water District headquarters at 999 Rush Creek Place, Novato, CA 94945: 1. Head north on Highway 101 for 13.3 miles 2. Take exit 476 for Old Redwood Highway toward Penngrove 3. Cross the freeway and turn right on Stoney Point Road 4. After 1.4 miles, turn left onto Pepper Road 5. After 5.9 miles, turn right onto Bodega Avenue for ½ mile, and then left onto Tomales Road/Tomales Petaluma Road 6. Continue for 5.5 miles and turn right on Highway 1 North / Main Street 7. In 0.3 miles, turn left onto Dillon Beach Road 8. Follow Dillon Beach Road for 3.9 miles and then make a slight right onto Oceana Drive. 9. In 0.3 miles, turn left onto Tahiti Drive and continue to the end of the cul-de-sac.	
Pump Capacities		
#1 (Pump set A)	Borger Rotary Lobe Pump PL 200 16008928 1.3	120 gpm at 175 psi discharge head
#2 (Pump set A)	Same as pump #1	
#3 (Pump set B)	Borger Rotary Lobe Pump PL 200 16008928 1.4	120 gpm at 175 psi discharge head
#4 (Pump set B)	Same as pump #2	
Backup Systems		
Onsite Storage	The wetwell flooded capacity was estimated in the 2015 Master Plan as approximately 12,000 gallons. Actual available emergency storage varies with the wet-well operating level and incoming flow.	
Backup Power	An auxiliary propane generator located on the North end of the lift station site is used for backup power generation in case of a power outage.	
Bypass	The lift station does not have emergency bypass capabilities. In case of a station shutdown, wastewater is pumped into a truck and hauled to the plant. Any uncontained flow would discharge directly to the ocean.	
Flow Monitoring	A flow meter is located on the discharge force main. The flowmeter is a Rosemont magmeter with a 4” diameter flow tube, located in a pit outside the lift station.	

Figure 1-6. Oceana Marin Main Lift Station Pump Curve

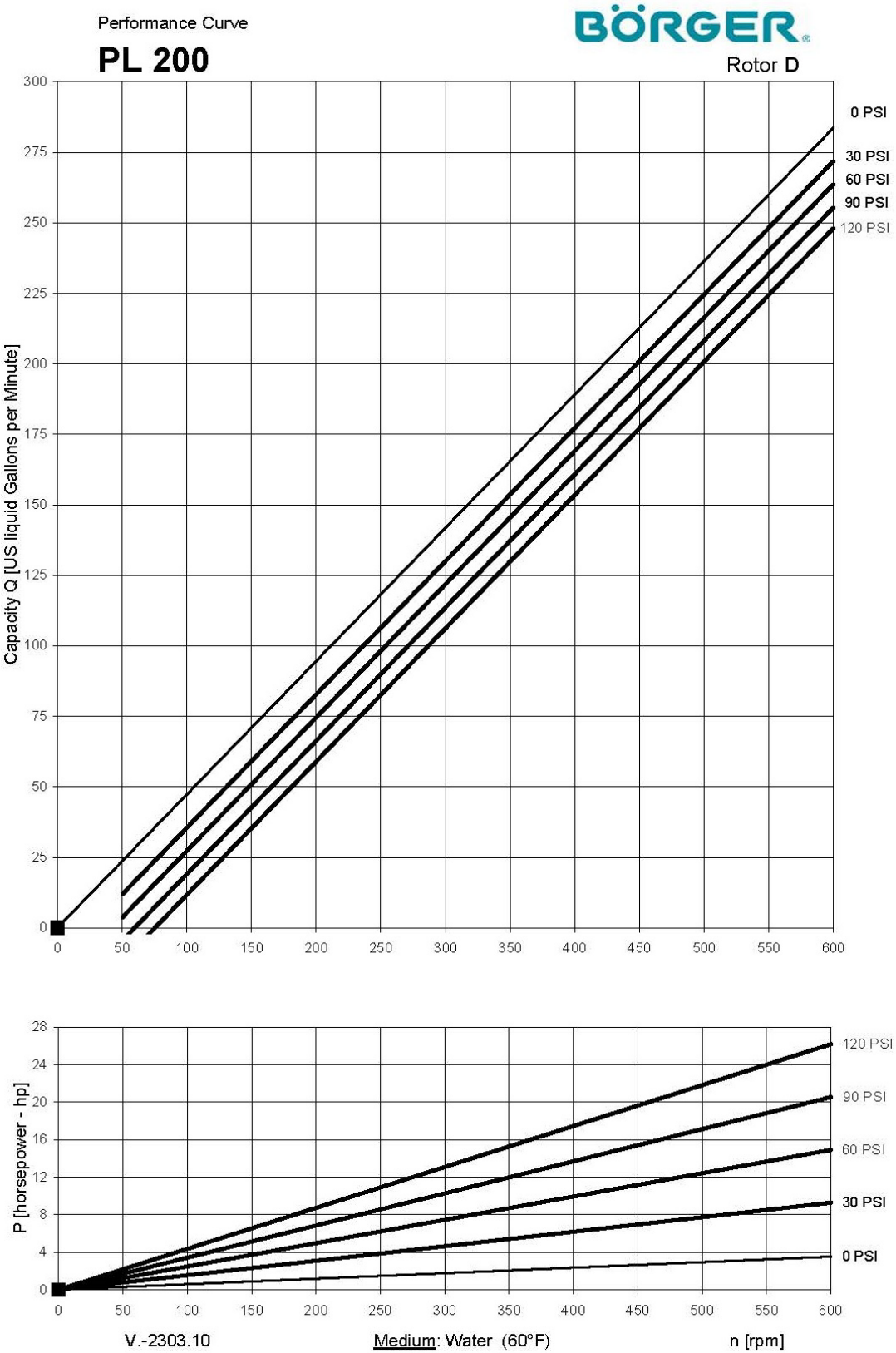
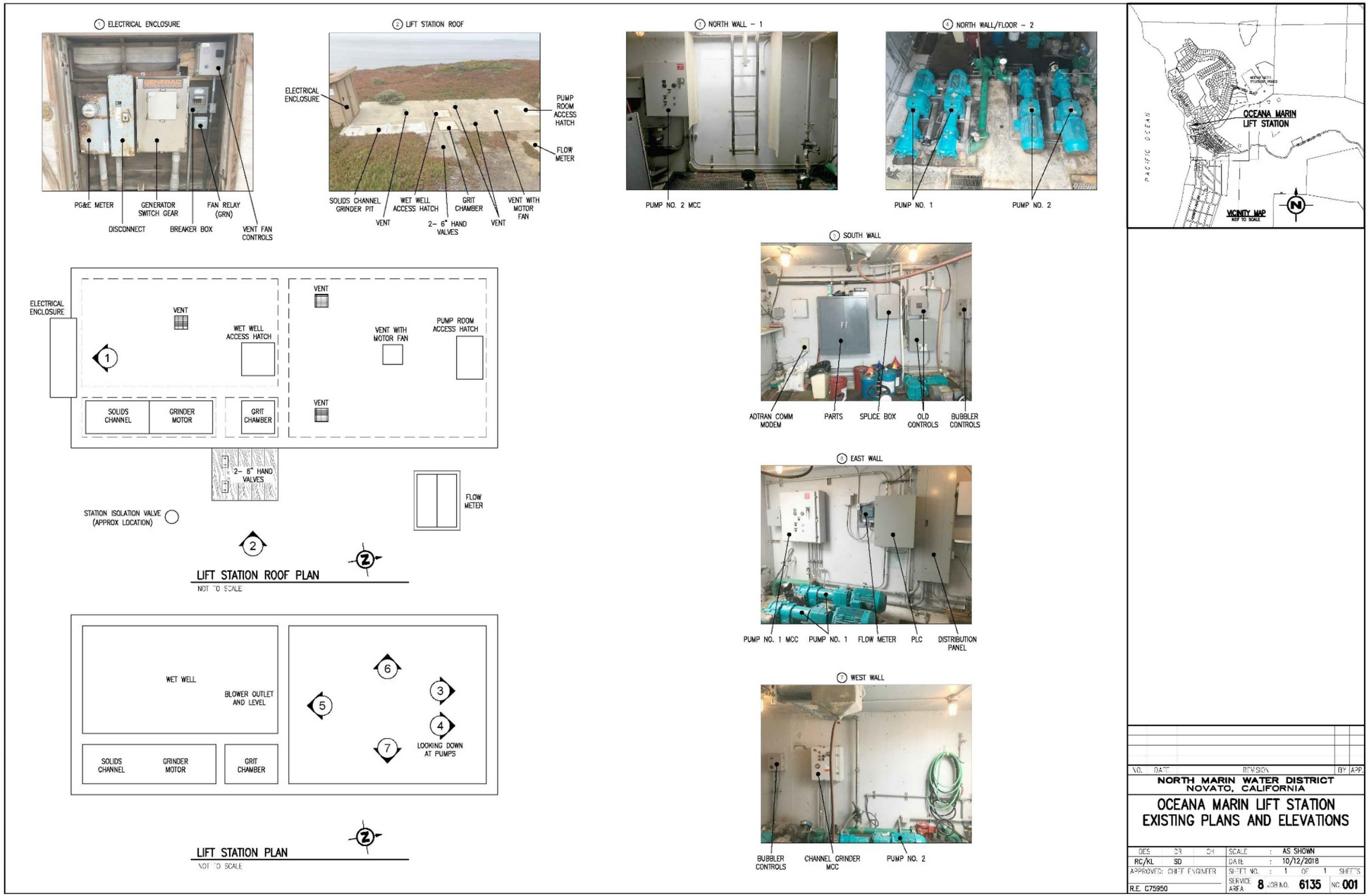


Figure 1-7. Oceana Marin Main Lift Station Site Layout



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1.2 North Street Lift Station

The North Street Lift Station serves twelve properties near North Street and Ocean View Avenue in Dillon Beach. Flow is pumped through a two-inch forcemain northwest on North Street from Ocean View Avenue to Oceana Drive, and then continues north by gravity to the Main Lift Station. The elevation difference between the lift station and Oceana Drive is approximately 16 feet.

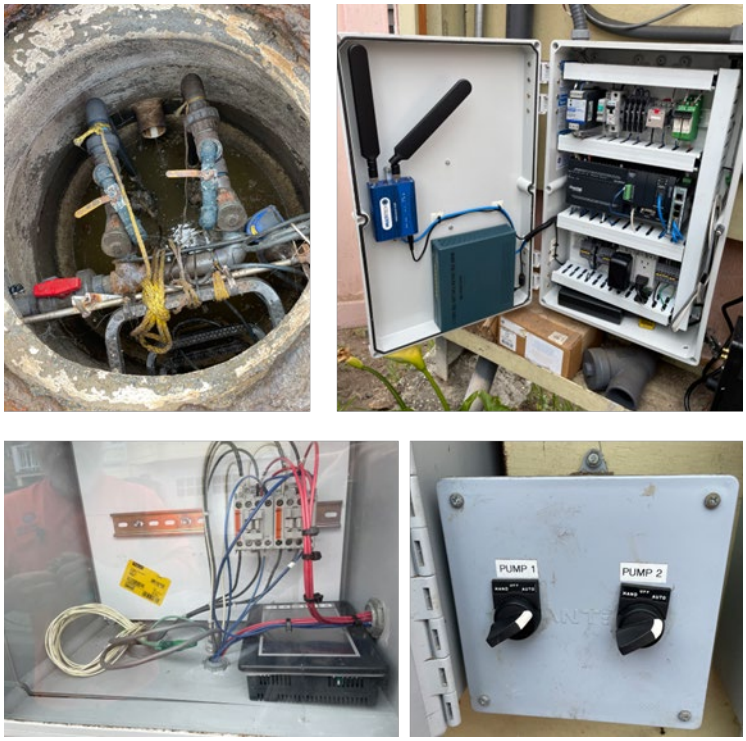
The lift station consists of a manhole with two Zoeller E295 submersible pumps that operate as duty and standby. In addition, the meter, electrical panel, and controller are located in an above-ground cabinet on the Ocean View Avenue side of 21 North Street. There is no backup power generation at this station. Should the power fail, wastewater from this station would be pumped to the gravity line on Oceana Drive in the event of a localized power failure, or hauled to the treatment plant in the event of a widespread power failure.

The North Street Lift Station and electrical/control panel are shown on Figure 1-6.

Figure 1-8. Oceana Marin North Street Lift Station

The lift station wet well contains two Zoeller E295 submersible pumps. The Zoeller E295 pumps are 2 hp submersible pumps that operate as duty and standby. Each pump has a capacity of 150 gallons per minute ("gpm") at a discharge head of 10.4 psi. Figure 1-7 on the following page shows the inside of the lift station wet well and electrical/control panel.

Figure 1-9. North Street Lift Station Wetwell and Electrical/Control Panel

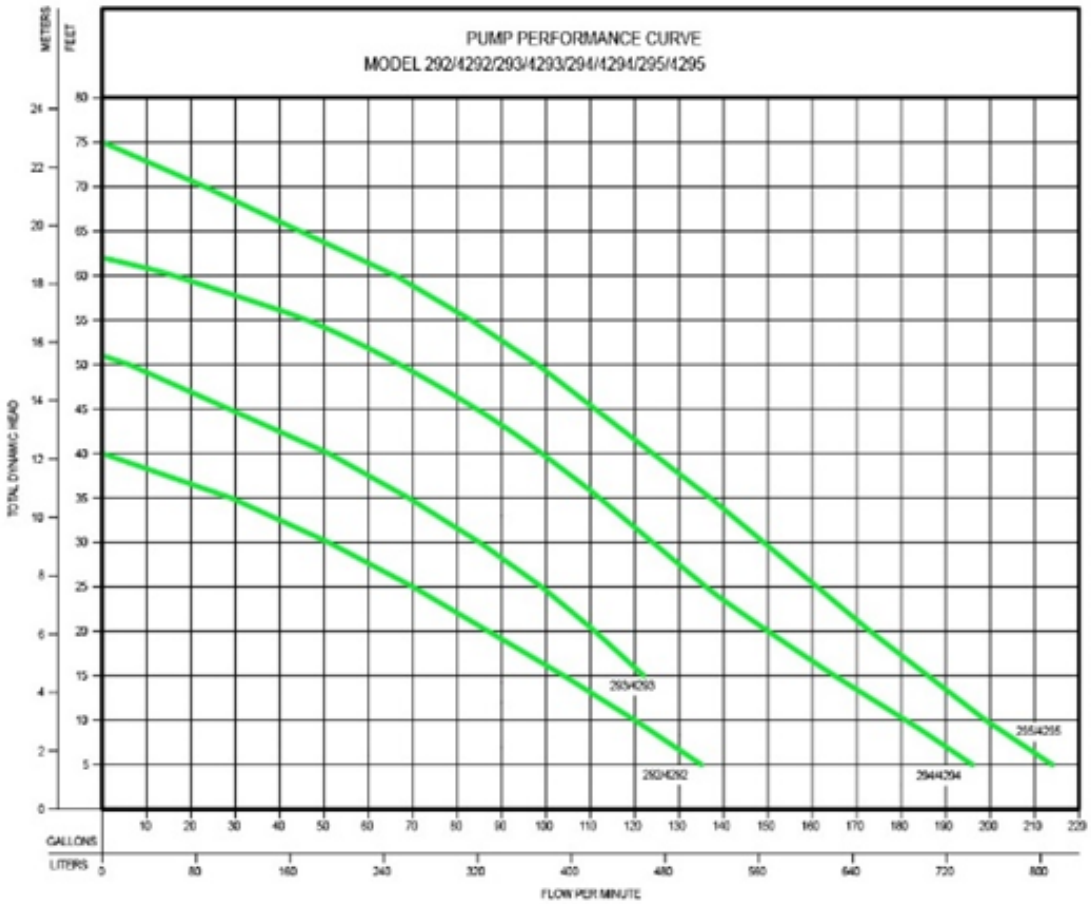


Additional information about the North Street Lift Station is included on Table 1-2 on the following page.

Table 1-2. North Street Lift Station Information

Location Summary		
Address	North Street & Ocean View Avenue, Dillion Beach, CA 94929	
Lat, Long	38°15'04.03" N, 122°57'53.59" W	
Directions	The North Street lift station is located at the intersection of North Street and Ocean View Avenue. From the North Marin Water District headquarters at 999 Rush Creek Place, Novato, CA 94945: 1. Follow the directions for the Main lift station until you reach the Dillon Beach Road and Oceana Drive intersection 2. In 0.2 miles, turn left onto North Street and proceed one block to Ocean View Avenue.	
Pump Capacities		
#1	Zoeller Model E295 220V single phase, 2hp	150 gpm @ discharge head of 10.4 psi
#2	Same as Pump #1	150 gpm @ discharge head of 10.4 psi
Backup Systems		
Available Storage	The station has limited storage available within the existing manhole/wet well.	
Backup Power	The station is equipped with a manual transfer switch for connection of a portable generator. If portable generator is unavailable, the District may use a vacuum truck to pump out the lift station manhole. If a bypass is used, flow is discharged to the Oceana Drive gravity main (assuming a localized power outage) or the Oceana Wastewater Treatment Plant (assuming a broader outage).	
Bypass	Other than as described above, the lift station does not have emergency bypass capabilities.	
Flow Monitoring	This station does not include a flow meter.	

Figure 1-10. North Street Lift Station Pump Curve



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Chapter 2 Emergency Contact Information

North Marin Water District receives all alarms and resident calls related to the two lift stations via the Supervisory Control and Data Acquisition ("SCADA") system, which relays the information to the on-call Operator. In some cases, if information is called in from outside of the District, the District would be contacted by Marin County Fire. District contact numbers are included on the District website, at the following url: Contact - North Marin Water District.

As described on the "Emergencies & After Hours" procedure on this page of the NMWD website, after hours, this call is routed to an outside call center.

If the on-call Operator believes that the issue needs to be elevated, they will contact the Treatment and Distribution Supervisor. The Treatment and Distribution Supervisor will dispatch additional personnel as required, and will elevate the issue to the Director of Operations, if necessary.

One staff member is assigned to be on-call for a 7-day rotational period to support after-hours duties. The District utilizes Roy's Sewer Service for necessary field support during spill response activities. If Roy's is unavailable to respond, Novato Sanitary District is contacted.

2.1 SERP and PS-ERP Contact List

Table 2-1 includes District contact information for responding to callouts and sanitary sewer overflows. Table 2-2 includes a list of haulers and contractors that perform work for the District.

Table 2-1. District Contact Information

DISTRICT MAIN NUMBER: (415) 897-4133

NAME	TITLE	PHONE NO.
Tim Kennedy	Director of Operations	(415) 720-7187
Jeff Corda	Treatment and Distribution Supervisor	(415) 720-1877
	Roy's Sewer Service	(415) 892-5480
	District Laboratory	(415) 897-4133
	Marin County Fire	9-1-1
	Office of Emergency Services (OES)	(800) 852-7550
	County Public Health Officer	(415) 473-4163
	Environmental Health Services	(415) 473-6907
	County Sheriff's Office	(415) 473-7250
	SWRCB (CIWQS Questions)	866-79-CIWQS (24977)

Table 2-2. List of Haulers and Contractors

NAME	LOCATION	PHONE NO.
City Sewer Service	Pt. Reyes Station	(415) 663-1926
Roto Rooter	San Rafael	(415) 454-7281
Roy's Sewer Service	Cotati	(415) 892-5480
Petaluma Septic Service	Petaluma	(707) 888-2822

Chapter 3 Hazards and Cautions

This section of the PS-ERP identifies the different hazards that could potentially be encountered at the District's lift stations.

3.1 Traffic Control

The District's response crew will follow CalOSHA traffic control and safety requirements, which reference the California Manual on Uniform Traffic Control Devices (MUTCD), and utilize personal protective equipment for addressing traffic hazards when responding to emergencies in and around the lift stations. In the event of an overflow, NMWD's response crew will set up detours as needed in order to keep the public away from the spill areas. The response crew may utilize some or all of the following equipment listed below:

- Traffic cones
- Caution tape
- Barricades
- Flares
- Signage
- Flaggers

3.2 Obstacles and Crossings

There are no known obstacles or crossings.

3.3 Safety Hazards

3.3.1 Electric Hazards

In order to ensure that electrical equipment within the lift stations are properly shut off for repair or maintenance, The NMWD response crew will follow pre-established Lockout and Tagout procedures in Chapter 7. Response crew members will verify that all electrical equipment capable of storing energy is controlled prior to initiating exposure.

3.3.2 Sanitary Hazards

As part of the District's response during an overflow, crew members will wear latex gloves under leather gloves in combination with safety glasses to avoid contamination when handling equipment and raw sewage.

3.3.3 Lifting Hazards

In cases where it is necessary to remove the submersible pumps for servicing or repair, the District will observe proper rigging and lifting techniques.

3.4 Safety Practices

The District will follow good work practices including CalOSHA rules and regulations to ensure safety of the response crew members. Some of the safety practices/programs include but are not limited to:

- Confined Space
- Traffic Control
- Lockout/Tagout
- Proper PPE
- Respiratory protection
- Any other safety procedure/program, as required.

Chapter 4 Emergency Response Decision Tree

There are several emergency scenarios that warrant immediate response from the District. These scenarios include but are not limited to:

- Standby Power Failure
- Electrical Equipment Failure
- Clogged Pump/Failed Pump
- High Level Alarm

This section describes communications and actions that should occur following one of these events.

4.1 Spill Notification and Spill Response Procedures

During working hours, the District operators will receive and evaluate SCADA alarms that may trigger an in-person response to investigate the cause of the alarm. After normal work hours, the District is most often notified by a SCADA call out system. The on-call operator will receive the SCADA alarm via phone call, check to see if the alarm warrants an onsite response and dispatch the standby maintenance person if needed.

The District may also be notified by the public or field staff of a Spill. The public contacts the District telephone number, which is **(415) 897-4133, day or night.** Spills may also be reported in person at the District Office, or via 9-1-1. If the call is made to 9-1-1, the receiving agency (likely the Marin Fire Department) notifies the District of the Spill to provide First Response.

The District's SERP includes a flowchart showing the Spill Chain of Communication during business hours and non-business hours. This flowchart is included as Figure 4-1 on the following page. The District's SERP includes a second flowchart showing the District's Spill response activities, which is shown on Figure 4-2.

In the event of equipment failure resulting in a spill at a Lift Station, temporary repairs will be completed by District staff or an external contractor and operations must be restored quickly. In the event of structural failure in a force main resulting in a spill, the first action is to turn off the pump to prevent additional pressurized discharge. Following this step, similar protocol as above should be followed. The force main should be repaired as quickly as possible. If failure is too severe to allow an immediate repair, emergency measures should be taken. These measures could include, but are not limited to, contracting with a septic tank pumping company to haul sewage from the lift station to the District's treatment ponds.

Figure 4-1: Spill Response Chain of Communication

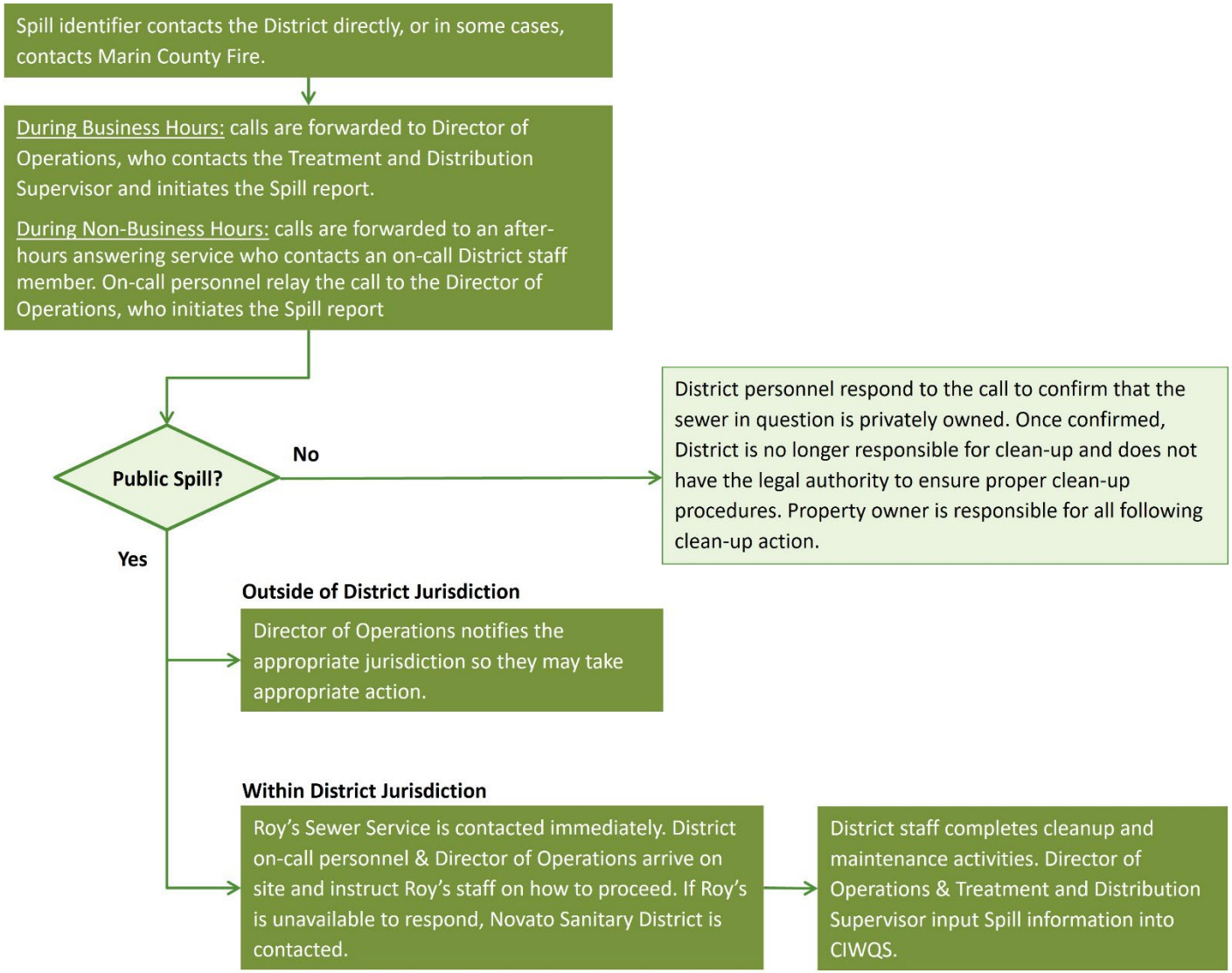
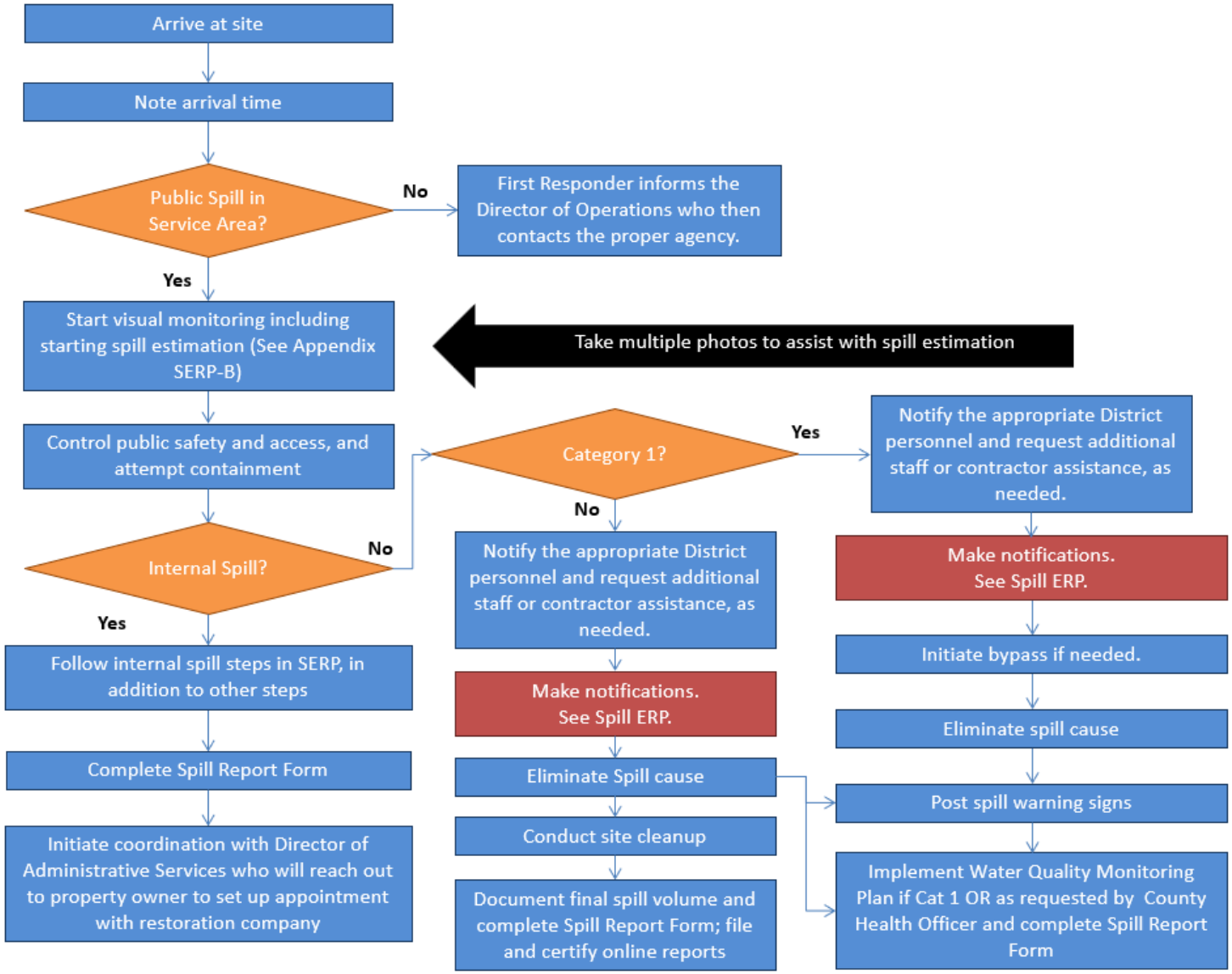


Figure 4-2. Spill Response Activities



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Chapter 5 Spill Containment Procedures

5.1 Spill Containment Procedures

District staff should attempt to contain as much of the spilled sewage as possible using the following steps:

- Determine the immediate destination of the overflowing sewage
- Plug storm drains (if applicable) using available and appropriate equipment and materials to contain the spill. Vacuum up and remove captured water and disinfect storm drainage pathways.
- Otherwise contain/direct the spilled sewage using dike/dam or sandbags
- Pump around the blockage/pipe failure/lift station or vacuum flow from upstream of the blockage and dispose of downstream of the blockage to prevent further overflow
- If a Spill reaches a water body, follow the requirements in the District's SERP for posting and Spill notification signage.
- All visible debris should be cleaned up within the vault and any spill outside of the vault will require decontamination, retrieval, and disposal of solids following guidelines provided in the SERP.

5.2 Available Spill Containment Equipment

The District uses the following equipment to manage spills following lift station failures:

1) Contractor's vacuum truck by contract
2) Portable pump and hose for North Street lift station
3) Straw wattles, sand bags, and other stormwater containment materials

5.3 Potential Spill Flow Paths

Figures 5-1 and 5-2 on the following pages show the estimated path of Spill flow to help plan for spill mitigation in case of a lift station failure.

Figure 5-1. Main Lift Station Possible Spill Flow Path

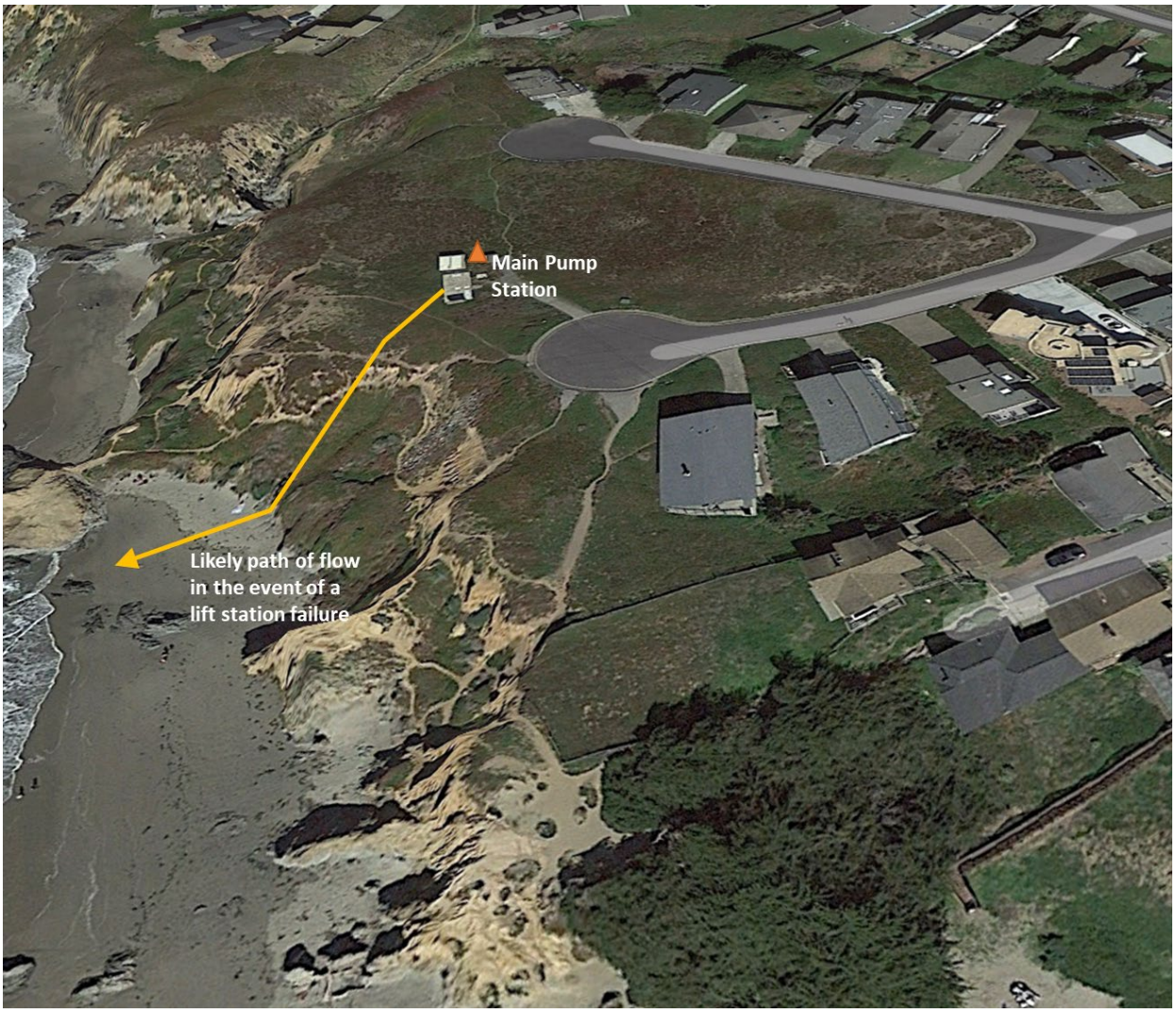
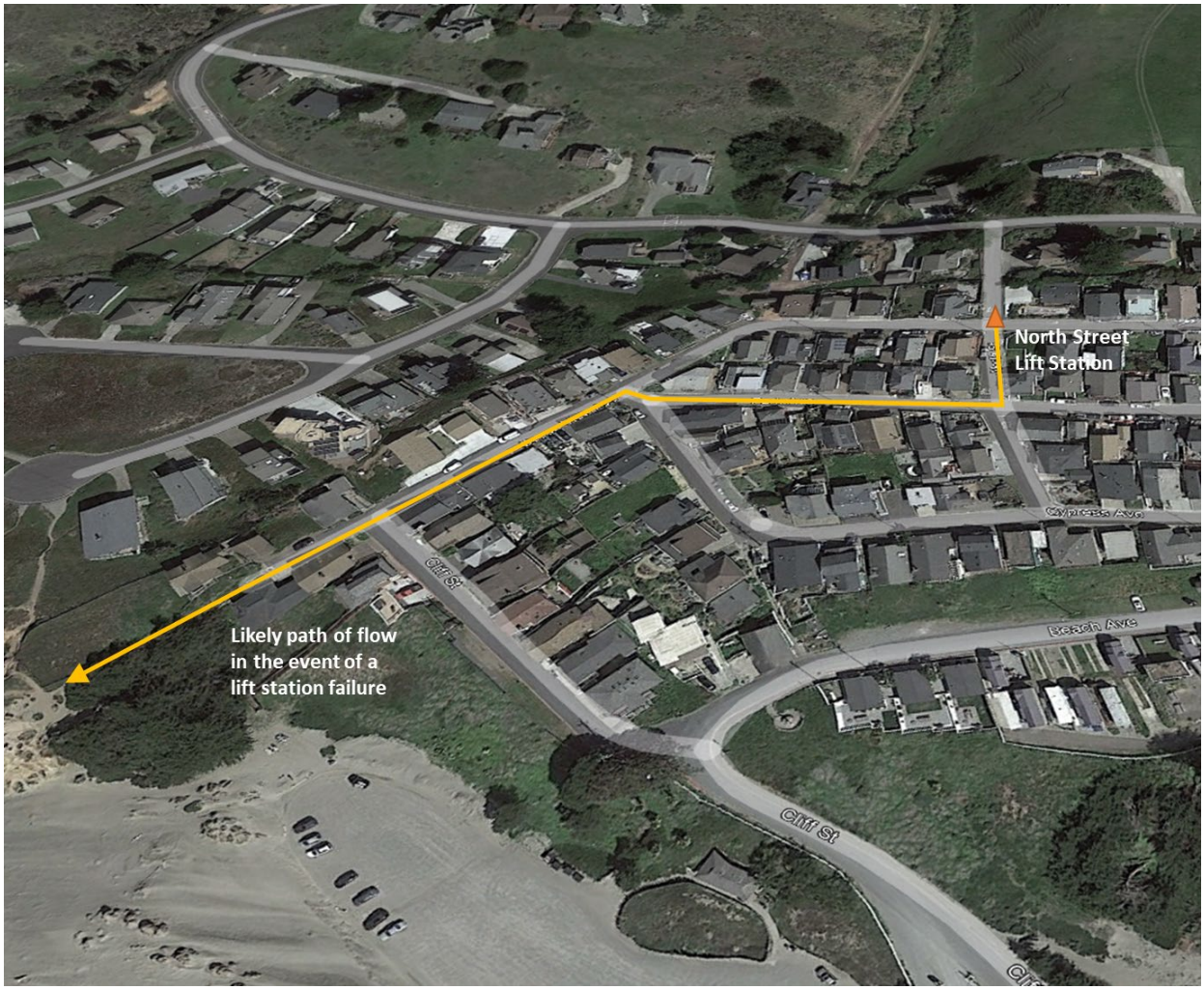


Figure 5-2. North Street Lift Station Possible Spill Flow Path



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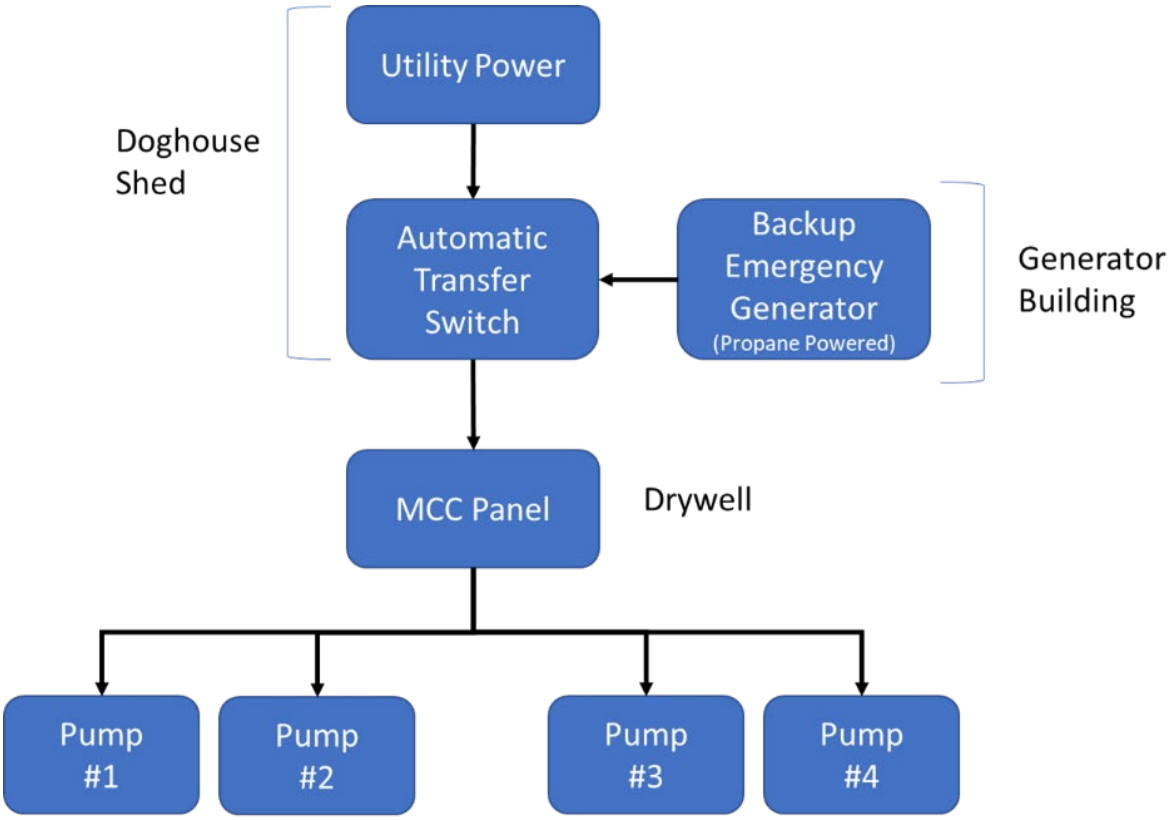
Chapter 6 Lift Station Control System

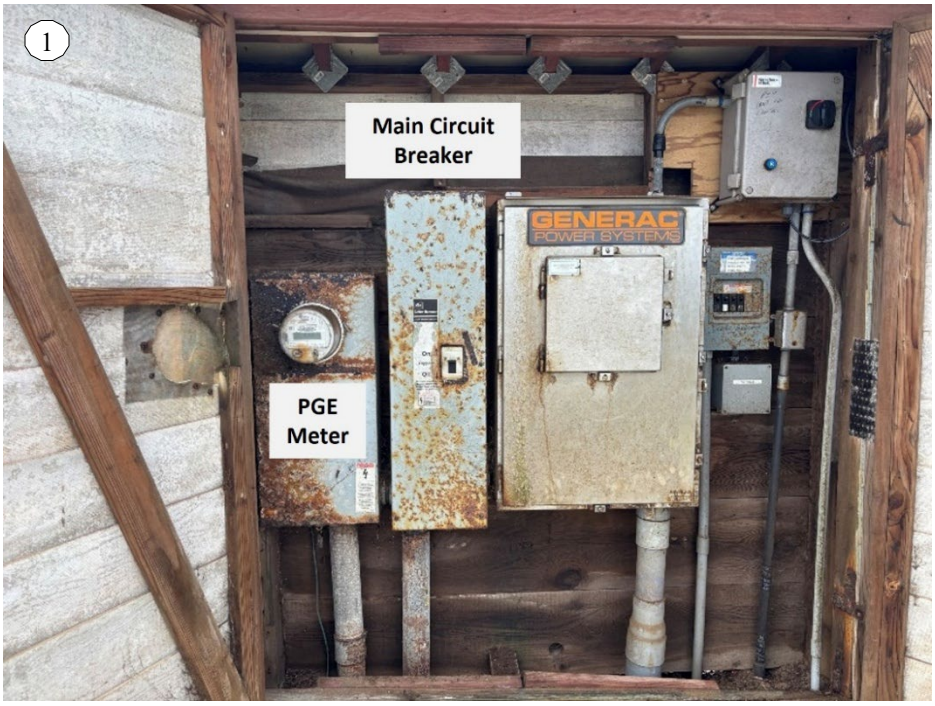
6.1 Oceana Marin Main Lift Station Power Map

This section provides photos showing the locations of the lift station power feed, circuit breaker, automatic transfer switch, and control panel.

Figure 6-1. Main Lift Station Electrical Components

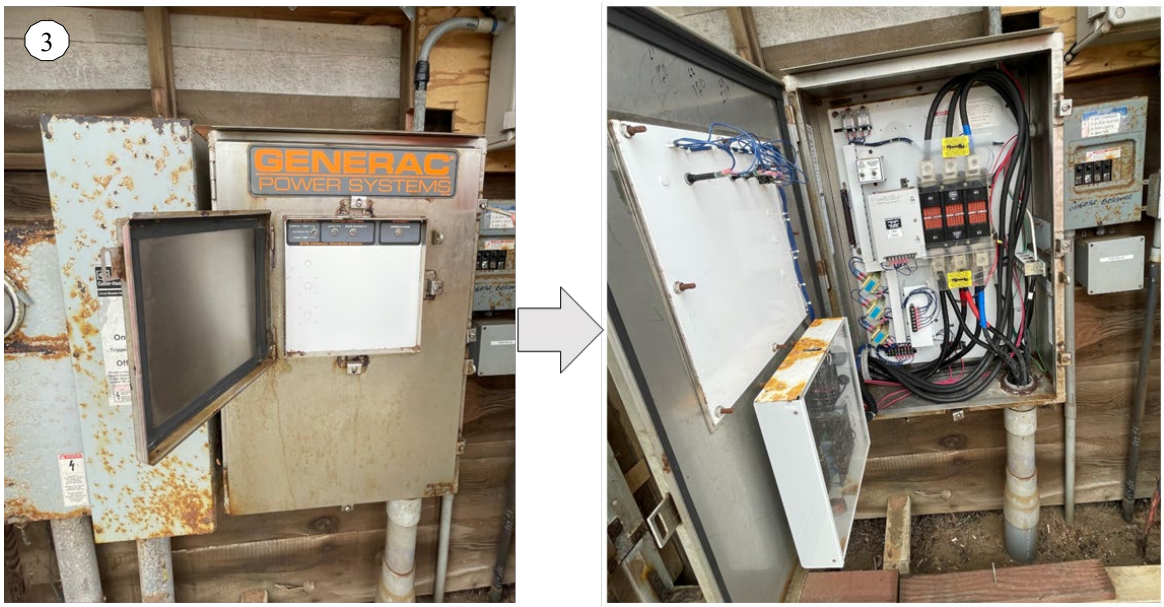


① **Utility Power:** The power meter and main circuit breaker on the left side of the doghouse shed.



② **Backup Emergency Generator:** The propane-fueled backup generator is located inside the masonry block generator building north of the lift station structure. The propane fuel tank is located to the east of the structure.

③ **Automatic Transfer Switch**: the automatic transfer switch is located within the doghouse shed.

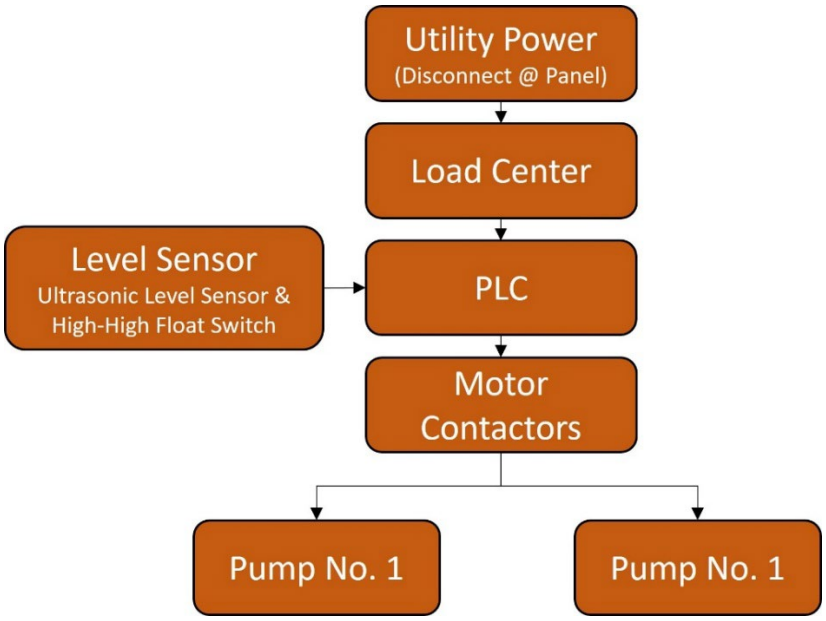


④ **Control Panels**: The pump motor controls, bubbler level control system and instrumentation equipment are located below ground, within the lift station dry well.

6.2 North Street Lift Station Power Map

This section provides photos showing the locations of the lift station power feed, circuit breaker, and control panel.

Figure 6-2. North Street Lift Station Electrical Components



① **Utility Power and Pump Control Panel**: The power meter, programmable logic controller, communication equipment, and hand-off-auto switches are located within a free-standing enclosure on the east side of 21 North Street.

Chapter 7 Lockout / Tagout (LO/TO) Procedures

7.1 Purpose

This procedure establishes the minimum requirements for LO/TO of energy sources that could cause injury to District personnel. All employees or contractors shall comply with the procedure.

7.2 Responsibility

The responsibility for seeing that this procedure is followed is binding upon all District employees. All employees shall be instructed in the safety significance and the purpose and use of the LO/TO procedure by the designated individual.

7.3 Rules for Using Lockout / Tagout Procedure

1. All energy sources shall be LO/TO out to protect against accidental or inadvertent equipment operation when District personnel are working directly on or in the vicinity of the energy source. **Do not** attempt to operate any switch, valve, or other energy-isolating device bearing a lock.
2. Locks or keys **shall not** be loaned to any other persons.
3. Tags with cable ties (50-lb. rating) are to be used if LO/TO devices and/or padlocks are not practical.

7.4 Preparation for Lockout

Employees authorized to perform LO/TO shall be certain as to which switch, valve, or other energy isolating devices apply to the equipment being LO/TO. If there is **any doubt** about the location of the **disconnect** or the **circuits**, an electrician should be called to be **sure** the **power** source is disconnected. More than one energy source (electrical, mechanical, or others) may be involved. Any questionable identification of sources shall be cleared by the employees with their supervisors. Before LO/TO commences, job authorization should be obtained from supervisors.

7.5 Sequence of Lockout / Tagout Procedure

1. Notify all affected employees that a LO/TO is required and the reason therefor.
2. If the equipment is operating, have qualified operator shut it down by the normal stopping procedure (depress stop button, open toggle switch, etc.).
3. Operate the switch, valve, or other energy isolating devices so that the energy source(s) (electrical, mechanical, hydraulic, etc.) is disconnected or isolated from the equipment. Stored energy, such as that in capacitors, springs, rotating flywheels, hydraulic systems, and air, gas, or water pressure, etc., must also be dissipated or restrained by methods such as grounding, repositioning, blocking, bleeding down, etc.
4. Lockout and tag energy-isolating devices with an assigned personal lock.
5. After ensuring that no personnel are exposed and as a check on having disconnected the energy sources, operate the push button or other normal operating controls to make certain the equipment will not operate.

6. Check circuit with meter.
7. **CAUTION: Return operating controls to neutral position after the test.**

The equipment is now LO/TO.

7.6 Procedure Involving More Than One Person

In the preceding steps, if more than one individual is required to LO/TO equipment, each shall place his own personal lock on the energy isolating device(s). One designated individual of a work crew or a supervisor, with the knowledge of the crew, may LO/TO equipment for the whole crew. In such cases, it may be the responsibility of the individual to carry out all steps of the LO/TO procedure and inform the crew when it is safe to work on the equipment. Additionally, the designated individual shall not remove a crew lock until it has been verified that all individuals are clear.

7.7 Restoring Equipment to Service

1. ***Locks shall not be removed until the job is completed!*** The person removing the last lock shall inform the supervisor/operator that work is completed and the equipment is ready to operate.
2. If work is completed and a lock remains on the equipment, it shall not be removed until the person to whom it is assigned is found, or the maintenance supervisor and department supervisor investigate to determine if the equipment is safe to operate. ***No employee may authorize removal of a lockout other than a supervisor who assumes complete responsibility for his/her action!***
3. When equipment is clear, remove all locks and lockout tags. The energy-isolating devices may be operated to restore energy to equipment.

The foregoing LO/TO policy and the LO/TO procedure has been read by me and explained by my supervisor. I understand that failure to comply with the District's established LO/TO procedure may lead to disciplinary action up to and including discharge from employment.

Employee's Signature	Supervisor's Signature

Chapter 8 Lift Station Bypass Procedures

8.1 Oceana Marin Main Lift Station Bypassing Procedures

The Oceana Marin Main lift station has a standby generator that will automatically start and provide back-up power. However, this station does not have provisions to bypass the lift station. Emergency storage may be available depending on the wet-well operating level and incoming flow. In case of emergency, a vacuum truck would be used to vacate the wetwell. This flow would then be driven to the treatment facility for disposal.

8.2 North Street Lift Station Bypassing Procedures

The North Street lift station has minimal storage capacity and requires a portable generator for backup power. Typical lead time is four hours for a generator to be set up. Should this station fail, a backup pump or vacuum truck would be required immediately to pump out water for discharge to the gravity manhole on Ocean View Avenue. The District should have a sufficiently-sized portable pump and sufficient hose (approximately 300 feet or more) to manage this response. During wet weather, incoming flow could exceed 5 gallons per minute.

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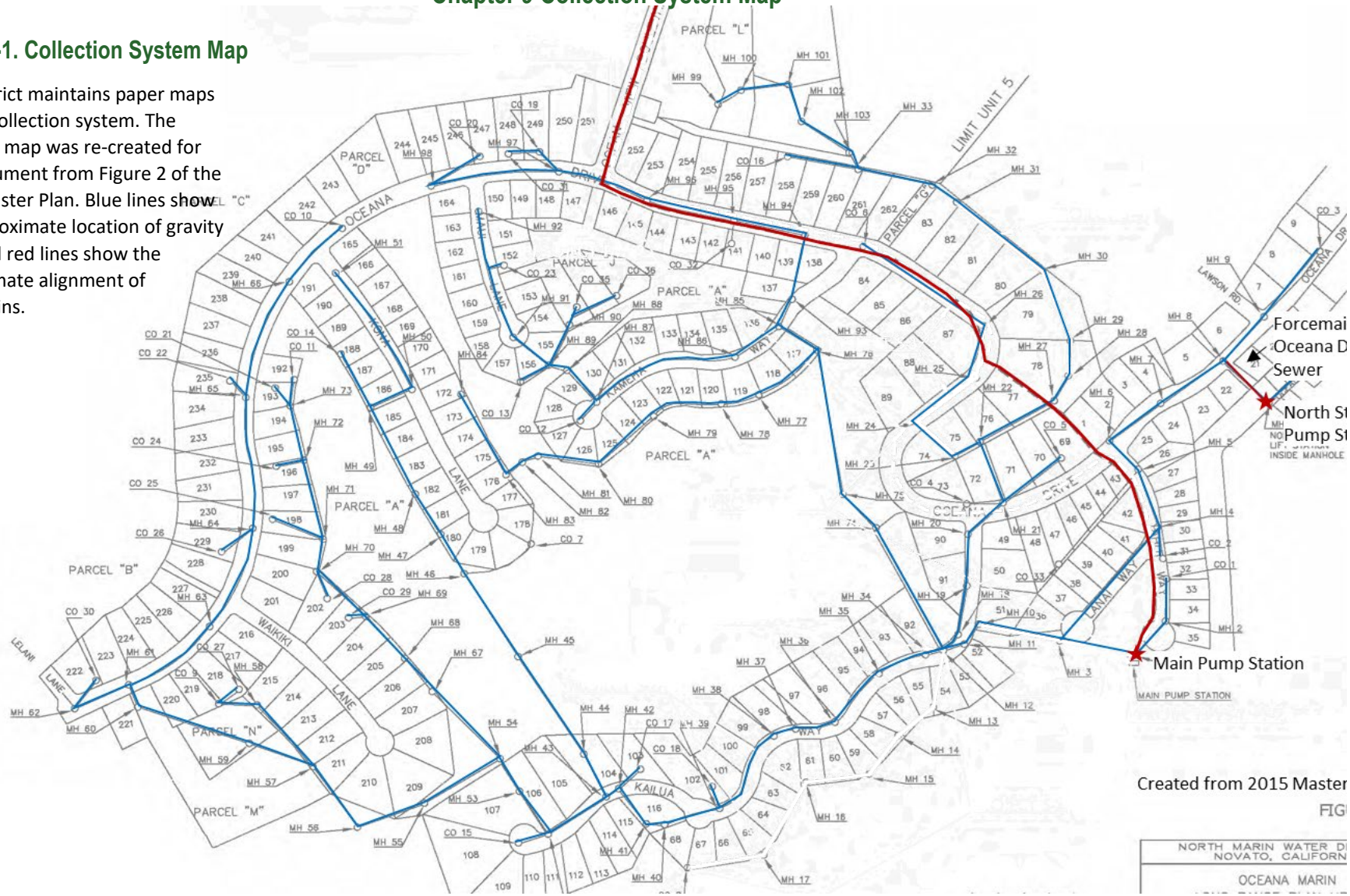
Chapter 9 Collection System Map

Figure 9-1. Collection System Map

The District maintains paper maps for the collection system. The adjacent map was re-created for this document from Figure 2 of the 2015 Master Plan. Blue lines show the approximate location of gravity lines and red lines show the approximate alignment of forcemains.



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Methods for Estimating Spill Volume

A variety of approaches exist for estimating the volume of a sanitary sewer spill. This Appendix documents the three methods that are most often employed. The person preparing the estimate should use the method most appropriate to the sewer overflow in question and use the best information available.

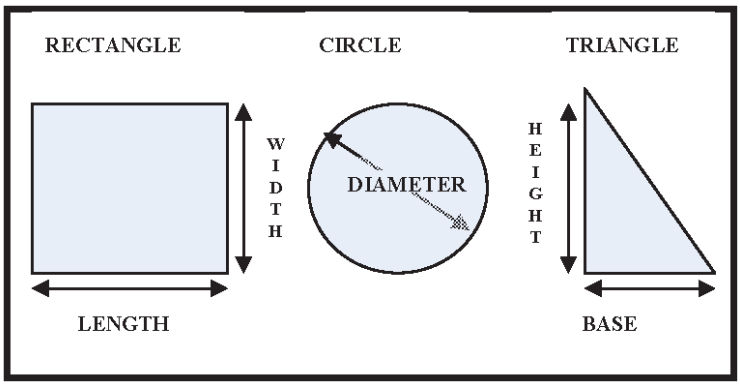
Method 1: Eyeball Estimate

The volume of small spills can be estimated using an "eyeball estimate". To use this method imagine the amount of water that would spill from a bucket or a barrel. A bucket contains 5 gallons and a barrel contains 50 gallons. If the spill is larger than 50 gallons, try to break the standing water into barrels and then multiply by 50 gallons. This method is useful for contained spills up to approximately 200 gallons.

Method 2: Measured Volume

The volume of most small spills that have been contained can be estimated using this method. The shape, dimensions, and the depth of the contained wastewater are needed. The shape and dimensions are used to calculate the area of the spills and the depth is used to calculate the volume.

Common Shapes and Dimensions



Step 1	Sketch the shape of the contained sewage (see figure above).
Step 2	Measure or pace off the dimensions.
Step 3	Measure the depth at several locations and select an average.
Step 4	Convert the dimensions, including depth, to feet.
Step 5	Calculate the area in square feet using the following formulas:

Rectangle: Area = length (feet) x width (feet)
Circle: Area = diameter (feet) x diameter (feet) x 0.785
Triangle: Area = base (feet) x height (feet) x 0.5

Step 6	Multiply the area (square feet) times the depth (in feet) to obtain the volume in cubic feet.
Step 7	Multiply the volume in cubic feet by 7.5 to convert it to gallons

Method 3: Duration and Flowrate

Calculating the volume of larger spills, where it is difficult or impossible to measure the area and depth, requires a different approach. In this method, separate estimates are made of the duration of the spill and the flowrate. The methods of estimating duration and flowrate are:

Duration

The duration is the elapsed time from the time the spill started to the time that the flow was restored.

Start Time: The start time is sometimes difficult to establish. Here are some approaches:

1. Local residents can be used to establish start time. Inquire as to their observations.

   Spills that occur in rights-of-way are usually observed and reported promptly. Spills that occur out of the public view can go on longer. Sometimes observations like odors or sounds (e.g. water running in a normally dry creek bed) can be used to estimate the start time.

2. Changes in flow on a downstream flowmeter can be used to establish the start time.

   Typically the daily flow peaks are "cut off" or flattened by the loss of flow. This can be identified by comparing hourly flow data during the spill event with flow data from prior days. This method will likely only be effective with consistent weather.

3. Conditions at the spill site change over time and can be used to establish the start time. Initially there will be limited deposits of toilet paper and other sewage solids. After a few days to a week, the sewage solids form a light-colored residue. After a few weeks to a month, the sewage solids turn dark. The quantity of toilet paper and other materials of sewage origin increase over time. These observations can be used to estimate the start time in the absence of other information. Taking photographs to document the observations can be helpful if questions arise later in the process. This method is valid for spills that have been occurring for a long time and may be used in conjunction with either of the above methods.

4. It is important to remember that spills may not be continuous. Blockages are not usually complete (some flow continues). In this case the spill would occur during the peak flow periods (typically 10:00 to 12:00 and 13:00 to 16:00 each day). Spills that occur due to peak flows in excess of capacity will occur only during, and for a short period after, heavy rainfall.

End Time: The end time is usually much easier to establish. Field crews on-site observe the "blow down" that occurs when the blockage has been removed. The "blow down" can also be observed in downstream flowmeters.

Flow Rate

The flowrate is the average flow that left the sewer system during the time of the spill.

There are three common ways to estimate the flowrate:

1. **The San Diego Manhole Flowrate Chart**: This chart, included as at the end of this appendix, shows sewage flowing from manhole covers at a variety of flowrates. The observations of the field crew can be used to select the appropriate flowrate from the chart. If possible, photographs are useful in documenting basis for the flowrate estimate.

2. **Flowmeter:** Changes in flows in downstream flowmeters can be used to estimate the flowrate during the spill.

3. **Counting Connections:** Once the location of the spill is known, the number of upstream connections can be determined from the sewer maps. Multiply the number of connections by 200 to 250 gallons per day per connection or 8 to 10 gallons per hour per connection.

For example: 22 upstream connections * 9 gallons per hour per connection

= 198 gallons per hour / 60 minutes per hour

= 3.3 gallons per minute

Spill Volume

Once duration and flowrate have been estimated, the volume of the spill is the product of duration (hours or days) and the flowrate (gallons per hour or gallons per day).

For example: Spill start time = 11:00

Spill end time = 14:00

Spill duration = 3 hours

3.3 gallons per minute x 3 hours x 60 minutes per hour

= 594 gallons

City of San Diego
Metropolitan Wastewater Department

Reference Sheet for Estimating Sewer Spills from Overflowing Sewer Manholes

All estimates are calculated in gallons per minute (gpm)

Wastewater Collection Division
(619) 654-4160

5 gpm

25 gpm

50 gpm

100 gpm

150 gpm

200 gpm

225 gpm

250 gpm

275 gpm

All photos were taken during a demonstration using metered water from a hydrant in cooperation with the City of San Diego's Water Department.

rev. 4/99

WARNING!
SEWAGE OVERFLOW
AVOID WATER CONTACT

PRECAUCION!
AGUA DE DESPERDICIO
MANTENGASE FUERA DEL AGUA

NORTH MARIN WATER DISTRICT

NORTH MARIN WATER DISTRICT
OCEANA MARIN SEWER
(415) 897-4133

SERP APPENDIX C

Water Quality Monitoring Program

Template for Spill Technical Report

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NORTH MARIN WATER DISTRICT
OCEANA MARIN SEWER
WATER QUALITY MONITORING PROGRAM

INTRODUCTION

This Water Quality Monitoring Program provides the agency's response activities and standard operating procedures to be utilized in the SERP, in the event a sanitary sewer spill (Spill) exceeds 50,000 gallons. This program is reviewed periodically and may be updated as necessary.

SWRCB Water Quality Monitoring Requirements

According to the State Water Resources Control Board (SWRCB) Order No. WQ 2022-0103-DWQ (Effective June 5, 2023), receiving water visual observations should be conducted for Category 1 spills less than 50,000 gallons. For Category 1 spills greater than or equal to 50,000 gallons, water quality sampling and analysis should also be conducted **within 18 hours** of initial knowledge of the spill.

The Water Quality Monitoring Program used to facilitate receiving water visual observations and water quality sampling shall include, at a minimum:

1. Description of receiving water visual observations, including spill volume-estimating techniques;
2. Description of all water quality sampling activities conducted;
3. List of pollutants and parameters monitored;
4. Laboratory results, including laboratory reports, as performed by a State Water Board-accredited laboratory. Analyses should employ sufficiently sensitive test methods as approved under 40 Code of Federal Regulation Part 136 for the sample analysis of pollutants;
5. Detailed location map illustrating all water quality sampling points; and
6. Other regulatory agencies receiving sample results, if applicable.

Additionally, for spills greater than 50,000 gallons, a Spill Technical Report is required and must be submitted within 45 calendar days from the Spill end date. The Spill Technical Report requirements are described in Section 4 of the SERP.

SAFETY

Be aware of safety issues and do not subject personnel to unsafe conditions in order to comply with this Water Quality Monitoring Plan. Scenarios where monitoring may not be possible may include, but are not limited to, heavy rain/storm events where access points have been compromised, flooding around low level areas, or fast-moving water. Employ the buddy system as required to maximize employee safety when sample collection is required.

RECEIVING WATER VISUAL OBSERVATIONS

Through visual observations and use of best available spill volume-estimating techniques and field calculation techniques, gather and document the following information for spills discharging to surface waters:

- Estimated spill travel time to the receiving water;
- For spills entering a drainage conveyance system, estimated spill travel time from the point of entry into the drainage conveyance system to the point of discharge into the receiving water;
- Estimated spill volume entering the receiving water; and
- Photography of:
    - Waterbody bank erosion,
    - Floating matter,
    - Water surface sheen (potentially from oil and grease),
    - Discoloration of receiving water, and
    - Impact to the receiving water.

ESTIMATION OF SPILL TRAVEL TIME

The following methods are recommended to estimate spill travel time and direction:

- Method-1; use a velocity probe if available to determine the rate of flow in the surface water or
- Method-2; take visual ft/sec measurement from above, based on floating debris, to estimate the number of feet the debris has traveled in seconds.

Either method will provide a means to estimate the distance traveled and identify where the SSO may be headed within the waterway.

WATER QUALITY SAMPLING PROCEDURES

- In the event a Spill reaches a surface water or (flowing) drainage channel tributary, take samples for spills less than 50,000 gallons as appropriate and within 18 hours for spills greater than 50,000 gallons. The purpose of water quality sampling is to determine the nature and extent of the impact of the Spill.
- When sampling an Spill, take a minimum of three separate sample sets as conditions allow. Water quality sampling should not be given precedence over stopping the spill or protection of public health. One sample shall be located upstream of the discharge location. The second sample shall be taken at the discharge location. A third sample shall be taken downstream of the discharge location. If sewage discharges to a surface water via a drainage conveyance system, sampling must also be taken at a point in the conveyance system before it discharges into a receiving water.
- Samples must be taken each day for the duration of the Spill.
- Sample for Total and Fecal Coliform, eColi, Ammonia, and Enterococcus as a minimum. Conduct additional sampling for pH and follow-up samples if practical.
- Additional follow-up samples are recommended to confirm the extent that the impact reverts back to baseline levels. Follow-up samples may be used to determine if posting of warning signs should be discontinued (if signs were posted).
- Collaboration with the County Health Department should continue until closure is obtained.
- Do not forget to take into account Spill Travel Time.

WATER QUALITY SAMPLING EQUIPMENT

The following list describes equipment that should be stocked and readily available for each water quality sampling event.

- Personnel protective equipment including latex/nitrile gloves and eye protection.
- 3 – 100 mL sterile plastic containers for coliform analysis.
- 3 – 500 mL Poly containers preserved with H2SO4 for Ammonia analysis.
- 3 – sterile funnels.
- 1 – Sample Collection Container.
- Cooler with ice packs.
- Chain of Custody forms.

Ensure that there are adequate quantities of sample containers and kits if there are more than three sample locations.

WATER QUALITY SAMPLING PROCEDURE

1. Put on all required protective equipment including latex/nitrile gloves and eye protection.
2. Use the 100 mL sterile container for coliform and 500mL poly container for ammonia. Ammonia sample requires preservation with H_2SO_4 .
3. Collect four sets of samples for each incident:
    a. A point in the receiving water upstream of the discharge location to capture ambient water quality conditions,
    b. A point in the receiving water where sewage initially enters the receiving water,
    c. A point downstream of the discharge location where sewage is fully mixed with the receiving water, and
    d. A point in a drainage conveyance system before the drainage conveyance system flow discharges into a receiving water (if applicable).
4. Collect all grab samples approximately 3’ - 6” below the surface (or if shallower, as close as possible to this depth) to avoid sampling debris or scum from the surface.
5. Collect the sample in a safe manner in the middle of the flow, against the direction of water flow.
6. Rinse the sample collection container.
7. Collect sample in sample collection container and photo-document the locations.
8. Transfer sample from sample collection container to individual sample bottle(s).
9. Leave approximately one inch of head space in individual sample bottles. Do not overfill.
10. Once the lid is opened for the individual sample bottle, do not touch the inside surface of the bottle or lid.
11. For the sample bottles that contain a preservative, take care to keep the preservation material in the container.
12. Immediately place all sample bottles on ice.
13. Complete Chain of Custody form and take samples to contracted environmental laboratory as described in the SERP.

Following are allowable hold times for the sample bottles:

- Ammonia - 28 days (preserved and cooled).
- Bacterial Indicator (enterococcus or fecal/total coliform) - 8 hours (preserved and cooled).
- pH Field Test – Immediate.

ON LETTERHEAD

Date

State Water Resources Control Board
1001 I Street
Sacramento, CA 95814

Subject: Technical Report for Sanitary Sewer Overflow Greater than 50,000 Gallons
Event ID: XXXXXX

This submittal comprises the Sanitary Sewer Spill ("Spill") Technical Report ("Report") that is required by State Water Resources Control Board ("SWRCB") Order No.WQ 2022-0103-DWQ ("Order"). The Order requires each enrollee to submit an Spill Technical Report in the California Integrated Water Quality System ("CIWQS") online Spill database within 45 calendar days of the Spill end date for any Spill in which 50,000 gallons or greater are spilled to surface waters.

This Report comprises the following sections:

1. Causes and Circumstances of the Spill
2. Response to Spill
3. Water Quality Monitoring
4. Spill Impact Evaluation

1.0 CAUSES AND CIRCUMSTANCES OF THE Spill

A. Description of how and when the Spill was discovered.:

B. Photographs illustrating the spill origin, the extent and reach of the spill, drainage conveyance system entrance and exit, receiving water, and post-cleanup site conditions:

C. Diagram showing the spill failure point, appearance point(s), the spill flow path, and ultimate destinations:

D. Detailed description of the methodology employed, and available data used to calculate the discharge volume and, if applicable, the recovered spill volume:

E. Detailed description of the spill cause(s):

F. Description of the pipe material, and estimated age of the pipe material, at the failure location:

G. Description of the impact of the spill:

H. Copy of original field crew records used to document the spill are included at the end of this report.

I. The Order requests historical maintenance records for the failure location. The associated pipe segment cleaning and CCTV history is provided in Table 1.

Table 1. Maintenance Results for Pipe Segment XXXXX-XXXX

Date	Action: Clean or CCTV	Summary of Findings

2.0 RESPONSE TO SPILL

A. Chronological narrative description of all actions taken by the Enrollee to terminate the spill:

B. Explanation of how the Sewer System Management Plan Spill Emergency Response Plan was implemented to respond to and mitigate the spill:

C. Final corrective action(s) completed and a schedule for planned corrective actions, including:

a) Local regulatory enforcement action taken against an illicit discharge in response to this spill, as applicable:

b) Identifiable system modifications, and operation and maintenance program modifications needed to prevent repeated spill occurrences:

c) Necessary modifications to the SERP to incorporate lessons learned in responding to and mitigating the spill:

3.0 WATER QUALITY MONITORING

A. Description of all water quality sampling activities conducted:

B. List of pollutant and parameters monitored, sampled and analyzed:

C. Laboratory results, including laboratory reports:

D. Detailed location map illustrating all water quality sampling points

E. Other regulatory agencies receiving sample results (if applicable):

4.0 SPILL IMPACT EVALUATION

A. Evaluation of spill impact(s), including a description of short-term and long-term impact(s) to beneficial uses of the surface water:

If you have further questions or would like additional information about this Technical Report, please contact me by phone at (415) 761-8919 or by email at tkennedy@nmwd.com.

Sincerely,

Tim Kennedy
Director of Operations

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Appendix F

Element 7 (Sewer Pipe Blockage Control Program) Supporting Documents

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FOG

FATS, OILS, & GREASE

NORTH MARIN WATER DISTRICT

What is FOG?

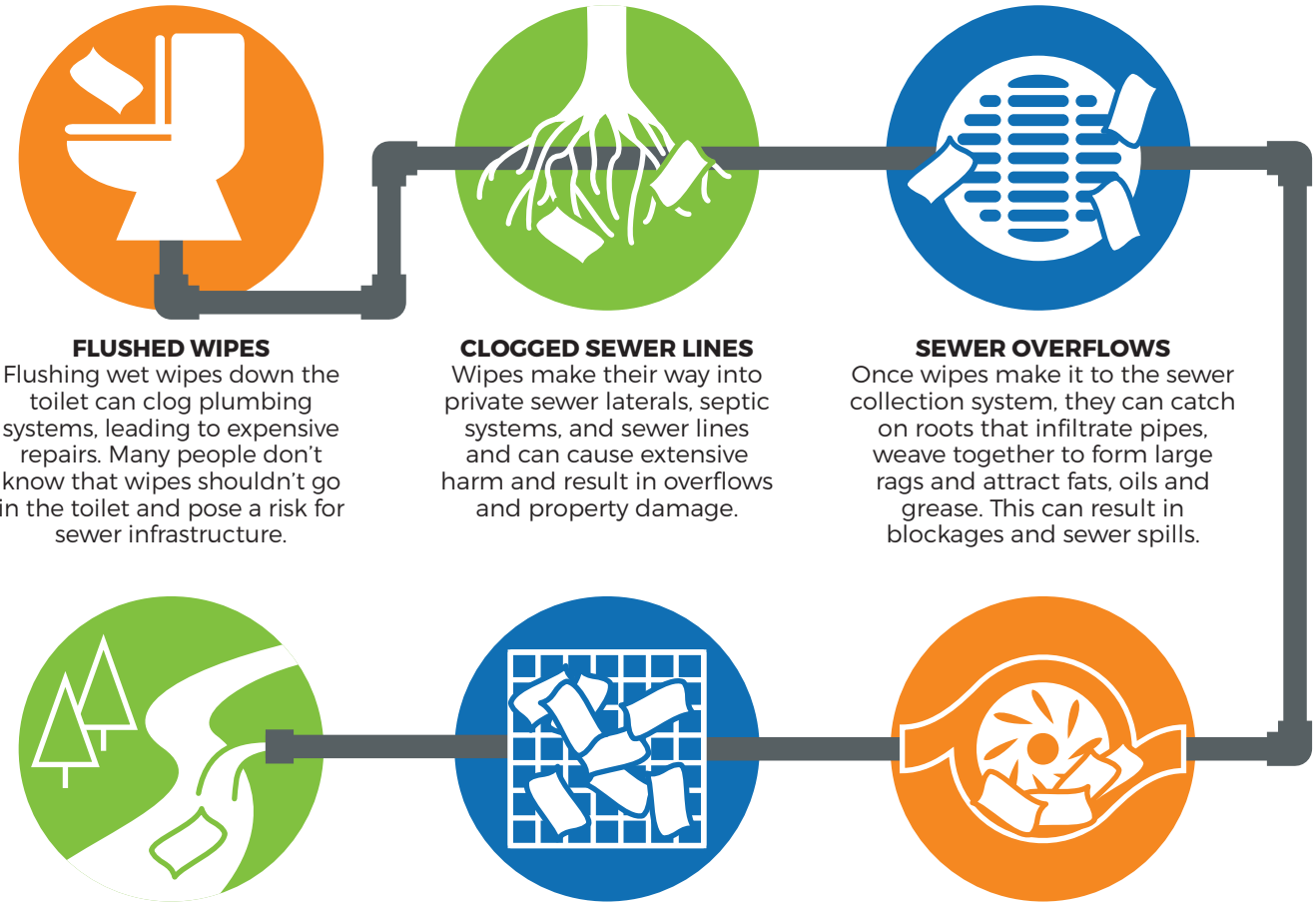
FOG stands for Fats, Oils, and Grease. Did you know that pouring fats, oils, and grease down the drain or garbage disposal creates obstructions in underground pipes (private and public) and creates serious problems like blockages and sewer overflows? In fact, FOG can be one of the leading causes of sewer overflows and blockages in the United States. When washed down the sink, grease sticks to sewer pipes (both on your property and in the streets). Over time, grease buildup can clog an entire pipeline, causing sewer overflows in our community. The damage from overflows could cost you and the North Marin Water District thousands of dollars in repairs.

Prevent sewer overflows with these simple tips:

- Do not pour cooking oil, greasy food, dairy products, or salad dressing down the drain.
- Use strainers in the sink drains to catch food scraps and other solids.
- Do not use hot water and soap to try to wash grease down the drain. It will eventually cool and harden in the sewer lines.
- Pour cooled grease into a disposable container, cover with a tight fitting lid and place in your freezer. Once contents are frozen, toss in the garbage.
- Mix cooking oils with absorbent material such as coffee grounds or cat litter. Place in tight lidded container and dispose of it in garbage.
- Wipe or scrape food particles from pots, pans, and dishes into the trash can prior to placing them in the sink for washing.
- Wipe excess fats and grease from pans with a dry paper towel and toss it in the garbage.

For more information visit: nmwd.com/your-water/oceana-marin-sewer/

WIPES CLOG PIPES



FLUSHED WIPES
Flushing wet wipes down the toilet can clog plumbing systems, leading to expensive repairs. Many people don't know that wipes shouldn't go in the toilet and pose a risk for sewer infrastructure.

CLOGGED SEWER LINES
Wipes make their way into private sewer laterals, septic systems, and sewer lines and can cause extensive harm and result in overflows and property damage.

SEWER OVERFLOWS
Once wipes make it to the sewer collection system, they can catch on roots that infiltrate pipes, weave together to form large rags and attract fats, oils and grease. This can result in blockages and sewer spills.

DAMAGED COLLECTION SYSTEMS
Most collection systems rely on pumps to move wastewater to treatment facilities. Wipes can clog these pumps, resulting in spills, system failures, increased maintenance requirements and damage to expensive equipment.

DISRUPTED TREATMENT PLANTS
Oftentimes, masses of wipes manage to make it through the collection system and end up at wastewater treatment plants, which can result in significant damage to treatment infrastructure and recurrent disruption of the treatment process.

ENVIRONMENTAL HARM
Even when wipes filter out of the wastewater stream, small microfibers and microplastics can shed off wipes. These fibers can't be captured and can make their way into the environment.

CASA
CALIFORNIA ASSOCIATION OF SANITATION AGENCIES

casaweb.org/wipes

Appendix G

Element 8 (System Evaluation and Capacity Assurance) Supporting Documents

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North Marin Water District

2015 MASTER PLAN UPDATE

Final Report

For the Oceana Marin Wastewater System

NMWD Job File 8 4046.00

January 13, 2016

Nute Engineering | 907 Mission Ave | San Rafael, CA 94901
Tel: 415.453.4480 | Fax: 415.453.0343 | www.nute-engr.com

907 Mission Avenue | San Rafael, CA 94901 | Phone 415-453-4480 | Fax 415-453-0343 | www.nute-engr.com

NUTE ENGINEERING

Civil & Sanitary Consultants

January 13, 2016

Mr. Drew McIntyre, Chief Engineer
North Marin Water District
999 Rush Creek Place
Novato, CA 94948

Re: Oceana Marin Wastewater System
2015 Master Plan Update
NMWD Job File 8 4046.00

Letter of Transmittal

Dear Drew:

As authorized we have completed the 2015 Master Plan Update for the Oceana Marin Wastewater System.

In brief summary, we have identified improvements to the gravity sewer system necessary to reduce the entrance of extraneous water due to infiltration/inflow as well as improvements to the main pump station and the treatment and storage ponds necessary to improve their reliability. We also recommend construction of a parallel force main from the main pump station to the ponds to improve reliability and provide redundancy. The effluent disposal field requires additional study to determine if improvements might be necessary.

The most critical project involves upgrading the main pump station by relocating the motor control center and other electrical equipment out of the pump pit to a new small building next to the engine generator set building. This will eliminate the possibility that the electrical work will be flooded out which would render the pump station inoperable.

The estimated cost of these improvements in 2015 dollars is $3.12 million, not including any improvements to the disposal field. If these improvements are undertaken over a 20 year period the annual expenditure would be $156,000, plus the adjustment for inflation.

We appreciated the opportunity to assist the NMWD on this planning effort and hope to keep involved as these projects are implemented.

Very truly yours,

NUTE ENGINEERING

By: Mark T. Wilson, P.E.

By: W. Edward Nute, P.E.

NORTH MARIN WATER DISTRICT
OCEANA MARIN WASTEWATER SYSTEM 2015 MASTER PLAN UPDATE

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OCEANA MARIN WASTEWATER SYSTEM
2015 MASTER PLAN UPDATE

BACKGROUND

The Oceana Marin subdivision was originally developed in the 1960s and is located just north of the older unincorporated community of Dillon Beach. The streets in Oceana Marin are private and patrolled but the community is not gated.

Wastewater in Oceana Marin is collected by gravity sewers and then pumped to a treatment facility consisting of two ponds and a subsurface disposal field. Since all treated wastewater is retained on land the Oceana Marin facility is able to operate under Waste Discharge Requirements which were adopted in 1992. Except for nine homes, the community of Dillon Beach is not connected to the Oceana Marin sewer system.

The current Oceana Marin wastewater system now serves 229 single family homes with a build out potential of approximately 300 homes. Potable water is provided to Oceana Marin residents by the Estero Mutual Water Company and the Cal Water Service Company, depending on location.

Oceana Marin is situated on a hillside above the Pacific Ocean overlooking a popular recreational beach. Any sewage spill would flow directly onto the beach and into the Pacific Ocean. Fines assessed for a spill could be very large. For this reason it is important to assure there is sufficient redundancy and reliability in the wastewater collection, pumping, treatment and disposal system.

A Long Range Plan Update, dated December 2005, was prepared for the Oceana Marin Wastewater System by Bracewell Engineering, Inc. The 2005 Long Range Plan updated previous plan reports prepared in 1990 and 1996. These earlier plans provided background information on the wastewater flows and operational data on the pumping, treatment and disposal trenches.

The wastewater treatment system consists of two ponds, one of which is used primarily for storage. The overall capacity of the Oceana Marin sewer system is limited by the ability of the trench disposal system to dispose of the treated effluent, which includes extraneous infiltration/inflow (I/I) to the sewer system, rainwater falling on the ponds and pond seepage return flows. The 2005 Long Range Plan concluded that the capacity of the pond treatment system was adequate for the projected growth through 2015.

The recommendations of the 2005 report focused on improving and optimizing the effluent disposal field. In addition, the report recommended that a study be conducted of how best to minimize the I/I to the sewer system to allow more efficient operation of the pump station and to increase the margin of safety in the operation of the disposal field.

There are also concerns about the wind erosion of the banks of two treatments ponds and there have been instances of plugging of the drip irrigation lines going to the leach field by algae from the ponds. It may be necessary to line the ponds or at least control the bank erosion. The ponds are close to various potable water well sites so it is important to make sure there is no cross contamination.

The disposal capacity of the trench field was tested in 1995 and found to be 63,000 gallons per day (gpd). The 2005 report did not test the trench field but concluded that the disposal capacity was 29,600 gpd based on actual operation. Apparently, the lesser disposal capacity is adequate for the present needs but it may be advisable to set up another test. The original testing was conducted twice, once during the spring and a second time during the summer. Each test was conducted over a 30 day period.

OBJECTIVE

The objective of the 2015 Master Plan Update for the Oceana Marin Wastewater System is to update the previous Master Plans including an evaluation of the capacity and future demands over a 20 year planning period and to provide a list of recommended capital improvement projects.

APPROACH

The operational success of the Oceana Marin sewage system depends on the disposal of all the sewage and any extraneous water generated in the sewer system. The approach to developing the 2015 Master Plan Update will consist of analyzing and updating the available flow and monitoring data in the previous master plans, reviewing the present condition of the various pumping, treatment and disposal facilities and developing a program of capital improvements.

The following are considered critical factors in the operation of the Oceana Marin system:

- Minimize inflow/infiltration of extraneous storm water and groundwater which enter the sewer system.

- Ensure reliability of the pump stations.

- Provide redundancy in the mechanical systems as well as the force main. Construction of a second parallel force main might be advisable.

- Maintain the pond treatment and storage capacity of the two ponds including controlling bank erosion.

- Maintain the effectiveness of the trench disposal system as necessary to dispose of all the wastewater generated in Oceana Marin.

Because of the close proximity of Oceana Marin to beaches the Long Range Plan Update summarized below focuses on providing redundancy and reliability for the Oceana Marin sewer system.

PREVIOUS STUDIES

Since its construction in the 1970s the following studies have been conducted on the Oceana Marin wastewater system:

- Bracewell Engineering, "*Disposal System Capacity at Oceana Marin Final Report*", 1990

- Bracewell Engineering, "*Long Range Master Plan for Oceana Marin Wastewater System*", 1996

- Bracewell Engineering, "*Long-Range Master Plan Update for Oceana Marin Wastewater System*", December 2005

The 1990 report evaluated the capacity of the disposal field and recommended modifications to the pond treatment system and disposal field to increase the effluent disposal capacity. These improvements were completed in 1991.

The 2005 Master Plan Update reviewed the operation data of the Oceana Marin system and concluded that the capacity of the existing disposal system is the limiting unit process.

FACILITY INSPECTION

As a part of developing the Master Plan an inspection of the Oceana Marin facilities was made on April 16, 2015. Inspections were made of the two pump stations, the treatment and storage ponds, dosing siphon and disposal field. We also walked the sewer alignment along the cliff below Kailua Way. In attendance were Robert Clark, Brad Stompe and Vernon Stafford of the NMWD staff, Todd Beecher of Beecher Engineers, Troy Pearce of AYS Engineering Inc. and Mark Wilson and W. Edward Nute of Nute Engineering.

SERVICE NEEDS

The Oceana Marin service area is shown on Figure 1, which shows the NMWD Improvement District of Oceana Marin and Dillon Beach and the annexations. The Oceana Marin service area comprises all of Oceana Marin and nine homes along Ocean View Ave in the older section of Dillon Beach.

Land Use in Oceana Marin is governed by the Dillon Beach Community Plan dated August 1989, which was approved by the California Coastal Commission in June 1989. Oceana

1"=200'

FIGURE 1

NO.	DATE	REVISION	BY	APP.
2	9/3/13	ADDED ANNEXATION NO. 11 TO OM-3	AC	CC
1	01/04/07	ADDED ANNEXATION NO. 10 TO OM-3	AC	CC
0	11/01/04	FIRST CAD FILE EDITION		

NORTH MARIN WATER DISTRICT
NOVATO, CALIFORNIA

NORTH MARIN WATER DISTRICT
IMPROVEMENT DISTRICTS
OCEANA MARIN AND DILLON BEACH

DES	DR	CH	SCALE : 1"=200'
	CC		DATE : 11/01/04
APPROVED: CHIEF ENGINEER			SHEET NO. : 1 OF 1 SHEETS
R.E. C40936			SERVICE AREA / JOB.NO. / NO.001

Marin is a planned community with single family homes and a potential for multiple units. Table 1 summarizes the potential dwelling units in the Oceana Marin service area.

TABLE 1 – OCEANA MARIN SERVICE AREA – SERVICE CONNECTIONS

	Potential Homes	Existing Homes
Oceana Marin		
Original subdivision unit	262	216
Parcel J	3	3
Parcel K zoning	14 – 38	0
Parcel L zoning	5 – 13 (act = 4)	0
Parcel M	1	1
Old Dillon Beach homes	17	11
TOTALS	**302 – 334**	**231**

Even though Parcels K and L are zoned for as many as 38 and 13 homes respectively it is likely that the actual number will be on the low end. In fact Parcel L, zoned for 5 – 13 homes, was subdivided into only 4 parcels in 2006. The number of lots was restricted because of a jurisdictional wetlands on the parcel.

Assuming the low numbers of homes for Parcels K and L the potential build out of the present service area would be 302 units. For the purpose of this study it is estimated that the total number of connections to the present service area of the Oceana Marin sewer system will be around 300 homes.

The vacant lots in the original subdivision are slowly being built out. Historically NMWD estimates that the rate of growth in Ocean Marin has been approximately 1 new home connection per year.

The occupancy of the homes in Oceana Marin is difficult to estimate. There are some full time residents, weekenders, renters as well as seasonal weekenders and renters. The Bracewell Master Plan of 2005 analyzed the flow records between 1973 and 2005 and concluded that the average occupancy was 1.35 persons per home with a flow of 76 gallons per capita per day (gpcd). In the ten years since 2005 there h have been only 13 new connections and the conditions in Oceana Marin have not changed except for the recent drought. For the purpose of this report it is concluded that the occupancy of 1.35 persons per connection appears to be reasonable.

Table 2A

NMWD OCEANA MARIN WASTEWATER SYSTEM

INFLUENT FLOWS TO PONDS, Gallons

YEAR	2009	2010	2011	2012	2013	2014	2015	ADF
JAN	330,000	914,000	790,000	475,000	930,000	382,000	930,000	21,894
FEB	663,000	581,180	577,000	432,000	426,000	658,000	564,350	19,906
MAR	383,000	649,000	875,330	640,000	422,000		449,036	18,378
APR	420,000	533,000	577,000	558,000	498,000	590,439	405,011	17,055
MAY	440,000	276,000	522,000	416,000	390,000	410,000		13,194
JUNE	448,000	641,000	484,000	408,000	408,000	455,000		15,800
JULY	614,000	589,000	799,000	434,000	751,000	610,307		20,416
AUG	440,000	651,000	535,000	547,000	376,000	532,004		16,565
SEPT	441,000	388,000	414,000	432,000	404,000	370,491		13,608
OCT	386,000	411,000	424,000	422,000	421,000	381,494		13,148
NOV	361,000	414,000	467,000	425,000	460,000	438,000		14,250
DEC	419,000	924,000	535,000	783,000	237,000	1,035,200		21,146
TOTALS	**5,345,000**	**6,971,180**	**6,999,330**	**5,972,000**	**5,723,000**	**5,862,935**	**2,348,397**	

Table 2B

NMWD OCEANA MARIN WASTEWATER SYSTEM

DISCHARGE TO IRRIGATION FIELDS OCT - SEPT

YEAR	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15
OCT	0	0	637,000	559,000	0	212,000
NOV	0	699,000	662,000	0	0	344,000
DEC	647,000	718,000	632,000	0	0	0
JAN	347,000	591,000	0	818,000	0	992,000
FEB	738,000	858,000	0	809,000	0	254,000
MAR	924,000	1,190,000	0	770,000		725,000
APR	592,000	880,000	0	0	892,560	98,000
MAY	782,000	1,010,000	0	529,000	542,000	
JUN	0	0	294,000	156,000	489,000	
JUL	555,000	400,100	582,000	304,000	0	
AUG	1,040,000	771,000	757,000	359,000	459,000	
SEP	0	0	603,000	377,000	0	
TOTALS	**5,625,000**	**7,117,100**	**4,167,000**	**4,681,000**	**2,382,560**	**2,625,000**

WASTEWATER FLOWS

The main Oceana Marin pump station is equipped with a flow meter as is the discharge to the effluent disposal field. Table 2A summarizes the monthly influent flows pumped to the treatment pond between 2010 and 2015 and Table 2B summarizes the monthly flows to the disposal field between the months of October through September of the next year for the years 2010 – 2015.

As described above Oceana Marin has some full time residents, including renters and some vacation rentals. The higher flow for June, July and August would correspond with vacation rentals during the summer. Because of its remote location and uncertain weather, Oceana Marin will probably never be fully occupied with permanent residents.

Table 3 gives two projections of the average dry weather flow (ADWF) and two projections of the per capita flow rate. The first projection includes only the months of June July and August and the second includes the months of May through September. As can be seen in Table 2A the three summer months and particularly the month of July have higher flows than May and September, probably due to higher summer occupancy. The three month ADWF is approximately 10% higher than the five month ADWF.

TABLE 3 DRY WEATHER FLOW ASSUMPTIONS

Connections	229
Average Occupancy Rate, persons/connection	1.35
Average Population	309
ADWF June, July, August, 2009–2014, gallons	17,612
Per capita flow, gpcd	57
ADWF May through September, 2009-2014, GPD	15,917
Per capita flow, gpcd	51.5
Biochemical Oxygen Demand (BOD), mg/l	200
Suspended Solids, mg/l	200

Using the Bracewell assumption of 1.35 persons per connection and the existing 229 connections to the Oceana Marin sewer system the per capita flow rate is computed to be 57 gpcd for June July and August which represents a 25% reduction from the 76 gpcd projected by Bracewell in 2005. This reduction may be explained by the prolonged drought in the area. For the five months between May and September the per capita flow rate computes to be 51.5 gpcd. Once the drought subsides the per capita sewage discharge may rebound closer to the 76 gpcd.

For the purpose of projecting annual base sewage flows we have assumed that the May through September ADWF is more appropriate. For the existing development of 229 homes the annual base sewage flow @15,917 GPD will be 5,809,705 gallons.

At a full build-out the Oceana Marin development of an estimated 300 homes at the Bracewell occupancy rate of 1.35 persons/connection and a per capita flow rate of 51.5 gpcd would produce a dry weather flow of around 20,858 god producing an annual base flow of 7,612,988 gallons. If the per capita flow rate increases to 76 gpcd the annual base flow will be 11,234,700 gallons.

Infiltration/Inflow – The flow pumped to the ponds is influenced by infiltration/inflow (I/I) into the sewer system. The County maintains a weather station at Oceana Marin. Graphs of the daily rainfall for 2010 through 2015 are shown in Appendix A. The recorded rainfall totals between October 1 and September 30 for these years together with the measured sewage flow and flow to the disposal field are shown in Table 4.

The flows to the disposal field are managed so that the ponds are as low as possible at the end of the dry season, i.e. in October. This maximizes the ability to store winter flows in the ponds and minimizes the loading on the disposal field in the winter. During the summer and over a prolonged drought water is lost through evaporation, which accounts for the lower flow applied to the disposal field than comes into the ponds.

TABLE 4 – RAINFALL VERSUS TOTAL ANNUAL FLOWS

Time period	Rainfall	Total flow to ponds, gal	Excess flow over base flow*, gal	Total flow to disposal field, gal
10/1/09–9/30/10	30.93”	6,338,180	528,475	5,625,000
10/1/10–9/30/11	36.01”	7,322,330	1,512,625	7,117,100
10/1/11–9/30/12	23.95”	5,768,000	(41,705)	4,167,000
10/1/12–9/30/13	23.82”	6,235.000	425,295	4,681,000
10/1/13–9/30/14	18.12”	5,126,241	(190,037)	2,382,560
10/1/14–4/15/15	22.69”	4,203,091	828,687	2,625,000

*Base flow for the existing 229 connections is estimated to be 5,809,705 gallons or as prorated for missing data.

It should be noted that 2014 and 2015 were considered drought years and the domestic water usage and I/I would have been lower than the historic normal. During these years the flow to the disposal field was about half that of other years.

Although this is less than six full years of data it is apparent that the total flow to the ponds is greatly influenced by the rainfall. The average rainfall for Oceana Marin is probably

around 30". The last four years had less than normal rainfall. It should be noted that for the period between October 1, 2014 and April 2015, a total of 12.69" of rain was recorded in December 2014 and 3.58" of rain fell over three days in February 2015. These two concentrated storms probably account for the 868,687 gallons of excess sewage flow over the prorated base flow even though the total rainfall October 1, 2014 to April 2015 was only 22.69".

Based on the six years of data summarized in Table 4, during a normal year the excess sewage flow over the base flow, which is pumped to the ponds on an annual basis, is estimated to account for an additional 1,000,000 gallons. During a wet year the excess annual flow could constitute approximately 2,000,000 gallons. These excess flows represent the I/I entering the system and it should be emphasized that these I/I amounts are only estimates to be used for planning the operation of the disposal field.

Projected annual wastewater flows – Based on the above analysis Table 5 gives the existing and projected annual wastewater flows for dry and wet years and assuming an occupancy of 1.35 persons per connection and 51.5 gpcd flow rate and no change in the I/I rates.

TABLE 5 – PROJECTED ANNUAL WASTEWATER FLOWS, gallons

	Existing 229 homes	Build-out 300 homes
Dry year		
Domestic wastewater flow	5,809,705	7,612,988
I/I flow	1,000,000	1,000,000
Totals	6,809,705	8,612,988
	Existing 229 homes	**Build-out 300 homes**
Wet year		
Domestic wastewater flow	5,809,705	7,612,988
I/I flow	2,000,000	2,000,000
Totals	7,809,705	9,612,988

WASTEWATER FACILITIES

The Oceana Marin Wastewater Facilities consist of a conventional sewer collection system, two pump stations, pressure force mains, a pond treatment system and a subsurface land disposal field. Many of these facilities were constructed with the initial development and various improvements have been made over the years.

The collecting sewers are located on generally west facing slopes where any spills would drain toward the Pacific Ocean and the beaches below the cliffs. The disposal field is located on a north facing slope which drains toward the Estero de San Antonio which discharges to the Pacific Ocean.

The treatment ponds and disposal field are located on the top of the hill above the development. Estero Mutual Water Company and the Cal Water Service Company maintain potable water facilities nearby, including wells and a storage pond.

REGULATORY ISSUES

The Oceana Marin sewer system is under the jurisdiction of the California Regional Water Quality Control Board North Coast Region. Waste discharge requirements (WDR) have been issued rather than a NPDES Permit. Since the Oceana Marin system discharges treated effluent to the land through an underground disposal field there is no discharge to receiving waters.

The current WDR for the Oceana Marin system are set forth in Order No. 92-57, ID No. 1880173MAR (see Appendix B) and references a project which involved minor changes to the original facilities. This order describes the project location and the treatment and disposal system in use. The Water Quality Control Plan for the North Coast Region adopted April 28, 1988 is referenced as the basis for this order.

The Oceana Marin disposal system is within the watershed of the Estero de San Antonio. The listed beneficial uses of the Estero de San Antonio and its tributaries include municipal and domestic water supply, water contact recreation, fish spawning and shellfish harvesting. These beneficial uses are very restrictive and dictate the discharge requirements set forth in Order No. 92-57.

Sewage from Oceana Marin is treated in an aerated pond and the treated effluent is disposed of through underground leach lines. The disposal field is to be operated so that no water surfaces or runs off. Order No. 92-57 requires that the pond effluent be disinfected after the pond treatment and prior to going to the leach field. Since no effluent surfaces or runs off, disinfection does not seem to serve any purpose. In fact, the residual chlorine may be affecting the micro biology in the soil.

Waste Discharge Requirements Review Procedures – The current WDR is now 23 years old and the Water Quality Control Plan for the North Coast Region now in effect is dated May 2011. This plan includes a policy on the control of water quality with respect to onsite waste treatment and disposal practices, which primarily pertains to individual septic tanks and leach fields but would also apply to the Oceana Marin disposal system, since there are no specific policies regarding large disposal fields.

In order to get an idea of the way the State handles WDRs we contacted Blair Allen of the San Francisco Bay Regional Water Quality Control Board. He explained that the Oceana Marin WDR is very old and that WDRs do not have fixed expiration dates, or a mandated renewal schedule. Internally, the Water Boards have an administrative protocol for periodic review of WDRs, with a 3-tiered schedule of 5, 10 or 15 years between reviews, based on the case's assigned "Threat-to-Water-Quality" rating.

In the past decade actual implementation of WDR reviews has been hampered by limited budget and staff. So in reality the individual Water Boards may be seriously back-logged on their formal review schedule.

Aside from a standard review protocol, the alternate approach is to consider the actual discharges, the discharge facility, infrastructure, natural surroundings, who is operating it, and so forth, and compare that with the WDR. If the WDR does not reflect current water quality requirements or the facility has a history of non-compliance, then it deserves attention. If the WDR is even partially in tune with current requirements, then perhaps the WDR does not have to be reconsidered very often.

Statewide General Waste Discharge Requirements for Sanitary Sewer Systems – On May 2, 2006 the State Water Resources Board adopted Order No. 2006-0003-DWQ which set forth requirements for all publically owned sewer systems greater than one mile in length. These Statewide General Waste Discharge Requirements focused on preventing sanitary sewer overflows (SSOs) to receiving waters and required each agency to develop a Sewer System Management Plan (SSMP).

In December 2013 NMWD adopted an SSMP for the Oceana Marin sewer system. The SSMP set forth management, operation and maintenance goals for the sewer system together with specific measures and procedures for containing any sewage spills. Required spill notification procedures and report forms are also included.

State Water Board Policy for Onsite Wastewater Treatment Systems – State Water Board policy regulates onsite wastewater treatment systems (OWTS). The policy was adopted June 19, 2012 and will be incorporated in the next update of the Water Quality Control Plan for the North Coast Region.

Recommendation – It is recommended that NMWD initiate discussions with the staff of the North Coast RWQCB regarding updating the WDR to conform to any new State policies regarding land disposal facilities applicable to the Oceana Marin system. Oceana Marin has a good record of compliance so the update may not be a high priority. The RWQCB staff should be kept apprised of improvements made to the Oceana Marin wastewater facilities and the issue of disinfection by chlorination prior to final disposal in the effluent disposal field be reviewed.

2015 MASTER PLAN ESTIMATED COSTS

The facility improvements described below are intended to be incorporated into the 20 year Master Plan for Oceana Marin. The cost estimates are planning level estimates based on 2015 construction costs for the San Francisco Bay Area representing an ENR construction cost index of 11,160. The allowance for contingencies and incidentals does not include costs for project design and construction management. The construction costs for future years are escalated on a 5% annual inflation factor to the year of construction.

SEWAGE COLLECTION SYSTEM

The Oceana Marin development is located at Dillon Beach in West Marin County and was developed in the 1960's and 1970's. The publicly owned sewage collection system is about 5 miles long and generally consists of gravity sewer mains, the majority of which are asbestos cement pipe (ACP). Over the years there has been some root intrusion, internal deterioration and pipe failures due to ground movement. Where repairs have been made sections of PVC or ductile iron pipe have been installed. As described below three sewers were rehabilitated in 2012 using cured in place pipe (CIPP) liners.

All sewage is pumped to a wastewater treatment facility consisting of a treatment pond and a storage pond. The treated effluent from these ponds is applied to the land via subsurface disposal. In order not to overload the subsurface disposal field it is important to limit the entrance of extraneous infiltration and inflow (I/I) into the sewer system.

The sewer system also includes sewer laterals which are privately owned. The length of the private laterals is roughly equivalent to the length of the publically owned sewer mains.

The Oceana Marin development is located on very steep terrain and many of the public sewage collection lines are located both in paved roads and in easements below the homes. Some of the slopes where the sewers are in easements range in grade from 20 to 35%, Some manholes can only be accessed by foot. The steeper easement areas are generally grassy and brushy and in some areas there has been some local ground movement. Along the cliff above the ocean the backyards are mostly covered with heavy ice plant. There are no backyard fences and few private property improvements to restrict access.

I/I Reduction – I/I is defined as excess groundwater or rainwater which enters the sewer system. Infiltration is defined as groundwater which enters pipes underground. Inflow is rain water which enters the sewer system through illegal drainage connections. A third component is rainfall induced I/I which is water that can enter the sewers through underground pipe defects during intense rainfall events.

Unlike pressure pipes such as water mains, leaks do not come to the surface to evidence themselves but must be detected through various technologies. As a practical matter it will never be possible to completely eliminate I/I from a gravity sewer system. Rehabilitation projects are never perfect and some leaks will remain or will increase because other nearby leaks have been "bottled up". In other words, expectations of I/I reduction need to be tempered with reality. The greatest I/I reductions will be achieved by assigning the highest priority to repairing or rehabilitating those sewers or manholes which are discovered to have identifiable defects.

I/I can be reduced by rehabilitating the sewers including the private laterals. If it is assumed that sewer mains and laterals are equally leaky and that the public sewer mains represent about half of the pipeline length in the ground then rehabilitation projects that focus on the sewer mains will only address half of the problem. In some cases when the sewer main is

rehabilitated so it is relatively watertight the groundwater will migrate to enter defects in the private laterals.

Many sanitation agencies have spent years and many dollars rehabilitating their sewers with very little to show for it in terms of I/I reduction. Some agencies rehabilitate the private laterals along with sewer main rehabilitation projects or require homeowners to repair their laterals when defects are found. In the San Francisco Bay Area sanitation agencies are adopting ordinances which require homeowners to inspect and test their lateral on sale of the property and rehabilitate it if it is found defective. This "point of sale" lateral inspection requirement results in a lengthy time to reduce I/I from laterals since there are generally not many home sales in any one year.

The main tools for locating leaks in sewers are closed circuit televising (CCTV) and smoke testing. NMWD already has a well-developed program for CCTV of the sewer mains on a regular schedule. The last smoke testing was done in 2014.

Smoke Testing – Smoke testing involves blowing non-toxic smoke into a section of sewer through a manhole while making observations of smoke coming out of the ground indicating a defect or coming out of a drain indicating an illegal drainage connection. The defects are documented and the smoke coming out of the ground is photographed. Where defects or illegal drainage connections are found in private laterals notices are sent to the property owner with a request to repair the defect. This procedure requires notification of homeowners of the smoke test, conducting the smoke testing, documentation of the defects, sending notices to the property owners to repair the defect found, and follow up with smoke testing to make sure the repair has been made and is successful.

Pipe Segment Inventory and CCTV – NMWD cleans and televises one fifth of the sewer pipe segments in Oceana Marin each year. Televising is done with a closed circuit TV (CCTV) camera and the results are summarized in a spreadsheet which is updated every two years. The inventory spreadsheet of 2014 is included as the NMWD OM Master Sewer List, Appendix C. Private laterals have not been inspected.

The Appendix C spreadsheet identifies sewer defects and problems together with recommendations for repairs. The length of the different pipe types in the system, the number of structures and the number of various types of defects found are summarized in Table 6 below.

Joint offset, joint separation, cracks and exposed gasket make up more than a third of the defects found and slightly less than one third of the defects are roots in the pipe joints even though there are very few trees in Oceana Marin. If there were more trees this total would be much higher. Grease and sags constitute about 14% of the defects.

TABLE 6– CCTV INVENTORY OF PUBLIC SEWER MAINS – 2014

PIPE TYPE	Length, feet	Percent
ABS	113	0.4
ACP	16,841	61.8
PVC	4,290	15.8
CIPP	3,257	12.0
Not reported	2,698	10.0
TOTALS	**27,199**	**100.0**
STRUCTURES		
Manholes	103	
Rodholes (Main line cleanouts)	36	
MAJOR DEFECTS FOUND BY CCTV		
Joint offset, joint separation, crack, gasket exposed	47	38.5
Sag in pipe or grease accumulation	17	14.0
Roots in joint	40	32.8
Infiltration/Inflow	7	5.7
Lateral problem at main	9	7.4
Camera can't get through pipe	2	16
TOTALS	**122**	**100.0**

There are some 103 manholes and 36 rodholes in the Oceana Marin sewer system. NMWD regularly inspects and smoke tests these structures and schedules repairs as necessary. NMWD inspection reports for work done on February 28, 2014 and dated 6/1/15 are listed in Appendix D.

Recommendations – It is recommended that reduction of I/I be continued as a long term objective. CCTV and smoke testing are tools to inventory the condition of sewer lines and locate leaks and identify repair locations and sewer rehabilitation projects as described below.

SEWER REHABILITATION

Rehabilitation of sewer mains and manholes will eliminate some of the I/I and should be continued on an on-going basis. The more I/I that can be reduced the less wastewater that needs to be pumped, treated and stored and ultimately discharged to the disposal field. Wet years will produce more wastewater because of the I/I generated in the sewers.

Some defects found in the CCTV are sags or grease accumulation. These types of defects are not necessarily related to I/I but may require more frequent maintenance to keep the sewer from becoming restricted. Sags will accumulate debris and grease and if the sewer

plugs up it could result in an overflow. CIPP lining or pipebursting will take the same alignment of the original sewer so a sewer with a sag must be dug up and a section re-laid to eliminate the defect.

The private sewer laterals will also contribute I/I. Smoke testing described above will be able to locate some of the points of direct inflow. The homeowner will need to be requested to fix the leak. However, since laterals are considered the property of the homeowner it will be difficult to require further lateral rehabilitation. Adopting an ordinance requiring that laterals be tested upon the sale of a home will be a way to test the laterals and get defective ones fixed over the long term.

The following is information on the sewer rehabilitation methods and a list of proposed sewer main rehabilitation projects which should be included in the Long Range Capital Improvement Plan (CIP).

Asbestos Cement Pipe (ACP) – The fact that the majority of the sewers in Oceana Marin are ACP limits the rehabilitation options. ACP was a common sewer and water pipeline material in the 1960's and 1970's. However, in the last several decades there is increasing awareness that asbestos can be a serious public health concern when friable and air borne and its disposal is now regulated by the EPA.

When it is underground and in use ACP is not considered to pose any public health risk because it is non-friable. However, if AC pipe is crushed, pulverized or reduced to a powder it is then considered to be friable and becomes a regulated asbestos containing material (RACM) waste. In 1991 the EPA took the position that "crushing" AC pipe with mechanical equipment would cause the crushed material to become RACM and that pipe crushed and left in place would cause the location to be considered an active waste disposal site. Pipebursting could cause the AC pipe to be categorized as regulated waste. Inactive lines should be kept on the agency's maps and marked as a USA line so contractors don't dig through it and break it up or crush it.

The owner of every site where AC pipe was pipeburst would need to notify the EPA of the owner's intent to become an active asbestos landfill, meet deed restrictions, submit closure requirements and mapping documentation. In addition, future excavation work in the vicinity would require an additional 45 day notification of intent to disturb landfill material. Other Federal, State or local permit conditions may apply.

ACP Sewer Rehabilitation Methods – In order to avoid the regulatory issues described above ACP sewers should be rehabilitated by a method other than pipebursting such as replacement or with some type of lining such as cured-in-place-pipe (CIPP) lining. CIPP involves inserting a resin impregnated liner into an existing sewer. The liner takes the shape of the sewer and the pipe ends up slightly smaller in diameter than the original pipe. The lining thickness can be specified for a fully deteriorated pipeline where the liner must take the full external load. For 6" diameter sewers the CIPP lining is generally about 4.5

mm thick, which will only reduce the inside diameter by 3/8 of an inch. The resin impregnated liner can be cured with either steam or UV light depending on the product manufacturer. Laterals must be reconnected to the CIPP liner, which can become a point where infiltration/inflow can enter. CIPP lining is an appropriate trenchless technology for rehabilitation of ACP sewers because it leaves the ACP in place as the host pipe.

Inverting a CIPP liner in a 6" pipe is difficult because it tends to hang up on slight joint offsets. Consequently, contractors do not like to use CIPP lining on 6" pipe so the cost will be about the same as CIPP lining of an 8" or even 10" pipe.

2012 Sewer Rehabilitation Project – The District has rehabilitated three of the cross country sewers on steep gradients in Oceana Marin using the CIPP lining process totaling 2,850 feet of 6" and 8" pipe. The purpose of the project was to prevent further deterioration, eliminate potential separation at bell and spigot joints, reduce infiltration/inflow and minimize the potential for sewer spills. The three sewers which were lined ran from Kameha Way to Kailua Way, Kona Lane to Kailua Way and Waikiki Lane to Kailua Way. The greatest elevation difference from top to bottom of one of the sewers was 320 feet. The sewer laterals were not rehabilitated but re-connected to the CIPP liner.

Identified Rehabilitation Projects – Based on the CCTV results NMWD routinely undertakes maintenance and repairs as indicated such as cutting roots and digging down and repairing cracks and other isolated defects. Some lines have multiple defects and it is advisable to undertake a capital improvement project to rehabilitate one or more segments of sewers. The following is a list of recommended sewer rehabilitation projects, also shown on Figure 2, together with their estimated costs:

Project S-1 – Pump Station to Kailua Way: MH 1 through MH 3 to MH 10 Kailua Way (477') – The CCTV revealed several sags, infiltration and a separated joint. Part of this line crosses a gully in an above ground pipe. According to the original plans this is 10" diameter ACP except that 40' of ductile iron (DI) pipe was used to span the gully. The plans show a grade of 0.005 which should be adequate. It is unclear why there are sags; either the pipe was improperly laid originally or there has been some ground movement. This line is near the edge of the cliff above the ocean so ground movement is a possibility. If the ground is moving the line may need relocation away from the cliff, which would also probably mean relocating the pump station. A geotechnical investigation would be appropriate to check on the stability of the cliff. This also applies to Project S-2 described below. If the sag is not a major problem and the line is judged to be adequate then it could be CIPP lined. The estimated cost of the CIPP lining of this sewer is given below:

477 LF CIPP lining of 10" ACP	@$75/LF	$35,775
Contingencies and Incidentals (35%)		12,525
TOTAL ESTIMATED CONSTRUCTION COST		$48,300

Project S-2 – Kailua Way Ocean Side: MH 12 thru MH 13, MH 14, MH 15, MH 16, MH 17 to CO 8 (1,125') – This series of sewers runs along the top of the cliff behind the homes on the west side of Kailua Way. The cliff is covered with heavy ice plant so it is difficult to see if there are any cracks or ground movement. The CCTV revealed a number of sags and separated joints in this line. This line is noted as all 6" PVC so it should not be as fragile as ACP. CIPP lining or pipebursting using an HDPE liner would seal up this pipe but unless the sags are dug up and re-laid they will remain. The estimated cost of the CIPP lining of this sewer is given below:

1,125 LF CIPP lining of 6" PVC	@$75/LF	$84,375
Contingencies and Incidentals (35%)		29,625
TOTAL ESTIMATED CONSTRUCTION COST		$114,000

If the cliff becomes unstable and this sewer is threatened it might be necessary to abandon it and require the property owners to install pumps that pump to the existing sewer in Kailua Way. This could involve up to 15 homes. The cost of installing a high end duplex (2 pump) home pumping system can be $25,000. Sometimes the home service is inadequate to add a pump and needs to be upgraded. Even if NMWD pays for the pump installation it can be a difficult process to require home owners to take on the ongoing maintenance and electric cost.

Project S-2A – Kailua Way Segment Replacement: MH 12 to MH 13 and MH 16 to MH 17 (380') – The only pipe segments in Project S-2 with noted sags and joint offsets are between MH 12 to MH 13 and MH 16 to MH 17. These segments could be rehabilitated with a CIPP lining or pipeburst but the sags will remain unless they are dug up and re-laid. The estimated cost of digging up and replacing these two sewers is given below:

380 LF Replace 6" PVC	@$200/LF	$76,000
Contingencies and Incidentals (35%)		26,000
TOTAL ESTIMATED CONSTRUCTION COST		$102,000

Project S-3 – Oceana Drive CIPP Lining: MH 23 to MH 24 (Oceana Drive) thru MH 25, MH 26, to CO 6 (1,005') – This series of sewers are all 6"ACP and the CCTV notes many separated joints and roots with a comment "potential slip line". It is not clear why there are so many roots entering this line unless it was defective or if there has been ground movement. MH 23 is located in an easement behind 320 Oceana Drive and runs uphill to MH 24, which is in Oceana Drive. This series of lines could be rehabilitated with CIPP lining. The distance between MH 26 and CO 6 is almost 450 feet, which is longer than the industry standard of 200 feet and an intermediate manhole should be added. The estimated cost of the CIPP lining of this sewer plus an additional manhole is given below:

1,005 LF CIPP lining of 6" ACP	@$75/LF	$75,375
Manhole	@$5,000	5,000
Subtotal		$80,375
Contingencies and Incidentals (35%)		27,625
TOTAL ESTIMATED CONSTRUCTION COST		$108,000

Project S-4 – Ocean Drive Rear Easement: MH 28 thru MH 29, MH 30, to MH 31 (933') – This is a 6" ACP easement sewer behind homes #360 and #380 Oceana Drive. The CCTV inspection reported sags and joint separations in this line. There was also a note that there appeared to be I/I in this line even though it does not serve many homes. If the line is judged to be adequate then it could be CIPP lined. The estimated cost of the CIPP lining of this sewer is given below:

933 LF CIPP lining of 6" ACP	@$75/LF	$69,975
Contingencies and Incidentals (35%)		24,025
TOTAL ESTIMATED CONSTRUCTION COST		$94,000

PUMP STATIONS

Two sewage pump stations serve Oceana Marin. The smallest pump station on Ocean View Ave, the North Street Lift Station, serves a localized area of old Dillon Beach and the main pump station pumps sewage from Oceana Marin to the ponds at the top of the hill. The pump stations were inspected on April 13, 2015 which included an inspection of the electric equipment by Todd Beecher of Beecher Engineering. The Electrical System Assessment Report by Beecher Engineering is reproduced in Appendix E.

North Street Lift Station – The North Street lift station serves 9 homes in old Dillon Beach along Ocean View Ave. The lift station consists of two ¾ horsepower submersible pumps located inside a manhole at the intersection of Ocean View Ave and North Street. Sewage is pumped through a 2-inch diameter force main one block on North Street to the gravity sewer on Oceana Drive with a vertical rise of about 16 feet. The electric meter and control panel is located in a free standing enclosure facing Oceana Drive next to 21 North Street.

The reserve capacity of the North Street Lift Station is just the volume of the manhole containing the pumps. A 4' diameter manhole has a volume of 94 gallons per foot of depth. Assuming a 3' deep manhole the storage volume is 283 gallons, which is less than the daily discharge volume from two homes. If there is a prolonged power outage NMWD should be prepared to provide a gas driven pump or tanker truck to pump out the lift station manhole.

Oceana Marin Main Pump Station – The Oceana Marin main pump station is located between the cul-de-sacs of Tahiti Way and Lanai Way and pumps sewage from all of the Oceana Marin service area to the treatment ponds on the top of the hill. This is a vertical rise of over 380 feet and requires special high head pumps. The pump station consists of a

below grade concrete structure and a small building housing a standby engine generator set. A flow meter is provided on the discharge force main.

The pump station is located at an elevation of approximately 66 feet and is near a cliff which leads down to the beach. The cliff is a type of sandstone and is eventually erodible, particularly as the sea level rises. At some point it may be necessary to relocate the pump station away from the cliff if it erodes to a point which is threatening the operation of the station. The incoming sewers, particularly from the north, should be monitored for damage from erosion.

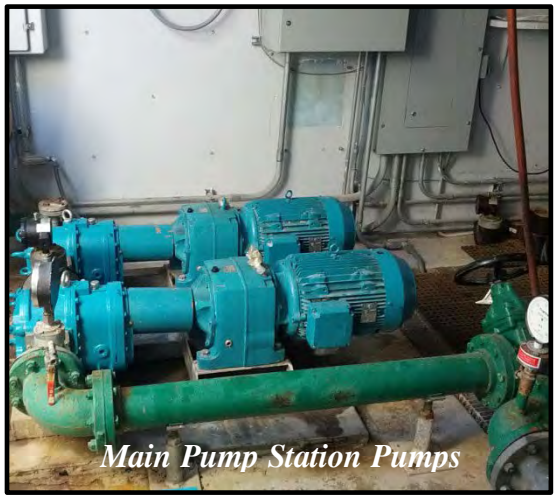
The pump station itself consists of a wet well which is separated from the dry well containing the pumps and electrical work by a wall. There is a grit catchment area in the wet well which is pumped out once a year. Aeration is provided for the sewage in the wet well to keep it fresh and reduce odors.

Oceana Marin Main Pump Station

The dry well part of the pump station contains two sets of rotary lobe pumps; four pumps total. Each set of two pumps are connected in series to be able to overcome the high pumping head. Each pump has a capacity of 100 gallons per minute (gpm) at a discharge pressure of 180 psi. Each set (Set A & B) have two pumps (Pump 1 & 2) the set of pumps (1 & 2) operate together. The lead pump 1 starts at 6' and stops at 2' The two sets of pumps A & B are in a lead lag operation and switch after every pump cycle. If one of the individual pumps (1 or 2) fails, that set automatically shuts off and the other set is called to run.

Doghouse Shed

The flowmeter is an Rosemont magnetic type with a 4" diameter flow tube, located in a pit outside the pump station. There is a single sump pump in the pump pit, which also contains the pump motors and critical electrical panels.



Main Pump Station Condition Assessment
The main pump station is one of the two most critical elements of the Oceana Marin system, the force main being the other critical element. Any overflow from a pump failure will flow directly down to the beach.

Most of the mechanical equipment appears to be well maintained and in good working order. The main concern with the existing pump station is that most of the electrical work and pump motors are all below grade so that if a pipe were to break or a leak were to occur and the sump pump could not handle the water all the major electrical equipment could become inoperable. In some cases a second sump pump has been installed to provide some redundancy. The assessment of the electrical equipment in the main Oceana Marin pump station is summarized in the Beecher Engineering report in Appendix E.

In order to improve the reliability against accidental flooding of the pump pit, which would damage the pump motors as well as any electrical work it is recommended that a second sump pump be installed as a backup to the existing sump pump.

Contingency Planning – In the event that the pumps and/or electrical work are flooded or otherwise fail or force main fails it will be necessary to transport the incoming sewage up the hill to the ponds. The very high static head from the pump station to the ponds precludes the use of conventional trash pumps as emergency pumps. The best method to deal with the sewage will be to hire tanker trucks to pump from the wet well and discharge to the ponds at the top of the hill. This contingency is addressed in the Sewer System Management Plan (SSMP) for Oceana Marin.

If a standby pump were to be used it would have to be a match of the existing pumps such as two dual rotary lobe pumps on a skid. However, the temporary pumps would have to be either connected to the electrical starters which are in the pump pit and difficult to work on or connected to the standby engine generator set with its own separate starter. The pumps are probably not readily available and this arrangement would not be easy to set up in an emergency. Consequently, use of tanker trucks would be the most expedient procedure.

The daily flow at Oceana Marin is estimated to be 15,000 gallons during dry weather. In wet weather the sewage flow could be much higher, even 30,000 gallons. The wet well if fully flooded has a storage capacity of around 12,000 gallons so it could hold almost 80% of a full day's flow during dry weather. Tank truck capacities will range from 3,000 gallons to 5,000 gallons and higher. The large capacity trucks are difficult to maneuver so it is probably not convenient for the Oceana Marin streets.

Accordingly, in dry weather during an emergency the sewage can be held in the flooded wet well and be pumped out with a 3,000 gallon tank truck five times a day until the repair is made. It should not be necessary to set up an emergency pump unless the shutdown is going to be prolonged.

Recommended Pump Station Improvements

The recommended improvements to the main pump station mostly involve improving reliability by upgrading some of the electrical equipment and relocation of the existing electrical equipment out of the pump pit to a new building which is above grade.

Project PS 1 – Miscellaneous Reliability Upgrades – The following reliability upgrades to the pump station are recommended:

Install redundant sump pump	$12,000
Install low pressure alarm on discharge force main	5,000
Estimated miscellaneous improvements	15,000
Subtotal	32,000
Contingencies and Incidentals (35%)	11,000
TOTAL ESTIMATED CONSTRUCTION COST	$43,000

Project PS 2 – Oceana Marin Pump Station PG&E Meter/Main Replacement – The existing PG&E meter and main circuit breaker enclosures have deteriorated beyond repair and require replacement. It is recommended that an outdoor, 316 stainless steel "meter/main" pedestal, rated for outdoor use, be installed within the existing "Doghouse" shed location (e.g., Tesco pedestal). This replacement will not require any modification to the existing PG&E service entrance other than engagement of PG&E to disconnect the existing meter and re-connect the new pedestal meter once it is installed. The estimated installed cost for this replacement is as follows:

Demolition of Existing Metering and Main Breaker Enclosure	$3,000
316 Stainless Steel Pedestal Meter/Main Enclosure	15,000
PG&E Cost:	3,000
Subtotal	21,000
Contingencies and Incidentals (35%)	9,000
TOTAL ESTIMATED CONSTRUCTION COST	$30,000

Project PS 3 – Relocation of Electrical Equipment to Aboveground Block Building – The location of the sewage pump LCP, PLC control panel, bubbler panel and main panelboard are all prone to failure due to below grade structure flooding. During discussions with NMWD, there seemed to be a comfort level that keeping the flowmeter, grinder LCP and blower equipment in the below grade structure would be acceptable since the operation of this equipment is not as critical to overall pump station operability as the level control system and sewage pumping. To mitigate these

vulnerabilities, it is recommended that the LCP/PLC/bubbler panel/main panelboard equipment be relocated to an above grade "add on" room, attached to the existing above grade block building. This new room could essentially become the "Electrical Equipment Room", constructed with block walls and an industrial type personnel door that provides a good seal from the outside elements. Based on preliminary measurements, existing equipment relocation to the interior of the existing standby generator room may not be possible due to National Electrical Code (NEC) clearance requirements. Additionally, the ventilation system within the generator room will expose the electrical panels to outside salt air on a regular basis (i.e., ventilation fan and louver system). Thus, an "add on" room to the existing building is recommended over using existing wall space within the existing standby generator room. Also included as part of this recommendation is the replacement of the existing ventilation louver and addition of flexible propane fuel piping connections for the existing engine generator. All motor control cabinets and hardware, even inside the building, should be type 314 stainless steel. Where possible items should be plastic.

The estimated installed cost for this recommendation is as follows:

Construct three sided block addition to engine generator building	$50,000
Relocate ATS from "Doghouse" to Electrical Room	25,000
New small panelboard to replace panelboard in "Doghouse"	5,000
Relocate Pump LCP's (Quantity 2)	15,000
Relocate PLC Control Panel	10,000
Relocate Bubbler Panel	10,000
Relocate Main Panelboard	15,000
Miscellaneous Electrical Costs	10,000
Subtotal	140,000
Contingencies and Incidentals (35%)	50,000
TOTAL ESTIMATED CONSTRUCTION COST	$190,000

FORCE MAIN

The force main from the main pump station to the ponds is 6" diameter epoxy lined ACP approximately 3,890 feet long. According to the plans the force main has two different pressure classes, Class 150 and Class 200 (rated at 150 and 200 psi respectively). The 380 foot elevation difference from the pump station to the ponds means that at the pump station end the static head is 164 psi, which together with friction losses when the pumps are pumping could approach the 200 psi rating of the pipe.

Although this force main has provided good service it is now some 50 years old. Also, since it is only a single pipe there is no redundancy in case something happens to the existing force main. Although isolated repairs can be made with full circle clamps any leakage will flow directly through the storm drainage system to the beach below. In order to provide redundancy it is recommended that a second force main be installed.

The route of the existing force main includes two easements as a short cut bypassing the large curve in Oceana Drive. However, this easement would be too crowded to accommodate a second new force main. The estimated cost of a new force main from the Oceana Marin pump station to the ponds, shown on Figure 2, assuming conventional trench restoration is given below.

Project FM-1 – Parallel Force Main (Entire force main)

4,610 LF 6" Force Main	@$200/LF	$922,000
Est. Connection at the pump station		5,000
Est. Connection at the ponds		3,000
Subtotal		$930,000
Contingencies and Incidentals (35%)		325,000
TOTAL ESTIMATED CONSTRUCTION COST		$1,255,000

It would be possible to stage the construction of this force main by connecting back to the existing force main in a couple of locations at the end of each phase. Starting at the pump station the force main could be constructed in three phases as follows:

Project FM-1A – Pump Station to 360 Oceana Drive

1,980 LF 6" Force Main	@$200/LF	$396.000
Est. Connection at the pump station		5,000
Est. Intermediate connection		5,000
Subtotal		406,000
Contingencies and Incidentals (35%)		142,000
TOTAL ESTIMATED CONSTRUCTION COST		$548,000

Project FM-1B – 360 Oceana Drive to Ocean View Blvd.

1,390 LF 6" Force Main	@$200/LF	$278,000
Est. Intermediate connection		5,000
Subtotal		283,000
Contingencies and Incidentals (35%)		99,000
TOTAL ESTIMATED CONSTRUCTION COST		$382,000

Project FM-1C – Ocean View Blvd to Treatment Ponds

1,240 LF 6" Force Main	@$200/LF	$248,000
Est. Connection at the ponds		3,000
Subtotal		251,000
Contingencies and Incidentals (35%)		89,000
TOTAL ESTIMATED CONSTRUCTION COST		$340,000

Recommendations – It is recommended that Project FM-1A be assigned a high priority. This initial segment will be located in streets and will provide a redundant force main to the existing segment which is located partially in easements and thus is more vulnerable to external damage. Furthermore, this segment has the highest internal pressure and the new replacement pipe will provide greater reliability.

The existing force mains paralleling the remaining two projects are subject to less internal pressure and are located in streets where they are less subject to external damage. Thus, Projects FM-1B and FM-1C should be assigned a lower priority.

POND TREATMENT AND STORAGE

The Oceana Marin treatment system consists of two ponds. The west pond is aerated and provides the treatment of the raw wastewater. The east pond is the storage pond and receives effluent from the treatment pond and provides storage of the treated wastewater prior to discharge to the effluent disposal field. Treated effluent is discharged from the north end of the storage pond and flows by gravity through a dosing siphon to disposal field leach lines.

A small chlorinator is used to disinfect the pond effluent prior to flowing to the disposal field. Since the effluent is disposed of underground, it is uncertain whether or not the chlorination has any adverse or beneficial effect on the biology in the disposal field. However, chlorination of effluent going to a leach filed is not a normal practice. The need to continue to disinfect should be brought up in discussions with the Regional Water Quality Control Board about renewing the waste discharge requirements.

The two ponds are constructed with dirt berms and are not lined. A gravel interceptor trench was installed for the length of the base of the southern berms of both ponds to intercept pond seepage and any surrounding groundwater. The intercepted water flows to a sump where a sump pump recycles it back to the east storage pond. Occasional gopher holes in the berms can be a problem that is monitored.

The date on the original plans for the ponds is 1972, which indicates they have been in service for over 40 years. There is no record of any cleaning of the ponds, so there will be some accumulation of undigestable sludge and algae.

Original Pond Design Characteristics – The original design characteristics of the treatment pond and storage pond from Table 1 of the 2005 Bracewell report are listed in Table 7 below.

TABLE 7 - OCEANA MARIN ORIGINAL POND DESIGN CHARACTERISTICS

Original Design	Treatment Pond (West Pond)	Storage Pond (East Pond)
Bottom width, feet	120	120
Bottom length, feet	240	240
Bottom area, sq. ft.	28,800	28,800
Side slopes	3:1	3:1
Surface area at 10' depth	54,000	54,000
Storage volume @ minimum (4') depth, gallons	997,000	997,000
Storage volume @ maximum (10') depth*, gallons	3,052,000	3,052,000
Aerators (3 hp each), number	2	0
Aeration capacity @ 2 lbs O_2/hp-hr	288	0

*Design freeboard when pond full = 2'

Pond Operation – The pond operation strategy involves using the disposal field during dry periods to lower the pond levels and maximize the available storage prior to rainy periods so the disposal field can rest and not become waterlogged.

If work has to be done on one of the ponds it should be possible to take it out of service by diverting the incoming flow to the other pond. Ideally this diversion should be done during dry weather when the incoming flows are low. This diversion would require installation of some temporary piping.

Treatment Pond Loading – Treatment ponds for domestic wastewater are generally designed to provide 30 day detention and a conservative organic loading of 35# to 50# BOD/acre/day. The pond detention times are much longer than 30 days as given in Table 8 below.

TABLE 8 - TREATMENT POND DETENTION TIMES VERSUS ANNUAL FLOWS

	Existing 229 homes	Build-out 300 homes
Dry year wastewater flow, gallons	6,475,000	8,074,000
Detention time, pond full (3,052,000 gal)	172 days	138 days
Detention time, pond half full	86 days	69 days
Wet year wastewater flow, gallons	7,475,000	9,074,000
Detention time, pond full (3,052,000 gal)	149 days	123 days
Detention time pond half full	75 days	62 days

The organic loading at full buildout of 300 homes with an assumed 44% occupancy and 2.5 persons per home and 0.17# BOD5/person calculates to be 56# BOD5/day. This represents a BOD5 loading of 45#/day when the pond is full, which is within the general design guidelines for a treatment pond. The aeration and excessively long detention times serve to further reduce the organic loading. The storage pond provides additional detention time which further reduces the organic loading with natural processes. This second pond provides polishing of the effluent prior to injection into the disposal field.

As a conclusion the treatment and storage ponds are well within design guidelines for the loading they receive now and at full buildout.

Berm Erosion – Some of the pond berms are eroding, probably from wind generated waves. The wind is primarily from the northwest which means that the southern and east berms are most eroded. The eroded soil has moved into the ponds and reduced their capacity.

If the ponds remain unlined at least the south and east berms should be stabilized. There are different ways to stabilize the banks. Stabilization can be "natural stabilization" by planting vegetation such as willows and cattails. However, this can make the ponds more difficult to maintain and control. An engineering bank stabilization approach can involve placing rip rap over a geofabric or geofabric placed over berms restored with compacted soil.

For budgeting purposes the cost of placing rip rap over stabilizing fabric on the upper 10 feet of all four berms around one pond, totaling 26,000 square feet, is given below.

P-1A & 1B - Pond Berm Repair using Rip Rap over Stabilization Fabric

Mobilization, bank preparation		$12,000
8 rolls Stabilization geofabric	@$500/roll	4,000
1,600 tons rock rip rap in place	@$125/ton	200,000
Labor		20,000
Miscellaneous		12,000
Subtotal		248,000
Contingencies and Incidentals (35%)		87,000
TOTAL ESTIMATED CONSTRUCION COST		$335,000

This cost is for stabilizing all four berms on one pond or stabilizing two berms on both ponds. Stabilization of all four berms on both ponds is estimated to cost $670,000.

An alternate, less expensive strategy which has been used on other ponds involves placing fabric and rip rap on the worst eroded sections. This can be done in sections over the years as the budget allows and would keep the protected berms from eroding to the point that threatens its structural integrity.

Pond Dredging – NMWD staff took soundings of the two ponds on May 20, 2015 and found that the ponds have silted in approximately a third of their depth. . This accumulated material will consist of the soil eroded from the eroded pond berms and accumulated sludge and dead algae. The pond soundings are shown in Appendix F and the depth and estimated volume of the sediment is given in Table 9 below.

TABLE 9 – ESTIMATED POND SEDIMENT DEPTH AND VOLUME

	Treatment pond	Storage pond
Average depth of sediment/sludge, feet	3.4	2.4
Est. volume of sediment/sludge, cubic yards	4,000	2,800

The minimum design water depth for the two ponds is 4' so the sediment/sludge has taken up most of this reserve. Although it appears that the ponds have lost storage volume the sediment eroded from the berms has settled in the pond bottom and the berm slopes have been reconfigured making the storage volume essentially the same when the pond is full. The storage volume is gone from the lower 2 to 3 feet of the ponds because of the sediment but there will be more storage volume available at the higher levels because of the eroded upper berms. However, to make use of the upper storage volume means that the water level in the ponds must be kept higher which will make the berms more vulnerable to further wind erosion.

The treatment pond appears to have about 1,200 cubic yards more of sediment/sludge than the storage pond, which could be caused by more erosion of the berms and/or an accumulation of undigested sludge and algae over its 40+ years of operation.

We contacted several companies which do pond dredging. Dredging can be done in several ways. One company would use a floating suction pump so the pond would need enough water in it to float the pump. The sludge slurry would either be pumped to another pond to eventually dry out or it can be mechanically dewatered so it can be trucked to a disposal site. Mechanical dewatering can involve a belt filter press using polymers or a large filter bag. If the dewatered sludge is to be trucked away it should be as dry as possible to minimize the trips and disposal costs. Mechanical dewatering may dewater the sludge to 25% solids, which means that 75% remains as water. Hauling to the Redwood Landfill together with their tipping fees would make this alternative even more expensive.

A local contractor, Poncia Fertilizer, cleans out small ponds for dairies and wineries and does work for the City of Santa Rosa. Without looking at the job site Andy Poncia estimated that if the ponds are dewatered as well as they can be he could use a long reach excavator and mud cat to load the sediment/sludge material to two on-site trucks to take it to a nearby disposal area, possibly on NMWD property adjacent to the existing ponds. His estimate for this work was $35,000 per pond. If the sludge/sediment had to be hauled to Redwood Landfill he estimates the trucking cost would be $125,000 per pond plus the tipping fees. He thought that the sediment/sludge from the pond would be too wet to be used to restore the eroded berms.

At Oceana Marin it may take several months to dry out the ponds so the sediment has a sufficiently low moisture level to allow it to be scooped up and trucked away without a lot of dripping and extra tipping fees. If the pond is going to be lined as described below it will need to be dried out so it can be graded smooth. During the drying period the storage pond will need to be used for treatment and it will be important that the effluent does not contain too much suspended material that might clog the leach lines in the disposal field.

Since this is a sewage pond, disposal of the sludge will need to conform to the requirements of EPA Part 503 Biosolids Rule (EPA/R-92/013). This rule is mainly concerned with heavy metals, stabilization of pathogens and attraction of vectors. Tests will need to be made for heavy metals, but since the sludge is from a residential area there should not be a problem. Stabilization of pathogens can be achieved by holding the sludge for a matter of time and vector attraction relates to how the sludge is handled.

In West Marin there is a lot of agricultural land and a land owner might want to accept the dredged material from the ponds. This will require permitting. If the sludge must be hauled to an appropriately permitted landfill it will probably have to go to the Redwood Landfill north of Novato. This is at least a 2 hour round trip. Per an email dated 6/29/15 from Waste Management the disposal cost pricing for this project will be $21.00 per ton with taxes and fees included if the soil qualifies for daily cover and $47.00 per ton with taxes and fees included if it is approved for disposal. If the sludge is not dewatered very well the total tipping fee will be high because the tonnage will include the water.

In order to dispose of the sediment/sludge on-site it will be necessary to excavate another pond nearby or find a local farmer who could accept the material. Both of these will require appropriate permits. Even disposal at the Redwood landfill will require testing of the material to make sure it does not contain heavy metals or other hazardous materials.

An onsite sediment holding pond could be constructed on NMWD property north of the existing ponds. The volume of this new pond will depend on the method of dewatering and whether or not the sediment will have a high water content. For the purpose of the cost estimate it is assumed that the holding pond will have a volume of 8,000 cubic yards which will hold an estimated 4,000 cubic yards of sediment from the treatment pond initially and then an additional 2,800 cubic yards from the storage pond. After the passage of time this material could be removed and spread out on adjacent land to make room for the next pond dredging if necessary.

The 8,000 cubic yard sediment holding pond would have the dimensions of approximately 140' x 200' x 8' deep with 1:1 or 1.5:5 sloping banks. The top 12" of soil which contains the organic material would be scarified, stripped off and placed on adjacent land. The lower material would be reserved in a separate pile to be used to reconstruct the slope of the pond berms.

As a caution the original 1972 plans for the pond construction show a "3" PVC and cables" running through the southwest corner of the west pond (treatment pond). The plans show a shallower excavation over these utilities to provide 30" of cover. According to the assessor's maps these utilities may run between two wells owned by the Estero Mutual Water Co. Any excavation work to clean out this pond will need to be careful not to damage these utilities or they should be relocated out from under the pond. In the estimate below it is assumed that the 3" PVC and cables will be relocated out of NMWD property, which may require a new easement on the adjacent private property.

Alternative A – Pond dredging using a holding pond for onsite disposal of the sediment

Project P-2A – Dredging of Treatment Pond (first pond)

Mobilization			$15,000
Relocation of 3" PVC and cables	630 LF	@ $80/LF	50,400
Construct sediment holding pond	8,000 cy	@ $6/cy	48,000
Dredge pond			35,000
Wooden Pier for support of instrumentation			15,000
Subtotal			163,400
Permitting cost			50,000
Contingencies and Incidentals (35%)			57,600
TOTAL ESTIMATED CONSTRUCTION COST			$271,000

Project P-2B - Dredging of Storage Pond (second pond)

Mobilization	$5,000
Dredge pond	35,000
Wooden piers for access to the valve and instrument support	20,000
Subtotal	60,000
Contingencies and Incidentals (35%)	21,000
TOTAL ESTIMATED CONSTRUCTION COST	$81,000

The total estimated cost for dredging the two ponds including construction of a nearby holding pond for the sediment is $352,000.

As an alternative project the sediment/sludge could be hauled to the Redwood landfill for disposal so that the sediment holding pond would not need to be constructed. However, there will be trucking costs and tipping fees. The estimated cost for pond dredging, hauling and disposal at the Redwood Landfill, assuming an average tipping fee of $47/ton, is given below.

Alternative B – Pond dredging with sediment disposal at the Redwood Landfill

Relocation of 3" PVC and cables	630 LF	@ $80/LF	$50,400
Dredge and haul sludge from the treatment pond (est. 4,000 cy)			125,000
Dredge and haul sludge from the storage pond (est. 2,800 cy)			125,000
Redwood landfill tipping fees	11,000 tons	@ $47/ton	517,000
Subtotal			817,400
Contingencies and Incidentals (35%)			286,600
TOTAL ESTIMATED CONSTRUCTION COST			$1,104,000

The hauling of the sediment and tipping fees at the Redwood Landfill make this alternative very expensive. Furthermore, if the ponds are dredged and the sludge/sediment is hauled to the Redwood landfill there will be no stockpile of excavated material from the holding pond excavation to be used to restore the pond berms. This soil would need to come from a separate excavation unless new soil is hauled in, which would be an added cost.

Pond Lining – The existing treatment and storage ponds are unlined. Ponds can be lined with a plastic material which can extend up the slope of the surrounding berms. A liner will prevent any exfiltration of water from the ponds and also prevent erosion of the berms.

In order to restore the berm slope so that the pond liner can be installed the pond will need to be dewatered and the sludge and sediment will need to be removed as described above. Before installing the liner the pond will need to be dry with smooth sides and no angular rock that may puncture the liner. A geofabric under the liner will provide some protection against rocks.

The various types of liners available include reinforced polypropylene, hypalon, low density or high density polyethylene and PVC. Reinforced polypropylene and hypalon have the best resistance to UV degradation. Reinforced polypropylene is seamed together with a hot wedge welder. The estimated cost of installing a pond liner in one of the ponds, assuming dimensions of the top of the berms are 300' x 180' is given below.

Pond Lining (300' x 180') – one pond

Mobilization			$10,000
Bank restoration and fine grading	3,000 cy	@ $15/cy	45,000
Geofabric			15,000
Polypropylene liner			42,000
Installation			18,000
Miscellaneous			10,000
Subtotal			140,000
Contingencies and Incidentals (35%)			50,000
TOTAL ESTIMATED CONSTRUCTION COST			$190,000

The estimated cost for lining both ponds will be around $380,000. As a practical matter, in order to dry out the pond bottom and keep one pond in service during the lining process, probably only one pond could be lined in a season. This work should be done during the summer months when there is no I/I. (Reference: Carson Manufacturing Co., P.O. Box 549, Cotati, CA 94931, 1-800-423-2380, Curtis 707-795-3141; (www.carsonliners.com).

It should be noted that a percentage of the sediment in the ponds probably comes from erosion of the pond berms. A liner extending onto the berms will prevent berm erosion but sludge will still accumulate. As determined above it took 40 years for the unlined ponds to fill in by 23% with a combination of sediment from the berms and sludge. If the ponds are lined the rate of deposition of sludge only should be much lower.

A pond liner should last 30 – 40 years. The unlined ponds have gone 40 years without major repair work except for the erosion of the berms and accumulation of sediment/sludge, which is now taking up space. A major problem with a pond liner is that it makes cleaning the ponds more difficult, although there should be less sediment because the berms would not be eroding. According to Andy Poncia the usual pond cleaning methods he uses tend to tear up plastic liners, which would need to be restored after cleaning. It may be necessary to use a floating suction dredge for the cleaning of a lined pond.

Electrical Equipment – The electrical equipment at the ponds is likely 30+ years old and is obsolete. Despite this obsolescence the equipment has been well maintained. Additionally, the motor controller panel construction is quite simple and future retrofitting of failed components within the existing controller compartments can likely be performed without too much difficulty. NMWD personnel reported that reliability of the electrical equipment at this site has been very good and no operational issues currently exist.

The PLC panel at this site is essentially new and in very good condition. NMWD personnel stated that this equipment is working well and no operational issues exist at this time.

Project P-3 – Electrical Equipment Replacement at Treatment Ponds – Due to the age of the motor controller equipment at the Treatment Ponds, it is recommended that NMWD plan for upgrading the existing electrical equipment with new components within the next 5-year time frame. The estimated cost of motor control equipment replacement at the treatment ponds is given below:

Electrical equipment replacement	$50,000
Contingencies and Incidentals (35%)	18,000
TOTAL ESTIMATED CONSTRUCTION COST	$68,000

Recommendations – It is recommended that the two ponds be dredged out and lined with a plastic liner. The most economical dredging method requires on site storage of the dredged material in an excavated holding pond. The excavated material from the holding pond will provide the necessary dirt for rebuilding the berm slopes prior to lining. Hauling the dredged out sludge to the Redwood Landfill would be very expensive.

A more expedient alternative would be to repair the eroded pond berms with rock rip-rap placed over geofabric. This could be done on an as needed basis. However it would not address the accumulated sediment and loss of storage volume in the ponds. Eventually the ponds should be dredged out and possibly lined.

The electrical equipment at the ponds is old and becoming obsolete so at some point it will need to be replaced.

EFFLUENT DISPOSAL SYSTEM

The Oceana Marin effluent disposal system consists of a pressure distribution/shallow gravel trench system. This type of system is suited for areas with high groundwater, steep slopes and low infiltration rates. Treated effluent is spread out over a wide area to enhance the infiltration and minimize the seepage to the surface. An automatic dosing siphon provides flow to the pressure distribution pipe network.

Dosing Siphon Tank

The disposal system was inspected on April 16, 2015 by Troy Pearce of AYS Engineering Group, Inc. The AYS report is included in Appendix G.

Automatic Disposal Field Valves

Disposal Field Description – The disposal field consists of 7 shallow pressure distribution leach lines located in moderately sloping terrain with shallow soils and perched seasonal ground water due to the underlying less permeable clay soils. The disposal trenches are fed by a dosing siphon with an average dose of approximately 2,200 gallons at a rate of around 25 gallons per minute. Effluent is conveyed to each of the 7 operating drain lines over 24 hours and is controlled via an irrigation control panel and automated valves. The individual drain lines average 530 feet long in trenches 1.5 feet wide with 24 inches of gravel and 8 inches of soil cover.

According to AYS the soils found in the area of the disposal field are not ideal for use as a drain field. However, with proper management this system could last for a very long time, although disposal fields can start to develop issues over time that will need to be addressed.

Disposal Field

The AYS report includes two tables of piezometer readings, one for 2003-04 and the other for 2014-15. The winter of 2003-04 was relatively wet and the winter of 2014-15 was a drought year. For 2003-04 the piezometer readings showed a relatively saturated field, whereas in 2014-15 the field was not saturated. With only two years of data there is insufficient information to make an evaluation of the capacity of the disposal field to dispose of effluent. AYS recommends that additional monitoring data be collected at more frequent intervals over a year so an evaluation can be made. It is proposed that most of this work be done by NMWD staff. The estimated cost for AYS to oversee this work is around $3,000.

Recommendations – Based on the AYS Report the following are recommendations for improvements to the disposal field and its operation.

1. Undertake additional monitoring of the piezometer levels and rainfall data which will provide insight to the operation of the system and provide data to establish the disposal capacity of the existing disposal system. The estimated cost for AYS to oversee this effort is $3,000.

2. Continue to maintain the fencing to keep the cows out of the disposal field area so the trenches don't get compacted.

3. Have a geotechnical engineer review the slide downslope of Line #1 to determine if the slide may have been caused by the use of the area above as a drain field.

4. Make the minor corrective work to the boxes that have been damaged by the cattle.

5. Undertake a trial to reduce the time each line is in service from 24 hours to 12 hours while increasing the monitoring to twice weekly. During this time take one of the lines out of service for a month to allow it to rest while monitoring the remaining field to see how the increase in effective loading is being tolerated.

6. Begin to prepare a system upgrade/failure plan for the disposal field in which new lines would be installed between the existing lines, which have wide spacing. The spreadsheet monitoring of the piezometers will be very useful in developing this plan. The cost for this project would have to be determined at a later date.

Although the existing effluent disposal system has functioned well there are some minor corrective actions which should be undertaken. It is recommended that the frequency of monitoring of the piezometers be increased to provide insight to the operation of the system and provide data to establish the disposal capacity of the existing disposal system.

It is also recommended that NMWD begin preparation of a system upgrade/failure plan for the disposal field in which new lines would be installed between the existing lines, which have wide spacing. The cost of this upgrade plan is yet to be determined.

RECOMMENDED ADDITIONAL STUDIES

In addition to the capital improvement projects described above it is recommended that NMWD undertake the following additional studies:

Project ST-1 – Electrical Power System Arc Flash Hazard Study – Arc flash hazard warning labels are required by NFPA 70E for power distribution equipment to enhance maintenance personnel safety. Modeling the existing power distribution systems at the Oceana Marin Pump Station and Treatment Pond sites will involve comprehensive field investigation to determine existing power system equipment ratings, connections, conductor sizes and conductor lengths. Once the systems are modeled within the software, short circuit analyses are performed to determine if the existing, installed equipment is adequately rated to withstand a fault condition at any point in the power system. After the short circuit analyses are completed, protective device coordination studies and arc flash hazard studies will be performed simultaneously to optimize system protection while minimizing arc flash hazard at all points in each system. Arc flash hazard warning labels are a code requirement. It is recommended that the District initiate the development of this labeling immediately to warn maintenance personnel about potentially dangerous locations within each facility with respect to electrical equipment arc flash hazard. The estimated cost for the Project ST-1 electrical power system studies is $25,000.

Project ST-2 – Site Reconnaissance of Geologic Hazard Along Ocean Bluff and Slide Below Effluent Disposal Field – It is recommended that NMWD undertake a preliminary study of the geologic hazard along the ocean bluff in the vicinity of the backyard sewer along Kailua Way and the main pump station. This would be a preliminary evaluation to determine if there is need for further investigations. Scott Stephens of Miller Pacific Engineering Group in Novato provided a budget for a geologic and geotechnical evaluation pand opinions on a conceptual level for these two features of $3,300.

Project ST-3 – Oversee Monitoring of the Disposal Field Piezometers – Oversee additional piezometer monitoring by AYS for an estimated cost of $3,000.

LONG RANGE IMPROVEMENT MASTER PLAN

The recommended Long Range Improvement Master Plan for the Oceana Marin wastewater system is shown in Figure 2 and includes an estimated $3.12 million dollars of improvements to the following facilities:

- Sewer collection system improvements primarily to reduce I/I
- Improvements to the main Oceana Marin pump station to improve its reliability and redundancy

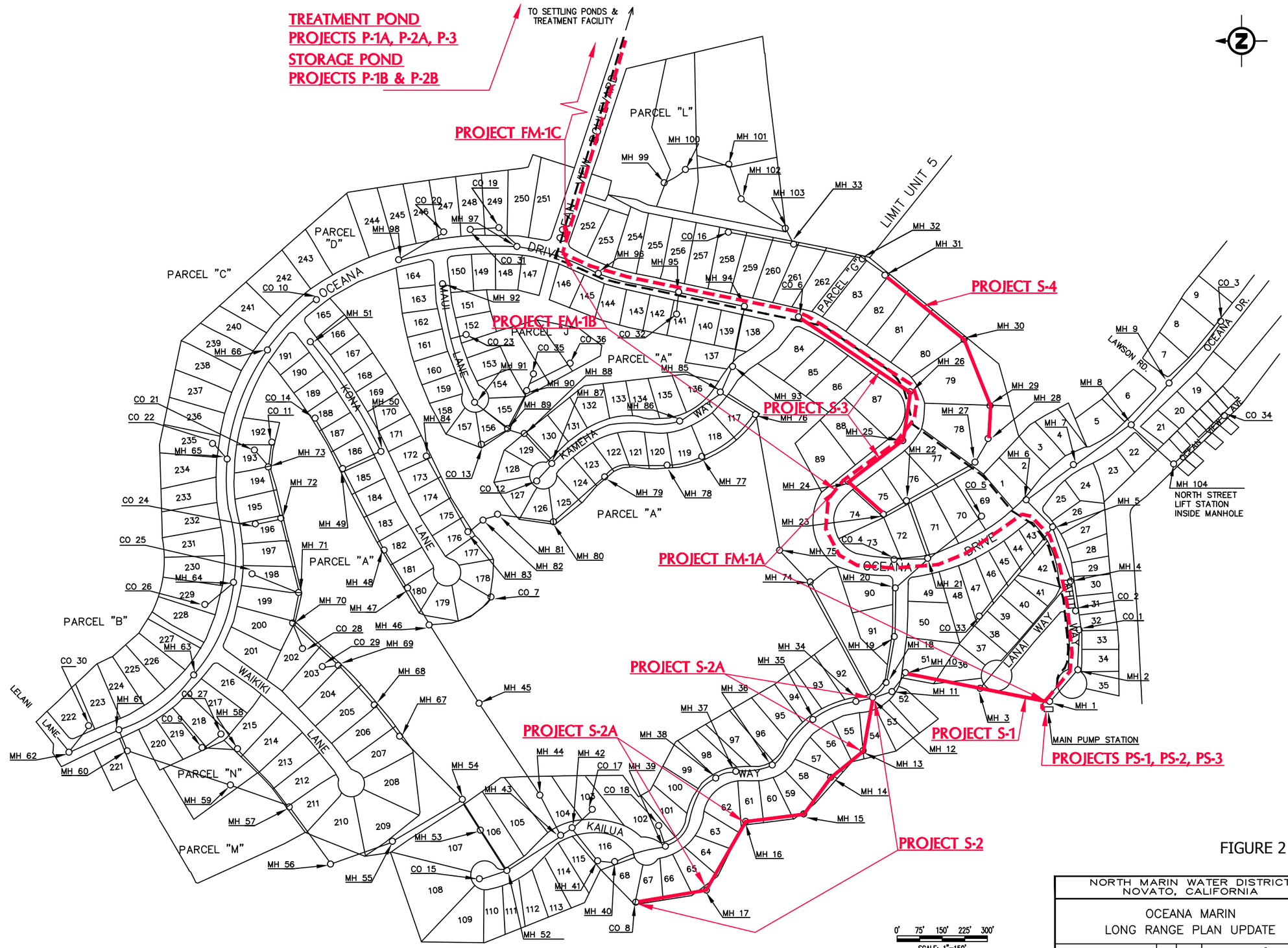


FIGURE 2

NORTH MARIN WATER DISTRICT NOVATO, CALIFORNIA			
OCEANA MARIN LONG RANGE PLAN UPDATE			
DATE CREATED:	BY:		SCALE: 1" = 150'
REVISION DATE:	BY:		DRAWING NO.
APPROVED DATE:	BY:		

Jan 19, 2016 – 2:04pm L:\District\NMWD\8464 Oceana Marin Long Range Plan\OM Sewer System CCTV Map.dwg User: PRISCILLA

- Force main improvements consisting of construction of a second force main to provide redundancy

- Dredging and possibly lining of the treatment and storage ponds to eliminate berm erosion

- Electrical power system arc flash hazard study

- Study of the effluent disposal system to assess its ability to dispose of the treated effluent

- Site reconnaissance of geologic hazard of ocean bluff and slide below effluent disposal field

- Additional studies of different aspects of the wastewater system

Priorities have been assigned to these projects in the following order:

- Improve unit process functioning

- Improve critical reliability and redundancy

- Reduce I/I from the sewer system

The list of improvement projects and their assigned priorities is given in Table 10 below.

It is recommended that NMWD begin to budget for these improvements to the Oceana Marin sewer system.

TABLE 10 – CAPITAL IMPROVEMENT PROGRAM PRIORITIES AND ESTIMATED PROJECT COSTS

Project Desig.	Description	Priority		
		High	Medium	Low
SEWER IMPROVEMENT PROJECTS				
S-1	Pump Station to Kailua Way: MH through MH 3 to MH 10 Kailua Way (477 feet)		$48,300	
S-2	Kailua Way Ocean Side: MH 12 thru MH 13, MH 14, MH 15, MH 16, MH 17 to CO 8 (1125')		$114,000	
S-2A Optional	Kailua Way Segment Replacement: MH 12 to MH 13 and MH 16 to MH 17 (380')			$102,000

Project Desig.	Description	Priority		
		High	Medium	Low
S-3	Ocean Drive CIPP Lining: MH 23 to MH 24 (Oceana Drive) thru MH 25, MH 26, to CO 6 (1,005')		$108,000	
S-4	Ocean Drive Rear Easement: MH 28 thru MH 29, MH 30, to MH 31 (933')		$94,000	
PUMP STATION IMPROVEMENT PROJECTS				
PS-1	Miscellaneous Reliability Upgrades	$43,000		
PS-2	Oceana Marin Pump Station PG&E Meter/Main Replacement	$30,000		
PS-3	Relocation of Electrical Equipment to Aboveground Block Building	$190,000		
FORCE MAIN IMPROVEMENT PROJECTS				
FM-1A	Pump Station to 360 Oceana Drive	$548,000		
FM-1B	360 Oceana Drive to Ocean View Blvd.		$382,000	
FM-1C	Ocean View Blvd to Treatment Ponds			$340,000
POND IMPROVEMENTS				
P-1A	Treatment Pond Berm Repair with Riprap	$335,000		
P-1B	Storage Pond Berm Repair with Riprap		$335,000	
P-2A	Dredging of Treatment Pond (first pond)	$271,000		
P-2B	Dredging of Storage Pond (second pond)		$81,000	
P-3	Electrical Equipment Replacement at Treatment Ponds		$68,000	
DISPOSAL FIELD IMPROVEMENTS		TBD		
STUDIES				
ST-1	Electrical Power System Arc Flash Hazard Studies	$25,000		
ST-2	Site Reconnaissance of Geologic Hazard along Ocean Bluff and Slide Below Effluent Disposal Field	$3,300		
ST-3	Disposal field piezometer Study	$3,000		
	TOTAL ESTIMATED COSTS	**$1,448,300**	**$1,230,300**	**$442,000**

Appendix H

Element 9 (Monitoring, Measurement, Modifications) Placeholder for Future Supporting Documents

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Appendix I

Element 10 (SSMP Audits) Supporting Documents

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Note: *In accordance with SWRCB Order No. 2022-0103-DWQ, the District will document changes made to the SSMP during the period between required Plan updates in this Change Log.*

North Marin Water District – Oceana Marin Sewer
SSMP Change Log

Date	SSMP Element	Description of Change/Revision Made	Change Authorized by

North Marin Water District – Oceana Marin
Sewer System Management Plan
2026 SSMP Internal Audit

3-Year Period Ending August 2, 2025
Due February 2, 2026

This 2026 SSMP Internal Audit was prepared for submittal into the online CIWQS Sanitary Sewer System Database per the requirements in section 3.10 of Attachment E1 of State Water Resources Control Board Order WQ 2022-0103-DWQ ("Statewide WDR"). The District's sewer system operators' input has been considered in compiling the audit findings below.

This purpose of this audit is as follows:

- Evaluate the implementation and effectiveness of the District's Sewer System Management Plan in preventing spills;
- Evaluate the District's compliance with the Statewide WDR;
- 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.

This report includes audit findings and recommended corrective actions and a proposed schedule for the District to address the identified deficiencies.

Each of the SSMP Elements and Sub-elements below have been graded using the following sufficiency ranking system. Written descriptions to explain rankings of SC, PC, MC, and/or DNC are added at the bottom of each Element.

- *Complies (C) – complies with all WDR objectives*
- *Substantially Complies (SC) – complies mostly with all WDR objectives*
- *Partially Complies (PC) – complies with basic WDR objectives*
- *Marginal Compliance (MC) – complies minimally with basic objectives of the WDR*
- *Does Not Comply (DNC) – does not comply with WDR objectives*

Element I – Sewer System Management Plan Goal and Introduction	Rating
A. Does the Element include a narrative introduction section that discusses (1) regulatory context, (2) SSMP update schedule, (3) sewer system asset overview? a. General description of program, implementation, and updates b. Schedule for SSMP updates and audits c. Asset overview including location, service area boundary and reference to sewer system maps, population and community served, system size, structures diverting stormwater to the sewer system, data management systems, sewer system ownership and operation responsibilities between the District 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).	SC
B. Are the District's goals consistent with the following Statewide WDR goals: a. Properly manage, operate, and maintain all parts of the District's sanitary sewer system(s); b. Reduce and prevent spills; and c. Contain and mitigate spills that do occur.	C

Discussion:

A. General: The District's SSMP begins with an Executive Summary and Element 1 – Goals. Per the Statewide WDR, the plan should begin with Element 1 – Sewer System Management Plan Goals and Introduction. In the 2026 SSMP update, these sections will be combined and expanded into a single element.

- The SSMP references the prior approved Statewide WDR and will be updated to reference the recently adopted Statewide WDR (General Order 2022-0103-DWQ).
- The updated element will include an SSMP update schedule.
- The asset overview will be updated to include reference to structures diverting stormwater, data management systems, ownership and operational responsibilities for sewer laterals, and estimated number/percent of service connections. Also, the number of customers will be updated to 235.
- The SSMP requires a District sewer map.

Element II – Organization	Rating
A. Are District LRO and data submitters stated in the SSMP currently identified in CIWQS? Have they been properly designated by the District?	SC
B. Does the SSMP include names, contact information (titles, telephone numbers, email) for management, administrative and maintenance positions responsible for specific Elements of the SSMP?	PC
C. Are the organizational lines of authority current and up-to-date on the District Organization chart?	SC
D. Is the chain of communications for spill reporting complete from complaint through final approval of all spill event reporting?	C

Discussion: Element 2 supports the District's ability to implement the SSMP in support of spill prevention.

A. Drew McIntyre is listed as an LRO and has retired. This will be corrected. The other LROs and data submitters are current.
B. The Maintenance Supervisor is not in charge of cleaning and inspection – this will be corrected in the 2026 SSMP update. The contact information for the SSMP and Spill Response is out of date and includes more personnel. Appendix A will be updated to include email addresses and reflect the most current staff positions.
C. The organization chart will be updated to match the organization provided on the website

Element III – Legal Authority	Rating
A. Does the Element include an electronic link to District sewer system use ordinances, service agreements or other legally binding requirements?	DNC
B. Have the sewer system use ordinances been changed or modified recently? If so, are the changes identified in the SSMP Change Log?	C
C. Does the Element include the following specific legal authorities: a. Prevent illicit discharges to the sewer system? b. Procedures for collaboration with storm sewer agencies for access during spill responses? c. Assure proper design and construction of connections to sewer system assets? d. Proper access agreements and easement to assure for maintenance, repairs and replacement of sewer laterals owned or operated by the District? e. Easement accessibility agreements for sewer system O&M, as applicable? f. Proper enforcement authorities for violations of sewer program legal requirements? g. Has the District conducted enforcement activities during the audit period? If so, please list the action.	SC
Discussion: Element 3 supports the District's ability to implement the SSMP in support of spill prevention. A. The text thoroughly describes the necessary ordinances but does not include a link. This link will be added in the 2026 SSMP update. B. No Ordinances (other than periodic rate changes) have been adopted. C. The SSMP update will incorporate new procedures for collaboration with storm sewer agencies established by the recently adopted Statewide WDR.	

Element IV – Operations and Maintenance Program		Rating
A.	Does the District have an updated sewer system map and procedures for updating and submitting the map? Does the map include gravity line segments and manholes, pumping facilities, pressure pipes and valves, and applicable stormwater conveyance facilities within the sewer system service area boundaries?	SC
B.	Is the service area boundary map current? Will it be uploaded to CIWQS prior to 12/31/25?	C
C.	Does the District have a scheduling system and a data collection system for preventive operation and maintenance activities? 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.	PC
D.	Does the District's data include information on system areas/components prone to root-intrusion potentially resulting in system backup and/or failure.	C
E.	Is 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 Statewide WDR; Spill Emergency Response Plan procedures and practice drills; spill volume estimation; and electronic CIWQS reporting procedures data submitters.	SC
F.	Does the District maintain an inventory of sewer system equipment, including the identification of critical replacement and spare parts.	DNC

Discussion: Element 4 supports the District's ability to implement the SSMP in support of spill prevention.

A. The District has a map in the 2015 Master Plan that includes gravity line segments, manholes, and lift stations. This map will be updated in 2026 to include pressure pipes/valves or applicable stormwater conveyance facilities if this information is available. The SSMP update will also include procedures for updating and submitting the map.

B. The District follows a routine maintenance program. However, Section 4.3.2 of the SSMP does not describe current practices. Also, in the R&R program there has not been enough budget to facilitate forcemain and offset repairs. The 2026 SSMP update will be revised to reflect current practices and CIP planning.

C. The District has had 5 spills since 2009 and only 1 spill (in 2009) was caused by roots. Documentation is kept, but roots are not an issue.

D. The training program should be expanded to include all first responders. This will be discussed in the 2026 update.

E. Appendix C currently does not include a list of sewer equipment. This will be added to the 2026 update.

Element V – Design and Performance Provisions	Rating
A. Does the District's design criteria and construction standards and specifications address the construction, installation, repair, rehabilitation, and hydraulic capacity needs for existing and proposed system infrastructure components, including but not limited to pipelines, pump stations, and other system appurtenances?	C
B. Does the District have procedures and standards for inspection and testing of newly constructed, newly installed, repaired, and rehabilitated system pipelines, pumps, and other equipment and appurtenances?	SC
Discussion: Element 5 supports the District's ability to implement the SSMP in support of spill prevention. B. There is a new detail using SDR-26 for offset repair. This will be added to the 2026 SSMP update.	

Element VI – Spill Emergency Response Plan		Rating
A.	Does the District have a spill emergency response plan that describes procedures to reduce spill volumes and collect information for prevention of future spills? Does the plan include procedures for the following: a. Address emergency system operations, traffic control and other necessary response activities; b. Contain a spill and prevent/minimize discharge to waters of the State or any drainage conveyance system; c. Minimize and remediate public health impacts and adverse impacts on beneficial uses of waters of the State; d. Remove sewage from the drainage conveyance system; e. Clean the spill area and drainage conveyance system in a manner that does not inadvertently impact beneficial uses in the receiving waters; f. Implement technologies, practices, equipment, and interagency coordination to expedite spill containment and recovery; g. Conduct post-spill assessments of spill response activities; h. Document and report spill events as required in the General Order; i. Annually, review and assess effectiveness of the Spill Emergency Response Plan and update the Plan as needed.	SC
B.	Does the SERP include procedures for notification to primary responders, appropriate local officials, and appropriate regulatory agencies of a spill in a timely manner? Do the SERP procedures comply with the documentation, notification, monitoring and reporting requirements of the Statewide WDR? Note that all spill notification and reporting requirements meet during the audit period. No changes in the SERP or spill procedures were required as a result of post-spill assessments.	C
C.	Does the SERP include procedures for notification to other potentially affected entities (health agencies, water suppliers, etc.) of spills that potentially affect public health or reach waters of the State?	C
D.	Does the SERP require appropriate staff and contractors who implement the Spill Emergency to be appropriately trained?	SC
E.	Has the District implemented pre-planned coordination and collaboration with storm drain and other utility agencies? Is the coordination documented?	DNC
F.	Did the District prepare and submit to CIWQS spill event technical reports within the required timeline?	C

Discussion: The SERP that was completed in May 2023 supports the District's ability to implement the SSMP in support of spill prevention.

A. The SERP is missing the following information, which will be incorporated into the 2026 SSMP update:
    - Requirements for the monthly certification of "No-Spills" will also include "Category 4 Spills".
    - Post-spill assessments of the effectiveness of spill response activities and an annual review of the SERP will be described.
    - Discussion of interagency coordination during all stages of spill response will be described.
D. Although training is discussed in the SERP, Not all staff are trained on the SERP or Water Quality Management Plan. This training schedule will be documented in the 2026 update.
E. The SERP does not include a pre-planned coordination strategy with the storm agency. The timeline for this plan will be described in the 2026 SSMP update.
F. The District did not have a spill of 50,000 gallons or more during the audit period.

Element VII – Sewer Pipe Blockage Control Program		Rating
A.	Does the District's SSMP include procedures for the evaluation of whether a sewer pipe blockage control program is needed to control fats, oils, grease, rags and debris. The procedures should include: • 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.	C
B.	Do the District's procedures include: • 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.	C
C.	Does the District have a comprehensive public outreach and education program including schedule for activities?	C
D.	Does the District have a plan and schedule for disposal of pipe blockage substances?	C
Discussion: Element 7 – Pipe Blockage Control Program supports the District's ability to implement the SSMP in support of spill prevention. • The District has had 5 spills since 2009 two of which were due to rags. As a result, there is no justification for a FOG or pipe blockage control program. • The District does have the legal authority to prevent the discharge of FOG and other debris to the system, and to inspect grease-producing facilities.		

Element VIII – System Evaluation, Capacity Assurance and Capital Improvements	Rating
A. Does the District's SSMP 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.	PC
B. Does the SSMP include procedures and/or discuss completed tools that identify system components with hydraulic deficiency and/or limited capacity, considering: • 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 • Major sources that contribute to the peak flows associated with sewer spills.	PC

C. Does the SSMP 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 if vulnerable to collapse, failure, blockage, capacity issues, or other system deficiencies;
  ○ Are located in or within the vicinity of surface waters, steep terrain, high groundwater elevations, and environmentally sensitive areas;
  ○ Are within the vicinity of a receiving water with a bacterial-related impairment on the most current Clean Water Act section 303(d) List;
  ○ Assess the system conditions using visual observations, 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.
	PC

D. Does the capacity assessment use data from existing system condition assessments, system inspections, system audits, spill history, and other available information?	PC
E. Does the analysis consider the capacity of systems with regard to the following: • Flood-prone systems subject to increased infiltration and inflow, under normal local and regional storm condition; • 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.	PC
F. Are the capital recommendations prioritized to consider the severity of the consequences of potential spills?	PC
G. Does the capital improvement plan 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; • 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.	PC

Discussion: Element 8 – Capacity Assurance supports the District's ability to implement the SSMP in support of spill prevention.

A. Please see Comment "C" of Element 4 for a discussion of system maintenance and condition assessment.

B. This also applies to Items D, F, and G, above.

The District has had 5 spills since 2009, none of which were capacity-related. However, due to inflow and infiltration, the main lift station may experience capacity issues during a severe storm. A capacity analysis may be required in the future. This will be reviewed and discussed in the 2026 update. If an updated capacity-related CIP is required, the schedule for development of this plan will be included in the 2026 update.

C. This also applies to Item E, above.

Please see Comment "C" of Element 4 for a discussion of system maintenance and condition assessment. The recently adopted Statewide WDR included requirements associated with environmental consequence and climate change. These topics as related to condition and capacity assessment will be discussed in the 2026 SSMP update.

Element IX – Monitoring, Measurement and Program Modifications	Rating
A. Does the SSMP 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 SSMP activities; • Monitoring the implementation and measuring the effectiveness of each Plan Element; • Assessing the success of the preventive operation and maintenance activities through tracking and reporting of selected performance indicators; • 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.	DNC
B. Has the District identified and illustrated spill trends, including frequencies, locations and estimated volumes, maintenance performance results and other effectiveness indicators?	C
C. Have the performance trends resulted in modifications or changes to SSMP elements and are the changes identified in the Change Log?	C
Discussion: Element 9 – Monitoring, Measurement, and Program Modifications supports the District's ability to implement the SSMP in support of spill prevention. A. The Adaptive Management section is a new requirement of the recently-adopted Statewide WDR and will be included in the 2026 update. B. Data for spills and other trends should be updated to the most recent 5-year period. This will be completed as part of the 2026 SSMP update. Also, the SSMP cleaning matrix will be put into more frequent use in the future. This practice will be discussed further in the 2026 SSMP update. C. There have been no changes to the SSMP since the prior version was completed.	

Element X – Internal Audit		Rating
A.	Does the SSMP include internal audit procedures that are sufficient for the District to comply with section 5.4 (Sewer System Management Plan Audits) of the Statewide WDR?	SC
B.	Does the Audit Report include operational personnel participation?	C
C.	Does the Audit describe SSMP effectiveness evaluated for spill impacts and include corrective actions and timelines?	C

Discussion:

A. The recently adopted Statewide WDR has new audit requirements and the prior SSMP is outdated. This section will be revised in the 2026 update.

Element XI – Communications	Rating
Does the SSMP include procedures for the District to communicate with the public for: • Spills and discharges resulting in closures of public areas, or that enter a source of drinking water; • The development, implementation, and update of the SSMP, including opportunities for public input to Plan implementation and updates; • Coordination with owners/operators of systems that connect into the District's system, including satellite systems, for system operation, maintenance, and capital improvement-related activities.	SC
Discussion: Element 11, Communications, supports the District's ability to implement the SSMP in support of spill prevention. • The SSMP outlines how the District communicates with the public as it relates to the SSMP in compliance with the Statewide WDR. The SSMP does not discuss procedures for the District to communicate with the public in regards to spills or to communicate with the owners and operators of connecting systems. This missing information will be addressed in the 2026 SSMP update. • The District's SSMP is on the website. Communication about the development or implementation of the SSMP has not been posted. Further, staff provide updates to the District Board regarding operations and maintenance of District enterprises but these updates are not specific to the SSMP. The 2026 update will be presented to the Board with a staff report describing the purpose and process. This information will be available to the public via agenda materials, and the updated SSMP will be available via the website.	

Audit Team:

Prepared By:	**Dan Garrett**	**Date:**	**04/16/2026**
Reviewed By:	**Tim Kennedy**	**Date:**	**05/06/2026**
Certified By:	**Tim Kennedy**	**Date:**	**XX/XX/202X**
	Approved for Filing On	**Date:**	**XX/XX/202X**

North Marin Water District – Oceana Marin
Sewer System Management Plan
202X SSMP Internal Audit

3-Year Period Ending August 2, 202X
Due February 2, 202X

This 2026 SSMP Internal Audit was prepared for submittal into the online CIWQS Sanitary Sewer System Database per the requirements in section 3.10 of Attachment E1 of State Water Resources Control Board Order WQ 2022-0103-DWQ ("Statewide WDR"). The District's sewer system operators' input has been considered in compiling the audit findings below.

This purpose of this audit is as follows:

- Evaluate the implementation and effectiveness of the District's Sewer System Management Plan in preventing spills;
- Evaluate the District's compliance with the Statewide WDR;
- 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.

This report includes audit findings and recommended corrective actions and a proposed schedule for the District to address the identified deficiencies.

Each of the SSMP Elements and Sub-elements below have been graded using the following sufficiency ranking system. Written descriptions to explain rankings of SC, PC, MC, and/or DNC are added at the bottom of each Element.

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- *Substantially Complies (SC) – complies mostly with all WDR objectives*
- *Partially Complies (PC) – complies with basic WDR objectives*
- *Marginal Compliance (MC) – complies minimally with basic objectives of the WDR*
- *Does Not Comply (DNC) – does not comply with WDR objectives*

Element I – Sewer System Management Plan Goal and Introduction	Rating
A. Does the Element include a narrative introduction section that discusses (1) regulatory context, (2) SSMP update schedule, (3) sewer system asset overview? a. General description of program, implementation, and updates b. Schedule for SSMP updates and audits c. Asset overview including location, service area boundary and reference to sewer system maps, population and community served, system size, structures diverting stormwater to the sewer system, data management systems, sewer system ownership and operation responsibilities between the District 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).	
B. Are the District's goals consistent with the following Statewide WDR goals: a. Properly manage, operate, and maintain all parts of the District's sanitary sewer system(s); b. Reduce and prevent spills; and c. Contain and mitigate spills that do occur.	
Discussion:	

Element II – Organization		Rating
A.	Are District LRO and data submitters stated in the SSMP currently identified in CIWQS? Have they been properly designated by the District?	
B.	Does the SSMP include names, contact information (titles, telephone numbers, email) for management, administrative and maintenance positions responsible for specific Elements of the SSMP?	
C.	Are the organizational lines of authority current and up-to-date on the District Organization chart?	
D.	Is the chain of communications for spill reporting complete from complaint through final approval of all spill event reporting?	
Discussion:		

Element III – Legal Authority	Rating
A. Does the Element include an electronic link to District sewer system use ordinances, service agreements or other legally binding requirements?	
B. Have the sewer system use ordinances been changed or modified recently? If so, are the changes identified in the SSMP Change Log?	
C. Does the Element include the following specific legal authorities: a. Prevent illicit discharges to the sewer system? b. Procedures for collaboration with storm sewer agencies for access during spill responses? c. Assure proper design and construction of connections to sewer system assets? d. Proper access agreements and easement to assure for maintenance, repairs and replacement of sewer laterals owned or operated by the District? e. Easement accessibility agreements for sewer system O&M, as applicable? f. Proper enforcement authorities for violations of sewer program legal requirements? g. Has the District conducted enforcement activities during the audit period? If so, please list the action.	
Discussion:	

Element IV – Operations and Maintenance Program		Rating
A.	Does the District have an updated sewer system map and procedures for updating and submitting the map? Does the map include gravity line segments and manholes, pumping facilities, pressure pipes and valves, and applicable stormwater conveyance facilities within the sewer system service area boundaries?	
B.	Is the service area boundary map current? Will it be uploaded to CIWQS prior to 12/31/25?	
C.	Does the District have a scheduling system and a data collection system for preventive operation and maintenance activities? 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.	
D.	Does the District's data include information on system areas/components prone to root-intrusion potentially resulting in system backup and/or failure.	
E.	Is 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 Statewide WDR; Spill Emergency Response Plan procedures and practice drills; spill volume estimation; and electronic CIWQS reporting procedures data submitters.	
F.	Does the District maintain an inventory of sewer system equipment, including the identification of critical replacement and spare parts.	
Discussion:		

Element V – Design and Performance Provisions	Rating
A. Does the District's design criteria and construction standards and specifications address the construction, installation, repair, rehabilitation, and hydraulic capacity needs for existing and proposed system infrastructure components, including but not limited to pipelines, pump stations, and other system appurtenances?	
B. Does the District have procedures and standards for inspection and testing of newly constructed, newly installed, repaired, and rehabilitated system pipelines, pumps, and other equipment and appurtenances?	
Discussion:	

Element VI – Spill Emergency Response Plan		Rating
A.	Does the District have a spill emergency response plan that describes procedures to reduce spill volumes and collect information for prevention of future spills? Does the plan include procedures for the following: a. Address emergency system operations, traffic control and other necessary response activities; b. Contain a spill and prevent/minimize discharge to waters of the State or any drainage conveyance system; c. Minimize and remediate public health impacts and adverse impacts on beneficial uses of waters of the State; d. Remove sewage from the drainage conveyance system; e. Clean the spill area and drainage conveyance system in a manner that does not inadvertently impact beneficial uses in the receiving waters; f. Implement technologies, practices, equipment, and interagency coordination to expedite spill containment and recovery; g. Conduct post-spill assessments of spill response activities; h. Document and report spill events as required in the General Order; i. Annually, review and assess effectiveness of the Spill Emergency Response Plan and update the Plan as needed.	
B.	Does the SERP include procedures for notification to primary responders, appropriate local officials, and appropriate regulatory agencies of a spill in a timely manner? Do the SERP procedures comply with the documentation, notification, monitoring and reporting requirements of the Statewide WDR? Note that all spill notification and reporting requirements meet during the audit period. No changes in the SERP or spill procedures were required as a result of post-spill assessments.	
C.	Does the SERP include procedures for notification to other potentially affected entities (health agencies, water suppliers, etc.) of spills that potentially affect public health or reach waters of the State?	
D.	Does the SERP require appropriate staff and contractors who implement the Spill Emergency to be appropriately trained?	
E.	Has the District implemented pre-planned coordination and collaboration with storm drain and other utility agencies? Is the coordination documented?	
F.	Did the District prepare and submit to CIWQS spill event technical reports within the required timeline?	
Discussion:		

Element VII – Sewer Pipe Blockage Control Program		Rating
A.	Does the District's SSMP include procedures for the evaluation of whether a sewer pipe blockage control program is needed to control fats, oils, grease, rags and debris. The procedures should include: • 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.	
B.	Do the District's procedures include: • 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.	
C.	Does the District have a comprehensive public outreach and education program including schedule for activities?	
D.	Does the District have a plan and schedule for disposal of pipe blockage substances?	
Discussion:		

Element VIII – System Evaluation, Capacity Assurance and Capital Improvements	Rating
A. Does the District's SSMP 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.	
B. Does the SSMP include procedures and/or discuss completed tools that identify system components with hydraulic deficiency and/or limited capacity, considering: • 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 • Major sources that contribute to the peak flows associated with sewer spills.	

C. Does the SSMP 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:
  o Hold a high level of environmental consequences if vulnerable to collapse, failure, blockage, capacity issues, or other system deficiencies;
  o Are located in or within the vicinity of surface waters, steep terrain, high groundwater elevations, and environmentally sensitive areas;
  o Are within the vicinity of a receiving water with a bacterial-related impairment on the most current Clean Water Act section 303(d) List;
  o Assess the system conditions using visual observations, video surveillance and/or other comparable system inspection methods;
  o 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;
  o Maintain documents and recordkeeping of system evaluation and condition assessment inspections and activities; and
  o 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.	

D. Does the capacity assessment use data from existing system condition assessments, system inspections, system audits, spill history, and other available information?	
E. Does the analysis consider the capacity of systems with regard to the following: • Flood-prone systems subject to increased infiltration and inflow, under normal local and regional storm condition; • 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.	
F. Are the capital recommendations prioritized to consider the severity of the consequences of potential spills?	
G. Does the capital improvement plan 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; • 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.	
Discussion:	

Element IX – Monitoring, Measurement and Program Modifications	Rating
A. Does the SSMP 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 SSMP activities; • Monitoring the implementation and measuring the effectiveness of each Plan Element; • Assessing the success of the preventive operation and maintenance activities through tracking and reporting of selected performance indicators; • 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.	
B. Has the District identified and illustrated spill trends, including frequencies, locations and estimated volumes, maintenance performance results and other effectiveness indicators?	
C. Have the performance trends resulted in modifications or changes to SSMP elements and are the changes identified in the Change Log?	
Discussion:	

Element X – Internal Audit		Rating
A.	Does the SSMP include internal audit procedures that are sufficient for the District to comply with section 5.4 (Sewer System Management Plan Audits) of the Statewide WDR?	
B.	Does the Audit Report include operational personnel participation?	
C.	Does the Audit describe SSMP effectiveness evaluated for spill impacts and include corrective actions and timelines?	
Discussion:		

Element XI – Communications	Rating
Does the SSMP include procedures for the District to communicate with the public for: • Spills and discharges resulting in closures of public areas, or that enter a source of drinking water; • The development, implementation, and update of the SSMP, including opportunities for public input to Plan implementation and updates; • Coordination with owners/operators of systems that connect into the District's system, including satellite systems, for system operation, maintenance, and capital improvement-related activities.	
Discussion:	

Audit Team:

Prepared By:		**Date:**	**XX/XX/202X**
Reviewed By:		**Date:**	**XX/XX/202X**
Certified By:		**Date:**	**XX/XX/202X**
	Approved for Filing On	**Date:**	**XX/XX/202X**

Appendix J

Element 11 (Communication Plan) Placeholder for Future Supporting Documents

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10

NORTH MARIN WATER DISTRICT

MEMORANDUM

To: Board of Directors

Date: September 15, 2026

From: Julie Blue, Auditor-Controller JB
Nancy Williamson, Accounting Supervisor NW

Subject: Preliminary Fiscal Year 2025/2026 Financial Statement
T:\AC\Board Reports\Board Memos\2026\Financial Statements\BOD Memo Financial Statements FY 25.26 4th Qtr.docx

RECOMMENDED ACTION: Information

FINANCIAL IMPACT: None

Attached is the preliminary Fiscal Year 2025/2026 Financial Statement for all of North Marin Water District's enterprises. The financial statement includes financial transactions for the period of July 1, 2025 through June 30, 2026. Key elements of the report will be highlighted and staff is available to answer questions from the Board of Directors. This is a draft report pending conclusion of the audit, and the final audited Financial Statements will be presented to the Board at a future meeting.

ATTACHMENTS:
1. FY 25/26 Financial Statement

NORTH MARIN WATER DISTRICT

FINANCIAL STATEMENT
FISCAL YEAR 2025-26

JUNE 2026

NORTH MARIN WATER DISTRICT
FINANCIAL STATEMENTS
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MEMORANDUM

To: Tony Williams, General Manager September 4, 2026

From: Reviewed by: Julie Blue, Auditor-Controller

Prepared by: Nancy Williamson, Accounting Supervisor and Ling Reilly, Senior Accountant

Subj: Information – FY25/26 June Financial Statement
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CONSOLIDATED SUMMARY Actual vs. Budget	Jun-26 Actual	FY25/26 Actual YTD	FY25/26 Budget	FYTD / Budget %
Operating Revenue	$2,960,738	$31,681,718	$31,282,000	101%
Operating Expense	$3,227,914	$30,582,672	$29,746,000	103%
Non-Operating Revenue / (Expense)	$147,946	$383,672	$26,000	1476%
Net Income / (Loss)	($119,230)	$1,482,718	$1,562,000	95%
Other Sources / (Uses)*	$776,034	($5,512,522)	($2,872,000)	192%
Cash Increase / (Decrease)	$656,804	($4,029,804)	($1,310,000)	308%

* See Page 8.

For the fiscal year 2025-2026, the District generated a net Income of $1,482,718 and saw a net cash decrease of $4,029,804. On a seasonally adjusted basis, Operating Revenue came in 1.3% over budget and Operating Expense came in 2.8% over budget. $3,809,783 (63%) of the Capital Improvement Projects Budget was expended this fiscal year to date.

SUMMARY INCOME STATEMENTS BY SERVICE AREA
PRESENTED IN ACCORDANCE WITH GENERALLY ACCEPTED ACCOUNTING PRINCIPALS

NOVATO WATER Year over Year Comparison	Jun-26 Actual	FY25/26 Actual YTD	FY24/25 Actual YTD	FY26 vs 25 Up/(Down)
Operating Revenue	$2,658,594	$28,198,303	$27,380,920	3%
Operating Expense	2,741,212	27,292,082	27,330,405	(0%)
Other Income / (Expense)	150,650	518,969	(253,721)	
Net Income / (Loss)	$68,033	$1,425,190	($203,206)	
Active Accounts	20,900	20,900	20,882	0%
Consumption (MG)	214	2,220	2,299	(3%)
Average Commodity Rate / 1,000 gal	$8.64	$8.51	$8.07	5%
Income / (Loss) / Active Account	$3.26	$68.19	($9.73)	
Income / (Loss) / 1,000 Gal	$0.32	$0.64	($0.09)	
Facility Reserve Charges	$7,640	$91,680	$153,690	(40%)
FRC Transfer (to)/from Recycled Water	$0	$0	$0	-
Developer 'In-Kind' Contributions	($59,800)	$1,496,976	$823,783	82%

Consumption for the fiscal year to date was 3% less than the prior year. Total operating revenue, which includes wheeling and other miscellaneous service charges, Increased $817,383 from the prior year. Total operating expense was $38,323 less than last year.

The Stafford Treatment Plant produced 417 MG this fiscal year-to-date at a cost of $5,981/MG versus $4,519/MG[3] from SCWA. The budget for Stafford is 650 MG at a cost of $3,575/MG.

The fiscal year income (which includes non-operating items such as interest revenue and expense) of $1,425,190 compares to a budgeted net income for the year of $1,942,000 and to a net loss of $203,206 for the prior year. $3,227,897 70% of the Novato Water Capital Improvement Project Budget was spent versus $6,566,434 (109%) for the prior year. $91,680 in Facility Reserve Charges (FRC) have been collected ($595,000 is budgeted). No FRC reserves were transferred this fiscal year from the Novato Water Fund to the Recycled Water Fund. The Novato FRC Reserve has a net deficit of $12,166,798 arising from relieving FRC expenditures and transfers to the RW Fund in advance of FRC receipts. This is up from a net deficit of $9,792.179 last year. That deficit will be reimbursed by future Connection Fee revenue. The Novato cash balance increased $810,210 in June and stood at $10,318,719 at month end, compared to a budgeted projection of $14,370,000 at fiscal year-end.

NOVATO RECYCLED	**Jun-26**	**FY25/26**	**FY24/25**	**FY26 vs 25**
Year over Year Comparison	**Actual**	**Actual YTD**	**Actual YTD**	**Up/(Down)**
Operating Revenue	$140,452	$1,835,445	$1,819,392	1%
Operating Expense	289,723	1,596,065	1,527,240	5%
Other Income / (Expense)	580	(48,414)	111,846	
Net Income / (Loss)	($148,691)	$190,966	$403,998	
Active Accounts	105	105	104	1%
Consumption (MG)	37.0	208.5	223.4	(7%)
Average Commodity Rate / 1,000 gal (net)	$6.53	$6.94	$6.69	4%
Novato Sanitary Production (MG)	26.7	151.1	199.2	(24%)
Las Gallinas Production (MG)	6.6	78.1	66.5	17%
Potable Water Input (MG)	0.3	27.3	19.0	44%
FRC Transfer from Novato	$0	$0	$0	-
RW Costs	$118,195	$382,045	$370,452	3%

208.5 MG was delivered to RW customers this fiscal year to date, 7% less than the prior year. Operating revenue was 1% more than last year. Total operating expense was 5% more than the prior year. The recycled water was produced at a cost of $2,992/MG[2] (including potable water consumed) versus $4,519/MG[3] from SCWA. The budgeted production cost of recycled water is $2,372/MG.

The fiscal year net income of $190,966 compares to a budgeted net loss for the year of $191,000 and a net income of $403,998 for the prior year. $13,272 (13%) of the Recycled Water Capital Improvement Project Budget was spent versus $278,975 (62%) for the prior year.

The Novato Recycled cash balance stood at $7,068,699 at month end, $6.7M of which amount resides in restricted reserves for debt service, the Deer Island Facility Replacement Fund and the Recycled Water Capital Replacement and Expansion Fund.

[1] Stafford production cost = TP op expense ($1,818,549) + SRF loan interest ($89,014) + plant depreciation ($588,439)/417 MG produced

[2] Recycled Water production cost = purchased water cost ($382,045) + treatment expense ($256,778) + Deer Island RW Facility SRF loan interest ($12,664) + Deer Island plant depreciation ($115,919)/257 MG produced

[3] SCWA production cost per MG = O&M charge ($3,509) + debt service charge ($456) + Russian River conservation charge ($492) + Russian River projects charge ($61)

WEST MARIN WATER	**Jun-26**	**FY25/26**	**FY24/25**	**FY26 vs 25**
Year over Year Comparison	**Actual**	**Actual YTD**	**Actual YTD**	**Up/(Down)**
Operating Revenue	$130,907	$1,267,404	$1,170,493	8%
Operating Expense	111,703	1,198,066	1,341,752	(11%)
Other Income / (Expense)	(2,653)	(53,624)	(6,062)	
Net Income / (Loss)	$16,550	$15,714	($177,321)	
Active Accounts	804	804	802	0%
Consumption (MG)	6.3	57.7	61.5	(6%)
Average Commodity Rate / 1,000 gal (net)	$16.35	$15.87	$13.96	14%
Income/ (Loss) / Active Account	$20.58	$19.55	($221.10)	
Income / (Loss) / 1,000 Gal	$2.64	$0.27	($2.88)	
Facility Reserve Charges	$0	$5,580	$31,820	(82%)
Developer 'In-Kind' Contributions	$4,070	$1,556	$257,787	(99%)

Consumption for the fiscal year was 6% less than the prior year. Operating revenue was 8% more than last year.

Operating expenditures were $143,686, or 11% less than the previous year. The fiscal year net gain of $15,714 compares to a budgeted annual net loss of $68,000 and to a net loss of $177,321 for the prior year. $554,344 (43%) of the Capital Improvement Project Budget was expended this fiscal year, and $5,580 in connection fees have been collected ($0 is budgeted). The West Marin cash balance remained at $0 in June, compared to a budgeted projection of $437,000 at fiscal year-end.

OCEANA MARIN SEWER	**Jun-26**	**FY25/26**	**FY24/25**	**FY26 vs 25**
Year over Year Comparison	**Actual**	**Actual YTD**	**Actual YTD**	**Up/(Down)**
Operating Revenue	$30,785	$380,566	$347,556	9%
Operating Expense	85,275	496,459	411,275	21%
Other Income / (Expense)	(631)	(33,260)	(11,134)	199%
Net Income / (Loss)	($55,121)	($149,153)	($74,853)	99%
Active Accounts	241	241	241	0%
Monthly Sewer Service Charge	$131	$131	$121	8%
Income / (Loss) / Active Account	($228.72)	($618.89)	($310.59)	-
Sewage Facilities Connection Charges	$0	$0	$30,000	-

Operating revenue of $380,566 was 9% more than the previous year due to the 8% rate increase effective July 1, 2025. Operating expenditures were 21%, or $85,183 more than the previous year. The fiscal year net loss of $149,153 compares to a budgeted annual net loss of $121,000 and to a net loss of $74,853 for the prior year. $14,270 (29%) of the Capital Improvement Project Budget has been expended this fiscal year.

No Sewage Facilities Connection Charges (SFCC) have been collected ($0 is budgeted). The Oceana Marin cash balance decreased $62,153 in June and stood at $264,062 at month end, compared to a budgeted projection of $123,000 at fiscal-year-end.

NORTH MARIN WATER DISTRICT
STATEMENT OF NET POSITION
FOR THE PERIOD ENDING JUNE 30, 2026

	TOTAL	NOVATO WATER	NOVATO RECYCLED	WEST MARIN WATER	OCEANA MARIN SEWER
ASSETS					
Cash & Investments					
Unrestricted/Undesignated Cash	$301,739	$0	$180,678	$0	$121,062
Restricted Cash (Note 1)					
Connection Fee Fund	$0	$0	$0	$0	$0
Deer Island RWF Replacement Fund	215,000	0	215,000	0	0
Capital Replacement & Expansion Fund	5,557,950	0	5,557,950	0	0
STP SRF Reserve-Marin Co Treasury	1,055,449	1,055,449	0	0	0
RWS North/South SRF Reserve Fund	614,299	0	614,299	0	0
RW Central Area SRF Reserve Fund	275,773	0	275,773	0	0
DL Falk Const Escrow Acct	0	0	0	0	0
Designated Cash (Note 2)					
Liability Contingency Fund	350,000	350,000	0	0	0
Retiree Medical Benefits Fund	4,327,665	4,327,665	0	0	0
Maintenance Accrual Fund	0	0	0	0	0
Operating Reserve Fund	4,961,985	4,593,985	225,000	0	143,000
Total Cash	$17,662,498	$10,329,737	$7,068,699	$0	$264,062
Gain/(Loss) on MV of Investments	($11,029)	($11,029)	$0	$0	$0
Market Value of Cash & Investments	$17,651,469	$10,318,709	$7,068,699	$0.00	$264,062
Current Assets					
Net Receivables - Consumers	$1,927,706	$1,585,459	$174,081	$162,495	$5,671
Accrued Water Sales	4,082,767	3,644,467	321,765	116,535	0
Accounts Receivable-Other	564,210	524,444	39,574	192	0
Prepaid Expense	423,711	423,711	0	0	0
Reimbursable Small Jobs	3,159	3,159	0	0	0
Interest Receivable	158,880	158,093	787	0	0
Inventories	1,037,981	1,037,981	0	0	0
Deposits Receivable	29,982	29,982	0	0	0
Total Current Assets	$8,228,397	$7,407,296	$536,208	$279,223	$5,671

NORTH MARIN WATER DISTRICT
STATEMENT OF NET POSITION
FOR THE PERIOD ENDING JUNE 30, 2026

	TOTAL	NOVATO WATER	NOVATO RECYCLED	WEST MARIN WATER	OCEANA MARIN SEWER
Loans Receivable					
Employee Loans (Note 3)	$1,150,000	$1,150,000	$0	$0	$0
Due From Other Funds (Note 10)	80,149	80,149	0	0	0
Other Long Term Receivables (Note 4)	4,096,779	3,191,942	904,837	0	0
Loans Receivable	$5,326,928	$4,422,090	$904,837	$0	$0
Property and Plant					
Land & Land Rights	$1,484,662	$1,362,138	$0	$122,524	$0
Dam, Lake, & Source Facilities	7,114,088	5,180,290	0	1,933,798	0
Treatment Facilities	26,867,583	20,370,221	2,666,198	790,570	3,040,595
Storage Facilities	30,427,856	25,232,484	1,643,458	3,551,914	0
Transmission Facilities (16"+)	29,620,500	29,498,176	0	122,324	0
Distribution and Pumping Facilities	120,605,320	81,865,841	32,458,743	6,280,737	0
Sewer Mains, Pumps, & Laterals	1,274,480	0	0	0	1,274,480
Sub-Total	$217,394,490	$163,509,150	$36,768,399	$12,801,866	$4,315,075
Less Accumulated Depreciation (Note 5)	(81,334,593)	(65,664,917)	(8,984,777)	(5,386,585)	(1,298,315)
Net Property and Plant	$136,059,896	$97,844,233	$27,783,622	$7,415,281	$3,016,760
Buildings and Equipment (Note 6)					
Buildings	$20,852,746	$20,852,746	$0	$0	$0
Office Equipment	805,758	805,758	0	0	0
Laboratory Equipment	290,971	290,971	0	0	0
Trucks & Automobiles	2,527,026	2,527,026	0	0	0
Construction Equipment	1,169,539	1,169,539	0	0	0
Tools, Shop Equipment	574,370	574,370	0	0	0
Lease Assets	0	0	0	0	0
Sub-Total	$26,220,410	$26,220,410	$0	$0	$0
Less Accumulated Depreciation (Note 5)	(4,338,131)	(4,338,131)	0	0	0
Net Buildings and Equipment	$21,882,279	$21,882,279	$0	$0	$0
Construction In Progress					
Developer	$241,647	$190,101	$0	$51,546	$0
District	$4,900,435	$3,151,213	$0	$1,683,466	$65,756
Total Construction in Progress	$5,142,083	$3,341,314	$0	$1,735,012	$65,756
Net Physical Plant & Equipment	163,084,258	123,067,826	27,783,622	9,150,293	3,082,517
Deferred Outflow of Resources-GASB68	5,327,743	5,327,743	0	0	0
Deferred Outflow of Resources-GASB75	219,707	219,707	0	0	0
TOTAL ASSETS	$199,838,502	$150,763,371	$36,293,366	$9,429,516	$3,352,250

NORTH MARIN WATER DISTRICT
STATEMENT OF NET POSITION
FOR THE PERIOD ENDING JUNE 30, 2026

	TOTAL	NOVATO WATER	NOVATO RECYCLED	WEST MARIN WATER	OCEANA MARIN SEWER
LIABILITIES AND NET ASSETS					
Current Liabilities					
Trade Accounts Payable	$2,274,526	$2,274,526	$0	$0	$0
Reimbursement Prog. Unclaimed Funds	395,147	395,147	0	0	0
Loan Debt Principal Payable-Current	1,497,545	486,310	1,011,235	0	0
Bank of Marin Principal Payable-Current	468,107	408,189	0	59,918	0
JP Morgan/Chase AMI Loan-Current	315,000	315,000	0	0	0
Webster Bank-Admin Bldg/CIP Loan-Current	825,741	825,741	0	0	0
WM & OM Loans Due to Novato-Current	126,266	0	0	95,727	30,539
Accrued Interest Payable-SRF Loan	77,834	0	77,834	0	0
JP Morgan/Chase AMI Loan Interest Payable	21,340	21,340	0	0	0
Webster Bank Loan Interest Payable	174,052	174,052	0	0	0
WM & OM Loans from Novato-Loan Interest Payable	30,472	0	0	19,993	10,479
Deposits/Performance Bonds	165,185	76,545	0	88,640	0
Retiree Health Benefits Payable - Current	224,177	224,177	0	0	0
Unemployment Insurance Reserve (Note 8)	11,700	11,700	0	0	0
Payroll Benefits (Note 9)	1,238,183	1,131,854	33,586	51,349	21,395
Due To Other Funds (Note 10)	80,149	0	0	80,149	0
Enterprise Vehicle Leases	94,314	94,314	0	0	0
Deferred Revenue	294,247	288,298	177	5,771	0
Total Current Liabilities	$8,313,984	$6,727,194	$1,122,831	$401,546	$62,413
Restricted Liabilities					
Construction Advances	$227,591	$99,331	$0	$128,261	$0
Total Restricted Liabilities	$227,591	$99,331	$0	$128,261	$0
Long Term Liablilities (Note 7)					
JP Morgan/Chase AMI Loan Payable	$2,065,000	$2,065,000	$0	$0	$0
Webster Bank-Admin Bldg/CIP Loan Payable	15,963,820	15,963,820	0	0	0
WM and OM Loan from Novato	951,636	0	0	632,175	319,461
STP Rehab SRF Loan	2,520,124	2,520,124	0	0	0
RWS North/South Expansion SRF Loan	3,340,936	0	3,340,936	0	0
RWS Central Expansion SRF Loan	5,200,245	0	5,200,245	0	0
Bank of Marin Loan	2,223,399	1,938,804	0	284,595	0
Enterprise Vehicle Leases	107,951	107,951	0	0	0
Net Pension Liability	18,203,208	18,203,208	0	0	0
Total OPEB Liability (Note 2)	4,103,488	4,103,488	0	0	0
Total Long Term Liabilities	$54,679,807	$44,902,395	$8,541,181	$916,770	$319,461
Deferred Inflow of Resources-GASB 68	362,944	362,944	0	0	0
Deferred Inflow of Resources-GASB 75	558,953	558,953	0	0	0
Deferred Inflow of Resources-Leases	251,665	251,665	0	0	0
TOTAL LIABILITIES	$64,394,945	$52,902,482	$9,664,012	$1,446,577	$381,874

NORTH MARIN WATER DISTRICT
STATEMENT OF NET POSITION
FOR THE PERIOD ENDING JUNE 30, 2026

	TOTAL	NOVATO WATER	NOVATO RECYCLED	WEST MARIN WATER	OCEANA MARIN SEWER
Net Assets					
Invested in Capital Assets					
Contributions in Aid of Construction	$91,163,631	$82,200,921	$5,810,128	$2,472,827	$679,755
Grants in Aid of Construction	16,016,865	586,525	10,108,537	3,784,016	1,537,787
Connection Fees	52,610,134	36,715,017	12,874,691	2,198,970	821,455
Total Investment	$159,790,630	$119,502,463	$28,793,357	$8,455,813	$3,038,997
Restricted Reserves					
Connection Fee Fund	($12,950,661)	($12,166,798)	$0	($561,519)	($222,344)
Deer Island RWF Replacement Fund	215,000	0	215,000	0	0
Capital Replacement & Expansion Fund	5,557,950	0	5,557,950	0	0
RWS North/South SRF Reserve Fund	614,299	0	614,299	0	0
RW Central Area SRF Reserve Fund	275,773	0	275,773	0	0
Designated Reserves					
Liability Contingency Fund	448,885	350,000	0	98,885	0
Maintenance Accrual Fund	4,356,485	4,356,485	0	0	0
Retiree Medical Benefits Fund	4,327,665	4,327,665	0	0	0
Operating Reserve Fund	8,424,000	7,712,000	225,000	344,000	143,000
Earned Surplus - Prior Yrs	(37,253,697)	(27,450,116)	(9,648,502)	(349,955)	194,876
Net Income/(Loss)	1,482,718	1,425,190	190,966	15,714	(149,153)
Prior Period Adjustment	0	0	0	0	0
Transfer (To)/From Reserves (see below)	154,511	(196,000)	405,511	(20,000)	(35,000)
Total Restricted & Designated	($24,347,072)	($21,641,574)	($2,164,003)	($472,874)	($68,621)
TOTAL NET POSITION	$135,443,558	$97,860,890	$26,629,354	$7,982,939	$2,970,375
Transfer (To)/From Reserves					
Connection Fee	$0	$0	$0	$0	$0
Liability Reserve	656,485	656,485	0	0	0
Capital Replacement & Expansion Fund	416,511	0	416,511	0	0
Maintenance Reserve	(356,485)	(356,485)	0	0	0
RWF Replacement Fund	0	0	0	0	0
Retiree Medical Insurance Fund	0	0	0	0	0
(Gain)/Loss WC Fund	0	0	0	0	0
Bank of Marin Project Fund	0	0	0	0	0
Operating Reserve Fund	(562,000)	(496,000)	(11,000)	(20,000)	(35,000)
Trsf to Webster Bank-Admin Bldg/CIP Fund	0	0	0	0	0
Total Transfer	$154,511	($196,000)	$405,511	($20,000)	($35,000)
TOTAL LIABILITIES AND FUND BALANCE	$199,838,502	$150,763,371	$36,293,366	$9,429,516	$3,352,250

NORTH MARIN WATER DISTRICT
SOURCES AND USES OF FUNDS STATEMENT - ALL SERVICE AREAS COMBINED
FOR THE PERIOD ENDING JUNE 30, 2026

	YTD Actual	Annual Budget	YTD/ Budget %	Prior YTD Actual
OPERATING REVENUE				
Water Rate Revenue	$21,302,255	$20,962,000	102%	$20,935,105
Bimonthly Service Charge	9,521,759	9,483,000	100%	8,932,174
Sewer Service Charge	378,066	377,000	100%	347,256
Wheeling & Misc Service Charges	479,638	460,000	104%	503,827
TOTAL OPERATING REVENUE	$31,681,718	$31,282,000	101%	$30,718,361
OPERATING EXPENDITURES				
Source of Supply	$8,405,987	$7,829,000	107%	$9,083,225
Pumping	916,087	965,000	95%	893,128
Operations	1,574,024	2,067,000	76%	1,780,879
Water Treatment	3,213,353	3,515,000	91%	2,954,273
Sewer Operations	316,422	336,000	94%	275,886
Transmission & Distribution	4,355,551	5,088,000	86%	4,643,210
Consumer Accounting	627,006	700,000	90%	593,847
Water Conservation	511,933	560,000	91%	512,021
General & Administrative	5,910,885	4,213,000	140%	5,794,581
Depreciation	4,751,425	4,473,000	106%	4,079,623
TOTAL OPERATING EXPENDITURES	$30,582,672	$29,746,000	103%	$30,610,672
NET OPERATING INCOME (LOSS)	$1,099,046	$1,536,000	72%	$107,688
NON-OPERATING REVENUE/(EXPENSE)				
Tax Proceeds	$151,006	$152,000	99%	$146,105
Interest Revenue	900,011	595,000	151%	1,251,201
Miscellaneous Revenue	478,072	885,000	54%	165,782
Loan Interest Expense	(993,393)	(1,013,000)	98%	(1,075,881)
Miscellaneous Expense	(27,109)	(16,000)	169%	(646,277)
Capital Contribution Expense-NSD & LGVSD	(124,916)	(577,000)	22%	0
TOTAL NON-OP REVENUE/(EXPENSE)	$383,672	$26,000	1476%	($159,071)
NET INCOME/(LOSS)	$1,482,718	$1,562,000	95%	($51,383)
OTHER SOURCES/(USES) OF FUNDS				
Add Depreciation Expense	$4,751,425	$4,473,000	106%	$4,079,623
Connection Fees	97,260	617,000	16%	215,510
Loan Proceeds	0	1,654,000	0%	0
Grant Proceeds	17,465	0	-	1,236,531
Marin County Club Loan Principal Pmts	(393)	40,000	-1%	(390)
Caltrans AEEP Capital Contribution	0	0	-	0
MMWD AEEP Capital Contribution	0	170,000	0%	0
Transfers In from Capital Expansion Fund	0	0		0
Capital Equipment Expenditures	(1,229,107)	(1,033,000)	119%	(397,005)
Capital Improvement Projects	(3,809,783)	(6,070,000)	63%	(8,750,614)
Capital Plan Variance Adjustment	0	913,000	-	0
Bond & Loan Principal Payments	(3,628,785)	(3,636,000)	100%	(3,167,333)
Change in Working Capital	(1,710,604)			(753,393)
TOTAL OTHER SOURCES/(USES)	($5,512,522)	($2,872,000)	192%	($7,537,071)
CASH INCREASE/(DECREASE)	($4,029,804)	($1,310,000)	308%	($7,588,454)

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NORTH MARIN WATER DISTRICT
INCOME STATEMENT AND CASH FLOW BY SERVICE AREA
FOR THE PERIOD ENDING JUNE 30, 2026

SUMMARY INCOME STATEMENT	TOTAL	NOVATO WATER	NOVATO RECYCLED	WEST MARIN WATER	OCEANA MARIN SEWER
Operating Revenue	$31,681,718	$28,198,303	$1,835,445	$1,267,404	$380,566
Operating Expense	30,582,672	27,292,082	1,596,065	1,198,066	496,459
OPERATING INCOME/(LOSS)	$1,099,046	$906,221	$239,380	$69,338	($115,893)
Non-Operating Revenue/(Expense)	383,672	518,969	(48,414)	(53,624)	(33,260)
NET INCOME/(LOSS)	$1,482,718	$1,425,190	$190,966	$15,714	($149,153)
CAPITAL CONTRIBUTIONS					
Developer In-Kind Contributions	$1,498,409	$1,496,976	$0	$1,556	($124)
Connection Fees	97,260	91,680	0	5,580	0
Grant Proceeds	17,465	17,397	0	68	0
FRC Transfer	0	0	0	0	0
CAPITAL CONTRIBUTIONS	$1,613,134	$1,606,053	$0	$7,204	($124)
Prior Period Adjustments	0	0	0	0	0
CHANGE IN NET POSITION	$3,095,851	$3,031,244	$190,966	$22,918	($149,276)
Net Position June 30, 2025	132,347,706	94,829,646	26,438,388	7,960,021	3,119,652
Net Position June 30, 2026	$135,443,558	$97,860,890	$26,629,354	$7,982,939	$2,970,375

CASH FLOW STATEMENT					
Net Income/(Loss)	$1,482,718	$1,425,190	$190,966	$15,714	($149,153)
Add back Depreciation	4,751,425	3,586,800	795,474	291,622	77,529
Cash Generated From Operations	$6,234,143	$5,011,990	$986,440	$307,336	($71,623)
Other Sources (Uses) of Funds					
Connection Fee Revenue	$97,260	$91,680	$0	$5,580	$0
Loan Proceeds	0	0	0	0	0
Grant Proceeds	17,465	17,397	0	68	0
Capital Assets Acquisition	(5,038,890)	(4,457,004)	(13,272)	(554,344)	(14,270)
Caltrans AEEP Capital Contribution	0	0	0	0	0
Marin Country Club Loan Principal Pmts	(393)	0	(393)	0	0
Principal Paid on Debt	(3,628,785)	(2,487,089)	(990,620)	(151,076)	0
Consumer Receivables Decr (Incr)	(259,319)	(122,270)	(119,552)	(12,104)	(5,393)
Construction Advances (Decr) Incr	(259,657)	(132,192)	0	(125,089)	(2,376)
Other Assets Decr (Incr)	(608,660)	(797,947)	39,607	29,700	119,980
Other Liabilities (Decr) Incr	(287,829)	(325,711)	(2,731)	23,318	17,294
Trade Accounts Payable (Decr) Incr	(295,139)	(295,139)	0	0	0
Connection Fee Transfer	0	0	0	0	0
Interdistrict Transfers	0	0	0	0	0
Interdistrict Loan Due To (From)	0	(80,149)	0	80,149	0
Total Other Sources (Uses)	($10,263,948)	($8,588,422)	($1,086,962)	($703,799)	$115,234
Net Cash Provided (Used)	($4,029,804)	($3,576,431)	($100,521)	($396,462)	$43,611
MV Cash & Investments June 30, 2025	$21,681,274	$13,895,140	$7,169,220	$396,463	$220,451
MV Cash & Investments June 30, 2026	$17,651,469	$10,318,709	$7,068,699	$0	$264,062

NOVATO WATER
DETAIL INCOME STATEMENT
FOR THE PERIOD ENDING JUNE 30, 2026

	JUNE 2026	YEAR TO DATE ACTUAL	YTD/ BUDGET%	PRIOR YTD ACTUAL
OPERATING REVENUE				
Water Sales	$1,859,092	$19,044,655	102%	$18,716,592
Bill Adjustments	(12,844)	(157,505)	85%	(159,133)
Bimonthly Service Charges	749,600	8,846,593	101%	8,331,654
Account Turn-on Charges	6,540	89,940	102%	83,065
New Account Charges	305	3,445	86%	3,795
Returned Check Charges	9	252	-	216
Hydrant Meter Up/Down Charges	200	2,060	103%	2,200
Backflow Service Charges	14,863	177,016	103%	173,947
Lab Service-Outside Clients	13,123	46,419	119%	44,256
Wheeling Charges - MMWD	7,792	125,020	102%	128,938
Other Operating Income	0	493	-	0
Regulation 15 Forfeiture	19,915	19,915	-	55,390
TOTAL OPERATING REVENUE	$2,658,594	$28,198,303	102%	$27,380,920
TOTAL EXPENDITURES				
SOURCE OF SUPPLY				
Supervision & Engineering	$845	$21,133	352%	$7,253
Operating Expense - Source	981	13,286	74%	15,869
Maint/Monitoring of Dam	183	11,175	37%	50,489
Maint of Lake & Intakes	0	11,175	140%	5,223
Maint of Structures	0	(10)	-1%	684
Maint of Watershed	0	5,569	14%	1,210
Water Quality Surveillance	0	1,480	74%	1,985
Fishery Maint	0	0	0%	616
Purchased Water	856,168	7,797,232	109%	8,607,003
Permits, Fines & Penalties	0	137,645	80%	3,170
GASB68 Adjustment	0	0	0%	3,336
GASB75 Adjustment (OPEB)	0	0	-	(100)
SOURCE OF SUPPLY	$858,177	$7,998,682	108%	$8,696,737
PUMPING				
Maint of Structures & Grounds	$10,372	$85,381	194%	$55,457
Maint of Pumping Equipment	4,579	76,734	54%	105,049
Electric Power	62,192	648,033	99%	614,971
GASB68 Adjustment (Pension)	0	0	0%	8,535
GASB75 Adjustment (OPEB)	0	0	-	(256)
PUMPING	$77,143	$810,148	95%	$783,756
OPERATIONS				
Supervision & Engineering	$29,564	$316,026	61%	$463,517
Operating Expense - Operations	81,649	730,128	88%	746,294
Maintenance Expense	5,862	90,920	115%	87,329
Telemetry Equipment/Controls Maint	1,927	101,189	90%	99,382
Leased Lines	1,102	13,730	51%	26,245
GASB68 Adjustment (Pension)	0	0	0%	117,028
GASB75 Adjustment (OPEB)	0	0	-	(3,519)
OPERATIONS	$120,105	$1,251,994	68%	$1,536,276

NOVATO WATER
DETAIL INCOME STATEMENT
FOR THE PERIOD ENDING JUNE 30, 2026

	JUNE 2026	YEAR TO DATE ACTUAL	YTD/ BUDGET%	PRIOR YTD ACTUAL
WATER TREATMENT				
Supervision & Engineering	$13,100	$128,537	52%	$316,749
Operating Expense - Water Treatment	18,725	306,061	82%	235,515
Purification Chemicals	315,643	650,630	183%	347,864
Sludge Disposal	21,959	166,295	198%	64,145
Maint of Structures & Grounds	9,657	113,227	210%	52,433
Maint of Purification Equipment	26,607	282,482	86%	203,572
Electric Power	16,893	171,317	82%	153,643
Water Quality Programs	6,899	153,749	65%	213,052
Laboratory Direct Labor	54,196	646,348	122%	535,004
Lab Service-Outside Clients	6,573	41,760	64%	43,890
Water Quality Supervision	5,104	150,246	104%	137,497
Laboratory Supplies & Expense	(1,291)	112,936	188%	125,379
Customer Water Quality	17,972	73,551	139%	74,763
Lab Cost Distributed	(493)	(39,665)	51%	(63,029)
GASB68 Adjustment (Pension)	0	0	0%	175,003
GASB75 Adjustment (OPEB)	0	0	-	(5,263)
WATER TREATMENT	$511,543	$2,957,473	94%	$2,610,215
TRANSMISSION & DISTRIBUTION				
Supervision & Engineering	$97,037	$976,588	136%	$790,936
Maps & Records	9,568	199,225	94%	194,455
Operation of T&D System	8,903	149,151	103%	141,190
Facilities Location	20,258	209,443	109%	195,990
Safety: Construction & Engineering	1,314	75,947	125%	45,633
Customer Service Expense	15,169	173,225	88%	185,748
Flushing	0	25,635	38%	74,738
Storage Facilities Expense	35,563	198,309	103%	226,687
Cathodic Protection	4,896	8,723	291%	4,446
Maint of Valves/Regulators	53,903	314,952	199%	158,415
Maint of Mains	13,358	274,801	70%	169,715
Leak Detection - Mains	1,458	26,606	95%	24,536
Backflow Prevention Program	34,144	359,607	90%	396,149
Maint of Copper Services	8,432	191,109	61%	292,682
Maint of PB Service Lines	21,488	270,112	72%	308,692
Single Service Installations	(2,139)	86,295	240%	66,654
Maint of Meters	25,723	287,676	93%	600,781
Detector Check Assembly Maint	756	218,567	106%	214,666
Maint of Hydrants	1,782	104,876	362%	18,875
GASB68 Adjustment (Pension)	0	0	0%	275,748
GASB75 Adjustment (OPEB)	0	0	-	(8,293)
TRANSMISSION & DISTRIBUTION	$351,614	$4,150,848	86%	$4,378,443

NOVATO WATER
DETAIL INCOME STATEMENT
FOR THE PERIOD ENDING JUNE 30, 2026

	JUNE 2026	YEAR TO DATE ACTUAL	YTD/ BUDGET%	PRIOR YTD ACTUAL
CONSUMER ACCOUNTING				
Meter Reading	$1,786	$24,591	91%	$24,619
Collection Expense - Labor	3,157	42,201	114%	39,594
Collection Expense - Agency	0	424	42%	481
Billing & Consumer Accounting	16,391	198,367	103%	189,246
Contract Billing	1,432	17,463	103%	16,857
Stationery, Supplies & Postage	6,417	77,479	98%	75,214
Online Payment Processing Fees	20,060	128,514	110%	109,188
Lock Box Service	1,133	12,209	111%	10,992
Uncollectable Accounts	11,011	30,759	81%	31,117
Office Equipment Expense	309	80,472	115%	73,259
Distributed to West Marin (4.1%)	(2,087)	(24,554)	-	(22,605)
GASB68 Adjustment (Pension)	0	0	0%	2,059
GASB75 Adjustment (OPEB)	0	0	-	(62)
CONSUMER ACCOUNTING	$59,608	$587,925	90%	$549,960
WATER CONSERVATION				
Residential	$20,700	$239,172	101%	$221,806
Commercial	2,518	14,152	94%	14,728
Public Outreach/Information	36,243	241,690	109%	226,094
Large Landscape	4,404	8,691	217%	3,633
GASB68 Adjustment (Pension)	0	0	0%	26,780
GASB75 Adjustment (OPEB)	0	0	-	(805)
TOTAL WATER CONSERVATION	$63,865	$503,704	92%	$492,236
GENERAL AND ADMINISTRATIVE				
Directors Fees	$2,910	$42,711	102%	$37,467
Legal Fees	358	22,620	119%	$26,263
Human Resources	17,292	173,434	59%	198,717
Auditing Fees	0	35,910	124%	21,600
Consulting Services/Studies	35,295	471,917	93%	397,581
General Office Salaries	142,811	1,700,177	105%	1,664,968
Safety: General District Wide	3,897	54,936	131%	41,507
Office Supplies	1,216	25,249	110%	24,408
Employee Events	2,006	17,536	92%	12,506
Other Administrative Expense	30	617	-	1,185
Election Cost	0	0	-	30,707
Dues & Subscriptions	1,825	85,094	92%	85,702
Vehicle Expense	676	8,112	101%	8,112
Meetings, Conferences & Training	7,760	228,196	113%	169,640
Recruitment Expense	228	2,336	17%	15,033
Gas & Electricity	7,436	71,482	650%	4,201
Telephone	5,007	19,866	105%	19,041
Water	491	2,915	97%	2,544
Buildings & Grounds Maint	10,041	216,896	249%	54,220
Office Equipment Expense	18,337	265,683	114%	774,577
Insurance Premiums & Claims	27,731	301,143	88%	415,421
Retiree Medical Benefits	20,796	259,794	98%	258,762
Expensed Equipment Purchases	0	0	-	0
(Gain)/Loss on Overhead Charges	(29,665)	130,638	44%	(303,567)
G&A Applied to Other Operations (5.9%)	(20,838)	(286,386)	129%	(234,575)
G&A Applied to Construction	(48,465)	(590,384)	81%	(670,869)
GASB75 Adjustment (OPEB)	0	0	-	(7,798)
GASB68 Adjustment (Pension)	184,729	2,184,015	3.4	2,257,530
GENERAL & ADMINISTRATIVE	$391,903	$5,444,508	1.4	$5,304,882
Depreciation (Note 5)	307,254	3,586,800	108%	2,977,901
TOTAL OPERATING EXPENSE	$2,741,212	$27,292,082	103%	$27,330,405
OPERATING INCOME/(LOSS)	($82,618)	$906,221	70%	$50,515

NOVATO WATER
DETAIL INCOME STATEMENT
FOR THE PERIOD ENDING JUNE 30, 2026

	JUNE 2026	YEAR TO DATE ACTUAL	YTD/ BUDGET%	PRIOR YTD ACTUAL
NON-OPERATING REVENUE				
Interest:				
General Funds	$133,153	$389,815	172%	$564,076
Retiree Medical Insurance Fund	4,035	133,778	154%	174,494
Interest Revenue-Leases	2,080	9,772	109%	10,507
CLAM Loan for West Marin House	2,060	12,582	-	0
Admin Bldg/CIP Project Fund	0	0	0%	47,363
Funds Held in County Treasury	10,975	32,983	85%	67,816
West Marin/OM Loan from Novato	0	30,472	152%	22,553
MMWD Interconnection Agreement Loan	0	39,586		43,965
Total Interest Revenue	$152,304	$648,988	139%	$930,773
Rents & Leases	12,947	41,537	53%	72,473
Tax Proceeds	6,184	151,006	99%	146,105
Other Non-Operating Revenue	58,398	537,664	67%	38,770
Gain/(Loss) on MV of Investments	(16,141)	(49,306)	-	47,387
NON-OPERATING REVENUE	$213,692	$1,329,888	89%	$1,235,508
NON-OPERATING EXPENSE				
Bank of Marin AEEP Loan Interest Exp	$6,726	$87,545	99%	$100,778
STP SRF Loan Interest Expense	7,418	89,014	100%	111,447
JP Morgan/Chase AMI Loan Interest Expense	5,335	69,491	97%	77,563
Webster Bank Loan Interest Expense	43,513	538,759	98%	563,164
Other Non-Operating Expense	49	26,109	163%	636,277
NON-OPERATING EXPENSE	$63,041	$810,919	100%	$1,489,229
NET INCOME/(LOSS)	$68,033	$1,425,190	72%	($203,206)
BEGINNING FUND EQUITY		$94,829,646		$94,186,088
NET INCOME/(LOSS)	68,033	1,425,190		(203,206)
CONTRIBUTED CAPITAL				
Water Conservation Grants	4,390	17,397		46,775
Developer 'In-Kind' Contributions	(59,800)	1,496,976		823,783
Caltrans AEEP Capital Contribution	0	0		0
MMWD AEEP Capital Contribution	0	0		0
Facility Reserve Charges	7,640	91,680		153,690
2% @ 55 Fund Interest	0	0		0
FRC Transfer to/from Recycled Water	0	0		0
Prior Period Adjustment (Note 12)	0	0		(177,484)
ENDING FUND EQUITY		$97,860,890		$94,829,646

NOVATO RECYCLED WATER
DETAIL INCOME STATEMENT
FOR THE PERIOD ENDING JUNE 30, 2026

	JUNE 2026	YEAR TO DATE ACTUAL	YTD/ BUDGET%	PRIOR YTD ACTUAL
OPERATING REVENUE				
Recycled Water Sales	$117,103	$1,482,812	97%	$1,494,723
Bill Adjustments	0	0	0%	(577)
Bimonthly Service Charges	21,349	335,398	105%	300,371
Water Loads	2,000	17,160	78%	24,800
Account Turn-on Charges	0	75	-	75
TOTAL OPERATING REVENUE	$140,452	$1,835,445	98%	$1,819,392
OPERATING EXPENSE				
SOURCE OF SUPPLY				
Purchased Water - NSD	105,425	330,663	109%	328,881
Purchased Water - LGVSD	12,770	49,882	83%	41,571
Permits, Fines & Penalties	0	1,500	-	0
SOURCE OF SUPPLY	$118,195	$382,045	105%	$370,452
PUMPING				
Maint of Pumping Equipment	0	0	0%	0
Electric Power	915	6,050	151%	4,843
GASB68 Adjustment (Pension)	0	0	-	2,943
GASB75 Adjustment (OPEB)	0	0	-	(89)
PUMPING	$915	$6,050	60%	$7,697
OPERATIONS				
Supervision & Engineering	$0	$3,085	16%	$10,677
Operating Expense - Operations	0	211	4%	1,937
Potable Water Consumed	91,205	250,628	291%	138,812
Maintenance Expense	1,531	9,114	182%	14,705
Telemetry Equipment/Controls Maint	0	0	0%	2,505
GASB68 Adjustment (Pension)	0	0	0%	294
GASB75 Adjustment (OPEB)	0	0	-	(9)
OPERATIONS	$92,737	$263,037	214%	$168,922
WATER TREATMENT				
Supervision & Engineering	0	0	-	$21
Maint of Purification Equipment	0	101	5%	1,458
Electric Power	0	0	0%	0
Laboratory Direct Labor	0	282	28%	1,481
Water Quality Supervision	0	0	0%	0
Lab Expense Distributed from Novato	(9)	149	7%	1,045
GASB68 Adjustment (Pension)	0	0	0%	6,474
GASB75 Adjustment (OPEB)	0	0	-	(195)
WATER TREATMENT	($9)	$531	6%	$10,284
TRANSMISSION & DISTRIBUTION				
Supervision & Engineering	$0	$0	0%	$4,771
Operation of T&D System	732	4,030	202%	1,240
Customer Service Expense	574	12,059	93%	15,647
Storage Facilities Expense	1,468	7,066	79%	13,687
Maint of Mains	0	3,800	10%	24,599
Maint of PB Service Lines	0	0	0%	1,503
Maint of Meters	0	0	0%	0
GASB68 Adjustment (Pension)	0	0	0%	4,120
GASB75 Adjustment (OPEB)	0	0	-	(124)
TRANSMISSION & DISTRIBUTION	$2,775	$26,956	30%	$65,443

NOVATO RECYCLED WATER
DETAIL INCOME STATEMENT
FOR THE PERIOD ENDING JUNE 30, 2026

	JUNE 2026	YEAR TO DATE ACTUAL	YTD/ BUDGET%	PRIOR YTD ACTUAL
CONSUMER ACCOUNTING				
Distributed from Novato (0.2%)	$211	$2,371	119%	$2,128
CONSUMER ACCOUNTING	$211	$2,371	119%	$2,128
GENERAL AND ADMINISTRATIVE				
Dues & Subscriptions	$0	$5,000	100%	$12,645
Distributed from Novato (2.4%)	6,582	90,459	122%	77,788
GASB68 Adjustment	2,029	24,142	-	20,514
GENERAL & ADMINISTRATIVE	$8,611	$119,601	151%	$110,948
Depreciation (Note 5)	$66,290	$795,474	100%	$791,366
TOTAL OPERATING EXPENSE	$289,723	$1,596,065	109%	$1,527,240
OPERATING INCOME/(LOSS)	($149,271)	$239,380	59%	$292,152
NON-OPERATING REVENUE				
Interest:				
General Funds	$6,636	$232,122	157%	$287,398
StoneTree RWF Loan	787	9,640	193%	10,030
Total Interest Revenue	$7,424	$241,763	158%	$297,428
Other Non-Operating Revenue	0	0	-	0
NON-OPERATING REVENUE	$7,424	$241,763	158%	$297,428
NON-OPERATING EXPENSE				
RWF SRF Loan Interest Expense	$1,055	$12,664	106%	$18,774
Expansion SRF Loan Interest Expense	5,788	152,597	95%	166,808
Capital Contribution Expense-NSD&LGVSD	0	124,916	22%	0
GASB68 Adjustment	0	0	-	0
NON-OPERATING EXPENSE	$6,843	$290,176	39%	$185,582
NET INCOME/(LOSS)	($148,691)	$190,966	(100%)	$403,998
BEGINNING FUND EQUITY		$26,438,388		$26,034,390
NET INCOME/(LOSS)	(148,691)	190,966		403,998
FRC Transfer to/from Novato	0	0		0
Prior Period Adjustment (Note 12)	0	0		0
ENDING FUND EQUITY		$26,629,354		$26,438,388

WEST MARIN WATER
DETAIL INCOME STATEMENT
FOR THE PERIOD ENDING JUNE 30, 2026

	JUNE 2026	YEAR TO DATE ACTUAL	YTD/ BUDGET%	PRIOR YTD ACTUAL
OPERATING REVENUE				
Water Sales	$103,157	$933,889	101%	$897,095
Bill Adjustments	(480)	(18,755)	57%	(38,395)
Bimonthly Service Charges	26,138	339,768	90%	300,149
Account Turn-on Charges	360	2,480	124%	2,095
New Account Charges	25	110	-	90
Returned Check Charges	0	27	-	9
Hydrant Meter Up/Down Charges	0	0	-	100
Backflow Service Charges	1,707	9,886	124%	9,350
TOTAL OPERATING REVENUE	$130,907	$1,267,404	99%	$1,170,493
OPERATING EXPENSE				
SOURCE OF SUPPLY				
Supervision & Engineering	$166	$4,932	123%	$2,417
Operating Expense	28	560	14%	2,810
Maint of Structures	0	96	2%	9,196
Maint of Watershed	0	0	0%	0
Permits, Fines & Penalties	0	19,672	86%	1,137
GASB68 Adjustment (Pension)	0	0	0%	490
GASB75 Adjustment (OPEB)	0	0	-	(14)
SOURCE OF SUPPLY	$194	$25,260	65%	$16,036
PUMPING				
Maint of Structures and Grounds	$0	$11,098	277%	$6,305
Maint of Pumping Equip	290	6,830	98%	4,753
Electric Power	8,420	81,962	93%	90,141
GASB68 Adjustment (Pension)	0	0	0%	490
GASB75 Adjustment (OPEB)	0	0	-	(14)
PUMPING	$8,710	$99,890	94%	$101,676
OPERATIONS				
Supervision & Engineering	$387	$16,419	57%	$26,384
Operating Expense	1,176	16,199	74%	17,734
Maintenance Expense	0	142	14%	356
Maint of Telemetry Equipment	1,837	22,711	108%	20,098
Leased Lines	314	3,523	59%	5,116
GASB68 Adjustment (Pension)	0	0	0%	6,180
GASB75 Adjustment (OPEB)	0	0	-	(186)
OPERATIONS	$3,715	$58,993	59%	$75,681
WATER TREATMENT				
Supervision & Engineering	$1,693	$18,765	75%	$23,011
Operating Expense	2,948	47,604	77%	62,550
Purification Chemicals	0	5,857	73%	5,928
Maint of Structures & Grounds	0	5,592	56%	7,696
Maint of Purification Equipment	526	18,059	62%	22,251
Water Quality Programs	0	603	-	548
Electric Power	1,202	14,423	76%	23,335
Laboratory Direct Labor	5,011	68,324	98%	77,422
Laboratory Services	5,560	21,723	87%	23,323
Water Quality Supervision	426	6,944	99%	4,095
Customer Water Quality	4,565	11,399	142%	8,258
Lab Expense Distributed from Novato	532	36,057	75%	54,614
GASB68 Adjustment (Pension)	0	0	0%	21,385
GASB75 Adjustment (OPEB)	0	0	-	(643)
WATER TREATMENT	$22,464	$255,348	71%	$333,773

WEST MARIN WATER
DETAIL INCOME STATEMENT
FOR THE PERIOD ENDING JUNE 30, 2026

	JUNE 2026	YEAR TO DATE ACTUAL	YTD/ BUDGET%	PRIOR YTD ACTUAL
TRANSMISSION & DISTRIBUTION				
Supervision & Engineering	$5,001	$19,009	950%	$22,981
Operating Expense	0	502	-	0
Facilities Location - USA	0	13,644	171%	6,936
Customer Service Expense	982	7,219	56%	10,724
Flushing	0	14	0%	2,455
Storage Facilities Expense	2,591	45,924	121%	43,280
Cathodic Protection	0	669	67%	662
Maint of Valves	0	12,326	-	5,225
Valve Operation Program	6,844	10,736	-	0
Maint of Mains	6,874	11,736	65%	23,263
Backflow Dev Inspection/Survey	2,174	5,001	42%	16,395
Maint of Copper Services	0	7,345	122%	3,575
Maint of PB Service Lines	0	24,204	81%	35,250
Maint of Meters	0	4,698	78%	14,913
Detector Check Assembly Maint	0	3,114	-	523
Maint of Hydrants	2,516	3,181	-	0
Single Service Installation	0	8,425	-211%	(1,985)
GASB68 Adjustment (Pension)	0	0	0%	15,597
GASB75 Adjustment (OPEB)	0	0	-	(469)
TRANSMISSION & DISTRIBUTION	$26,982	$177,747	95%	$199,324
CONSUMER ACCOUNTING				
Meter Reading	$2,727	$13,206	78%	$17,082
Collection Expense - Labor	0	1,507	75%	2,034
Online Payment Processing Fees	0	(664)	-	(19)
Distributed from Novato (3.6%)	1,624	18,285	108%	$16,811
GASB68 Adjustment (Pension)	0	0	0%	1,765
GASB75 Adjustment (OPEB)	0	0	-	(53)
CONSUMER ACCOUNTING	$4,351	$32,334	79%	$37,619
WATER CONSERVATION				
Water Conservation Program	$734	$8,228	63%	$19,785
GASB68 Adjustment (Pension)	0	0	-	0
GASB75 Adjustment (OPEB)	0	0	-	0
TOTAL WATER CONSERVATION	$734	$8,228	63%	$19,785
GENERAL AND ADMINISTRATIVE				
Legal Fees	$0	$3,622	-	$0
Consulting Services/Studies	0	1,337	2%	70,672
Distributed from Novato (3.6%)	10,063	138,302	126%	117,590
GASB68 Adjustment (Pension)	10,129	105,384	-	115,025
GENERAL & ADMINISTRATIVE	$20,193	$248,644	134%	$303,287
Depreciation (Note 5)	24,361	291,622	101%	254,571
TOTAL OPERATING EXPENSE	$111,703	$1,198,066	91%	$1,341,752
OPERATING INCOME/(LOSS)	$19,204	$69,338	(144%)	($171,259)

WEST MARIN WATER
DETAIL INCOME STATEMENT
FOR THE PERIOD ENDING JUNE 30, 2026

	JUNE 2026	YEAR TO DATE ACTUAL	YTD/ BUDGET%	PRIOR YTD ACTUAL
NON-OPERATING REVENUE				
Interest - General Funds	$0	$3,414	49%	$22,628
Interest Revenue-Leases	0	191	-	371
Rents & Leases	0	5,285	88%	5,285
Other Non-Operating Revenue	0	(28,671)	-	3,000
NON-OPERATING REVENUE	$0	($19,780)	-152%	$31,284
NON-OPERATING EXPENSE				
Bank of Marin Loan Interest Expense	$987	$12,851	99%	$14,793
Loan from Novato-Interest Expense	1,666	19,993	100%	22,553
Other Non-Operating Expense	0	1,000	-	0
GASB68 Adjustment	0	0	-	0
NON-OPERATING EXPENSE	$2,653	$33,844	103%	$37,346
NET INCOME/(LOSS)	$16,550	$15,714	(23%)	($177,321)
BEGINNING FUND EQUITY		$7,960,021		$7,848,498
NET INCOME/(LOSS)	16,550	15,714		(177,321)
CONTRIBUTED CAPITAL				
Water Conservation Grants	68	68		425
New Gallagher Well #2 Grant	0	0		(1,188)
Developer 'In-Kind' Contributions	4,070	1,556		257,787
Facility Reserve Charges	0	5,580		31,820
PRIOR YEAR ADJUSTMENTS (Note 11c)	0	0		0
ENDING FUND EQUITY		$7,982,939		$7,960,021

OCEANA MARIN SEWER
DETAIL INCOME STATEMENT
FOR THE PERIOD ENDING JUNE 30, 2026

	JUNE 2026	YEAR TO DATE ACTUAL	YTD/ BUDGET%	PRIOR YTD ACTUAL
OPERATING REVENUE				
Sewer Service Charges	$30,785	$378,066	100%	$347,256
Inspection Fees	0	2,500	250%	300
TOTAL OPERATING REVENUE	$30,785	$380,566	101%	$347,556
OPERATING EXPENSE				
SEWAGE COLLECTION				
Supervision & Engineering	$4,869	$24,475	68%	$31,615
Inspection	0	792	-	81
Operating Expense	4,004	9,071	113%	3,079
Facilities Location	0	0	0%	1,277
Maint of Telemetry Equipment	88	1,066	53%	1,505
Maint of Lift Stations	2,613	25,248	133%	18,708
Maint of Manholes	448	21,233	85%	0
Maint of Sewer Mains	37,270	41,770	220%	4,334
Electric Power	2,215	30,482	122%	25,168
GASB68 Adjustment (Pension)	0	0	0%	3,825
GASB75 Adjustment (OPEB)	0	0	-	(115)
SEWAGE COLLECTION	$51,507	$154,136	106%	$89,477
SEWAGE TREATMENT				
Supervision & Engineering	$0	$268	-	$3,336
Operating Expense	879	11,859	21%	60,290
Treatment Supplies & Expense	1,771	5,320	-	1,754
Maint of Structures	0	0	0%	0
Maint of Equipment	415	4,209	210%	3,613
Laboratory Direct Labor	336	6,556	-	10,449
Lab Expense Distributed from Novato	(30)	3,460	18%	7,370
Electric Power	2,192	11,770	168%	5,166
Permits, Fines & Penalties	0	33,055	94%	0
GASB68 Adjustment (Pension)	0	0	0%	4,513
GASB75 Adjustment (OPEB)	0	0	-	(136)
SEWAGE TREATMENT	$5,563	$76,496	59%	$96,355
SEWAGE DISPOSAL				
Operating Expense	$6,976	$48,984	169%	$29,917
Maint of Pump Stations	0	10,581	96%	7,215
Maint of Storage Ponds	92	21,383	214%	9,155
Maint of Irrigation Field	0	4,843	121%	0
GASB68 Adjustment (Pension)	0	0	0%	45,124
GASB75 Adjustment (OPEB)	0	0	-	(1,357)
SEWAGE DISPOSAL	$7,068	$85,791	141%	$90,054
CONSUMER ACCOUNTING				
Collection Expense - County of Marin	$0	$478	-	$474
Distributed from Novato (0.6%)	253	3,898	97%	3,666
CONSUMER ACCOUNTING	$253	$4,376	109%	$4,140

OCEANA MARIN SEWER
DETAIL INCOME STATEMENT
FOR THE PERIOD ENDING JUNE 30, 2026

	JUNE 2026	YEAR TO DATE ACTUAL	YTD/ BUDGET%	PRIOR YTD ACTUAL
GENERAL AND ADMINISTRATIVE				
Consulting Services/Studies	$4,280	$6,163	12%	$0
Distributed from Novato (1.1%)	$4,193	$57,626	156%	$39,197
Liability Insurance	0	2,855	95%	2,679
GASB68 Adjustment	2,638	31,488	-	33,588
GENERAL AND ADMINISTRATIVE	$11,111	$98,132	109%	$75,464
Depreciation (Note 5)	9,773	77,529	125%	55,785
TOTAL OPERATING EXPENSE	$85,275	$496,459	101%	$411,275
OPERATING INCOME/(LOSS)	($54,490)	($115,893)	102%	($63,719)
NON-OPERATING REVENUE				
Rents & Leases	$0	$250	-	$250
Interest - General Funds	242	5,656	113%	0
Other Non-Operating Revenue/Expense	0	(28,687)	-	(1,384)
NON-OPERATING REVENUE	$242	($22,781)	-456%	($1,134)
NON-OPERATING EXPENSE				
Loan from Novato-Interest Expense	873	10,479		0
Other Non-Operating Expense	$0	$0	-	$10,000
NON-OPERATING EXPENSE	$873	$10,479	-	$10,000
NET INCOME/(LOSS)	($55,121)	($149,153)	137%	($74,853)
BEGINNING FUND EQUITY		$3,119,652		$1,974,377
NET INCOME/(LOSS)	(55,121)	(149,153)		(74,853)
CONTRIBUTED CAPITAL				
Contribution in Aid of Construction	0	(124)		(391)
Sewer Facilities Connection Charges	0	0		30,000
FEMA/CAL OES Grant-OM Treatment Pond	0	0		1,190,519
PRIOR YEAR ADJUSTMENTS (Note 11d)	0	0		0
ENDING FUND EQUITY		$2,970,375		$3,119,652

NORTH MARIN WATER DISTRICT
VEHICLE FLEET ANALYSIS
FOR PERIOD ENDING June 30, 2026

					Fiscal Year to Date					Vehicle Cost per Mile		
	Year	Description	Veh#	Assigned	Mileage	Expense[1]	Recovery [2]	Gain/(Loss)	Mileage	Life to Date	FYTD26	FYTD25
1	2014	Ford F150	517	Kurfirst	3,783	$1,532	$7,116	$5,583	**43,141**	$0.59	$0.41	$0.92
2	2015	Ford F250 4x4	518	Construction/Pool	3,861	$2,642	$2,814	$172	**128,797**	$0.50	$0.68	$0.62
3	2015	Ford F150 4X4	521	Construction/Pool	4,036	$2,200	$2,702	$502	**75,228**	$0.43	$0.55	$0.84
4	2016	Nissan Frontier	522	Lab	2,054	$868	$1,568	$700	**78,942**	$0.44	$0.42	$1.57
5	2016	Nissan Frontier	524	Construction/Pool	3,293	$2,271	$1,831	($441)	**78,043**	$0.56	$0.69	$0.41
6	2018	Ford Cargo Van	526	On-Call Construction	9,497	$4,109	$511	($3,598)	**78,111**	$0.46	$0.43	$2.88
7	2018	Dodge Ram 2500	527	Corda	3,646	$4,366	($14)	($4,380)	**81,485**	$0.68	$1.20	$0.94
8	2019	Chev Colorado 4x4	528	STP	7,581	$3,501	$1,596	($1,905)	**40,661**	$0.54	$0.46	$0.70
9	2021	Nissan Rogue	541	Roberto	2,980	$555	$1,339	$784	**34,148**	$0.30	$0.19	$0.38
10	2021	Nissan Frontier	542	STP	7,001	$2,488	$2,667	$179	**45,014**	$0.48	$0.36	$0.81
11	2021	Ford Ranger 4x4	543	STP	2,905	$1,120	$1,085	($35)	**33,309**	$0.35	$0.39	$0.33
12	2020	Ford F150	544	Kennedy	4,706	$1,330	$1,992	$661	**9,179**	$0.35	$0.28	$0.85
13	2021	Ford F150	545	Construction/Pool	3,672	$1,022	$1,841	$819	**14,092**	$0.35	$0.28	$0.75
14	2021	Ford F150 4x4	546	Engineering	1,385	$1,073	$1,759	$686	**25,945**	$0.30	$0.77	$0.38
15	2022	Chevy Bolt EUV	548	LAB	6,668	$58	$2,890	$2,833	**25,895**	$0.08	$0.01	$1.09
16	2023	Chevy Bolt EUV	549	Executive Pool	8,848	$432	$1,228	$796	**38,592**	$0.06	$0.05	$2.22
17	2022	Ford Ranger 4x4	550	Davenport	10,620	$3,864	$11,501	$7,637	**39,308**	$0.39	$0.36	$0.19
18	2022	Ford Ranger 2WD	551	Lawrence	13,398	$6,251	$7,875	$1,624	**20,712**	$0.48	$0.47	$0.00
19	2022	Ford Ranger 2WD	552	Castellucci	12,277	$3,057	$11,536	$8,479	**46,320**	$0.29	$0.25	$0.02
20	2022	Ford Ranger 2WD	553	Pirinjian	5,526	$1,798	$10,934	$9,136	**24,495**	$0.40	$0.33	$0.36
21	2023	Ford Ranger 4x4	554	Hanson	11,285	$3,871	$4,575	$704	**34,900**	$0.47	$0.34	$0.27
22	2024	FORD F250 4X4 #556	556	Watkins	7,925	$5,205	$2,079	($3,126)	**21,013**	$0.89	$0.66	$1.71
23	2024	FORD F250 4X4 #557	557	Breit	19,562	$9,696	$10,514	$818	**46,848**	$0.55	$0.50	$0.26
24	2025	NISSAN ROGUE S AWD	558	Engineering	1,203	$191	$1,015	$824	**2,294**	$0.24	$0.16	$0.00
25	2024	FORD F-150 XL 4x4	560	Lebrun	6,047	$1,466	$4,214	$2,748	**7,411**	$0.27	$0.24	$0.00
26	2025	FORD F250 4X4 #561	561	Northen	16,010	$10,830	$7,798	($3,032)	**16,490**	$0.66	$0.68	$0.00
27	2025	FORD F250 4X4 #562	562	STP	5,248	$11,569	$1,869	($9,700)	**5,582**	$2.07	$2.20	$0.00
28	2025	FORD F150 4x4 #563	563	Bergstrom	8,452	$3,963	$8,733	$4,770	**8,452**	$0.47	$0.47	$0.00
29	2025	FORD F150 XL	566	Kehoe	4,342	$5,348	$623	($4,725)	**4,342**	$1.23	$1.23	$0.00
30	2026	FORD F250 SVC BODY	567	Williamson	3,114	$9,324	$3,017	($6,307)	**3,114**	$2.99	$2.99	$0.00
31	2026	FORD F250 SVC BODY	568	Pearce	2,618	$16,953	$1,491	($15,462)	**2,618**	$6.48	$6.48	$0.00
				Total 3/4 Ton & Under	**203,543**	**122,953**	**120,696**	**(2,257)**	**1,114,481**	**$0.49**	**$0.60**	**$0.47**
1	1999	Ford F350 W/Svc Body	19	Pool	1,102	$1,459	$1,148	($311)	**141,884**	$0.84	$1.32	$0.00
2	2002	Int'l 5 Yd Dump	44	Construction	2,935	$2,565	$2,051	($514)	**121,461**	$1.86	$0.87	$2.02
3	2012	Int'l 5 Yd Dump	514	Construction	7,426	$7,464	$12,355	$4,891	**70,080**	$1.80	$1.01	$1.63
4	2015	Int'l 5 Yd Dump	519	McDonald	5,190	$15,278	$5,166	($10,112)	**67,334**	$1.65	$2.94	$2.78
5	2017	Ford F350 4x4	525	Lemos	14,595	$8,390	$18,032	$9,642	**77,025**	$0.78	$0.57	$0.62
6	2019	Ford F550 3 YD Dump	530	Construction	5,065	$9,507	$9,632	$125	**20,758**	$1.50	$1.88	$1.64
7	2021	Int'l 5 Yd Dump	547	Sjoblom	9,159	$10,353	$10,318	($35)	**17,197**	$1.68	$1.13	$1.86
8	2026	INTERNATIONAL MV 607	564	Construction	3,276	$18,343	$6,678	($11,665)	**3,276**	$2.10	$5.60	$0.00
9	2026	INTERNATIONAL MV 607	565	Construction	3,117	$25,363	$7,196	($18,167)	**3,117**	$6.66	$8.14	$0.00
				Total 1 Ton & Over	**51,865**	**$98,721**	**$72,576**	**($26,145)**	**$522,132**	**$1.35**	**$1.90**	**$1.82**

[1] Expense amount shown excludes depreciation (approximately $165,000 for FY26).

2 Recovery is the amount charged to projects and operations to recover the expense of owning and operating the vehicle. Commencing 7/1/17 the recovery rate for vehicles 3/4-ton and under is $7/hr and the recovery rate for vehicles 1-ton and over is $14/hr. An additional 50% is charged to developer projects to reflect the fair market value of the vehicle being used.

NORTH MARIN WATER DISTRICT
WATER CONSERVATION PROGRAM DETAIL
PERIOD ENDING JUNE 30, 2026

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				COST THRU JUNE 2025	JUNE 2026	FY 25/26 TOTAL	FY 25/26 BUDGET	(OVER) UNDER	TOTAL COST
			NOVATO						
			a. Residential						
1-7700-01	1-7700-26	1	Cash for Grass	$612,481	$1,594	$51,731	$70,000	$18,269	$664,212
1-7700-02	1-7700-27	2	Landscape Efficiency Rebates	47,341	739	4,077	6,000	1,923	51,418
1-7700-03		3	Fixtures Purchases	71,840	0	539	5,000	4,461	72,378
1-7700-06	1-7700-28	4	Washing Machine Rebates	376,615	383	1,935	5,000	3,065	378,551
1-7700-07		5	Demonstration Garden Improvements	55,105	0	182	0	(182)	55,288
1-7700-11	1-7700-29	6	Toilet Rebate-Residential	1,112,431	335	6,925	25,000	18,075	1,119,356
1-7700-12		7	Toilet Rebate - MF	130	0	0	0	0	130
1-7700-13		8	Residential Audits	508,394	3,631	6,230	20,000	13,770	514,624
1-7700-15		9	High Efficiency Toilet Distribution	242,197	0	0	0	0	242,197
1-7700-16		10	Water Waste Ordinance Monitoring	164,138	17	1,486	15,000	13,514	165,624
1-7700-17	1-7700-31	11	Swimming Pool Cover Rebate	16,889	660	3,188	5,000	1,812	20,077
1-7700-19	1-7700-32	12	ET Controller Rebate	64,952	443	2,601	6,000	3,399	67,554
1-7700-08		13	Administration	2,249,912	12,814	150,790	150,000	(790)	2,400,703
1-7700-20		14	New Development Wtr Cons Program	165,115	0	8,886	10,000	1,114	174,001
1-7700-21	1-7700-33	15	Demand Offset Rebate Program	7,129	60	409	2,000	1,591	7,538
1-7700-23		16	Grant Administration	3,300	0	0	1,000	1,000	3,300
1-7700-24	1-7700-34	17	Hot Water Recirculation Rebate	5,374	23	192	2,000	1,808	5,565
1-7700-25		18	Residential Fill Station	66,442	0	0	0	0	66,442
1-7705-02		19	Clothes Washer Rebate program	54,153	0	0	0	0	54,153
1-7700-35		20	Other Pipeline Improvements	16,733	0	0	0	0	16,733
			b. Non-Residential Programs						
1-7701-03	1-7701-04	1	Commercial Programs	80,831	2,518	14,152	16,000	1,848	94,983
1-7700-04			c. Public Outreach/Information	991,323	33,579	239,026	196,000	(43,026)	1,230,349
1-7702-01		1	Large Landscape Programs	58,727	4,404	8,691	13,000	4,309	67,418
1-7702-04		2	Large Landscape Irrigation Efficiency	1,121	0	0	0	0	1,121
1-7700-05		3	Marketing	5,584	2,664	2,664	0	(2,664)	8,248
			TOTAL NOVATO WATER CONSERVATION	$6,978,258	$63,865	$503,704	$547,000	$43,296	$7,481,963
			WEST MARIN WATER						
2-5166-00			a. Water Conservation Program	$225,142	$734	$8,228	$13,000	$4,772	$233,371
			TOTAL WEST MARIN WATER CONSERVATION	$225,142	$734	$8,228	$13,000	$4,772	$233,371

NORTH MARIN WATER DISTRICT

CAPITAL IMPROVEMENT PROJECTS

PERIOD ENDING JUNE 30, 2026

		Description	COST THRU JUNE 2025	JUNE 2026	FYTD TOTAL	FY 25/26 BUDGET	(OVER)/UNDER BUDGET	TOTAL COST
		1. PIPELINES						
		1a Pipeline Improvements						
		a. Main/Pipeline Replacements						
1-7195-00	1	Novato Blvd Widening Diablo to Grant	$180,376	$43,760	$387,507	$1,200,000	$812,493	$567,883
1-7150-00	2	Closed - San Mateo Tank Transmission Main	384,117	3,076	1,668,461	1,650,000	(18,461)	2,052,578
1-7216-00	3	Tamalpais Cr Sr Apts Fire Svc	847	0	19,790	0	(19,790)	20,637
		1b Pipeline Replacements						
1-8737-08	1	Closed - Repl 8" CI w/pvc-Railroad/Rose	$406,051	$0	$1,513	$0	($1,513)	$407,564
1-7212-00	2	Stafford Lake Park Service Line	4,464	0	3,104	0	(3,104)	7,568
1-7213-00	3	Closed - Olive Avenue Main Replacement	26,491	0	120	0	(120)	26,611
1-7215-00	4	System Wide PR Station Rehab	308,565	0	27,101	0	(27,101)	335,665
		1c Aqueduct Improvements						
		1d Pipeline Contingency						
	1	Sync w/ City or County Paving	$0	$0	$0	$10,000	$10,000	$0
	2	Pipeline Resiliency Improvements-(25' Master Plan)	0	0	0	200,000	200,000	0
	3	Polybutylene (PB) Service Line Replacements	0	0	0	10,000	10,000	0
		Subtotal Pipelines	$1,310,910	$46,836	$2,107,596	$3,070,000	$962,404	$3,418,506
		2. STORAGE TANKS & PUMP STATIONS						
		2a Tank Rehabiliation / Replacement						
1-6208-02	1	Closed - Dickson Tank Vent Replacement	$0	$30,688	$38,097	$40,000	$1,903	$38,097
		2b Pump Station Rehabilitation / Replacement						
1-6112-26	1	Lynwood PS Replacement	$614,132	$0	$12,435	$300,000	$287,565	$626,567
1-6141-00	2	Closed - Crest PS	2,404,534	0	21,396	30,000	8,604	2,425,931
1-6103-22	3	Cherryhill PS Retaining Wall Repair	232,495	5,843	228,219	260,000	31,781	460,715
	4	School Road PS Decommissioning	0	0	0	30,000	30,000	0
1-6103-23	5	Cherry Hill PS Improvements	0	5,259	13,250	50,000	36,750	13,250
1-6405-11	6	Closed - Hayden Press Tank-Pit Replacement	78,159	0	2,172	0	(2,172)	80,331
1-6112-29	7	Lynwood Pump Rebuild	0	0	50,623	50,000	(623)	50,623
		2c Hydropneumatic Systems						
1-7170-01	1	Bahia Hydropneumatic System Replacement	$32,159	$43,566	$112,768	$0	($112,768)	$144,927
		2d Tank & Pump Station Contingency						
	1	PS Pump Replacements (5/yr)	$0	$0	$0	$0	$0	$0
		Subtotal Storage Tanks & Pump Stations	$3,361,479	$85,357	$478,960	$760,000	$281,040	$3,840,439

NORTH MARIN WATER DISTRICT

CAPITAL IMPROVEMENT PROJECTS

PERIOD ENDING JUNE 30, 2026

		Description	COST THRU JUNE 2025	JUNE 2026	FYTD TOTAL	FY 25/26 BUDGET	(OVER)/UNDER BUDGET	TOTAL COST
		3. STAFFORD IMPROVEMENTS						
		3a Stafford Treatment Plant (STP)						
1-6610-38	1	STP PLC (Prog Logic Controllers) Replacements	$0	$93,006	$186,011	$185,000	($1,011)	$186,011
1-6610-29	2	STP-Tower Hose Replacement	46,771	0	36,880	0	(36,880)	83,651
1-6610-30	3	Closed - STP Primary Filter Basin Improvements	1,148,669	0	0	0	0	1,148,669
1-6610-33	4	Closed - STP Fire Alarm Upgrade	12,394	0	0	0	0	12,394
1-6610-39	5	Closed-STP-Rebuild Centrisys Centrifuge	0	0	97,240	0	(97,240)	97,240
		3b Stafford Dam / Watershed						
1-6610-24	1	Water Supply Enhancements-Spillway ASG	$262,182	$0	$14,581	$50,000	$35,419	$276,762
1-6610-37	2	Dam Spillway Concrete Repair	0	186	98,367	75,000	(23,367)	98,367
1-6610-31	3	Dam Piezometer Automation	56,506	23,453	61,796	80,000	18,204	118,302
		3c Stafford Contingency						
	1	Other Stafford Improvements	$0	$0	$0	$0	$0	$0
1-6610-36	2	Closed - Recirculation Pump 231/232 Rpl	0	0	35,107	40,000	4,893	35,107
		Subtotal Stafford Improvements	$1,526,521	$116,645	$529,982	$430,000	($99,982)	$2,056,503
		4. MISCELLANEOUS IMPROVEMENTS (NOVATO)						
		4a District Offices						
1-6502-54	1	Closed-Construction Building 1st Floor Improvements	$0	$0	$38,341	$50,000	$11,659	$38,341
1-6502-55	2	Closed - Construction Building 2nd Floor Improvements	0	0	38,500	50,000	11,500	38,500
	3	Construction Yard Improvements - Pipe Racks	0	0	0	25,000	25,000	0
1-6501-46	4	Office Emergency Generator	0	0	1,021	0	(1,021)	1,021
1-6501-50	5	Closed - DLF Mediation	155,510	98	124,861	0	(124,861)	280,371
1-6502-49	6	Closed-Construction Locker Room Remodel	289,175	0	0	0	0	289,175
1-6502-52	7	Closed - EV Charging Stations (9)	0	0	67,492.66	0	(67,493)	67,493
1-6501-51	8	RCP Gate Improvements	0	0	18,326	0	(18,326)	18,326
		4b System Pressure / Valving						
	1	System Wide PR Station Rehab	$0	$0	$0	$25,000	$25,000	$0
	2	San Marin Valve Pit Improvements	0	0	0	15,000	15,000	0
1-7219-00	3	655 Canyon Road Fire Service Replacement	0	0	646	40,000	39,354	646
1-7218-00	4	1180 Lynwood Dr. Fire Service Replacement	0	18,831	36,101	40,000	3,899	36,101
	5	Gateway Commons- Backflow Prevention	0	0	0	60,000	60,000	0
1-6317-11	6	Landing Way Regulators	0	35,015	78,513	50,000	(28,513)	78,513
		4c Miscellaneous Projects						
1-6610-32	1	Closed - Thorsson Monitoring Stat - Upgrade	$6,642	$0	$0	0	$0	$6,642
1-6610-35	2	Scada Server Upgrade	8,806	0	16,875	0	(16,875)	25,681
1-6502-53	3	Equipment not yet in Service	309,317	(157,844)	($309,317)	0	309,317	0
		4d Miscellaneous Contingency						
	1	Cathodic Protection-Anode Installation (FY26)	$0	$0	$0	$10,000	$10,000	$0
	2	Other System Improvements	0	0	0	0	0	0
		Subtotal Miscellaneous Improvements (Novato)	$769,450	($103,901)	$111,359	$365,000	$253,641	$880,809

NORTH MARIN WATER DISTRICT

CAPITAL IMPROVEMENT PROJECTS

PERIOD ENDING JUNE 30, 2026

		Description	COST THRU JUNE 2025	JUNE 2026	FYTD TOTAL	FY 25/26 BUDGET	(OVER)/UNDER BUDGET	TOTAL COST
		5. RECYCLED WATER SYSTEM (NOVATO)						
		5a RW Pipelines						
5-7162-07	1	Closed-Hamilton Homeward Bound RW Main Ext[1]	$233,861	$0	$13,272	$0	($13,272)	$247,133
		5b RW Tanks & Pump Stations	$0	$0	$0	$0	$0	$0
		5c RW Contingency	$0	$0	$0	$0	$0	$0
	1	Other Recycled Water Improvements	$0	$0	$0	$100,000	$100,000	$0
		TOTAL RECYCLED WATER	$233,861	$0	$13,272	$100,000	$86,728	$247,133
		6. WEST MARIN SYSTEM						
		6a WM Pipelines						
2-8912-00	1	Lagunitas Bridge Pipeline Replacement	$195,213	$1,665	$494,696	$750,000	$255,304	$689,909
	2	Olema Creek Bridge Pipe Replacement (County)	0	0	0	25,000	25,000	0
2-7192-01	3	Galv Pipe Repl -Balboa	8,290	0	0	0	0	8,290
2-7192-02	4	Galv Pipe Repl - 4 Locations	197,298	0	4,453	250,000	245,547	201,751
2-7214-00	5	St Rt 1 Caltrans Pipe Relocate	3,835	0	7,057	40,000	32,943	10,892
		6b WM Tanks & Pump Stations						
		6c WM Wells						
2-6613-00	1	Gallagher Well #3	$3,458	$12,188	$32,409	$100,000	$67,591	$35,867
		6d WM Treatment Plant						
		6e WM Contingency						
	1	Sync w/County Paving	$0	$0	$0	$25,000	$25,000	$0
	2	Other Water System Improvements[2]	0	0	0	100,000	100,000	0
2-7217-00	3	Closed - West Marin Fire Services	0	0	14,808	0	(14,808)	14,808
2-7185-00	4	Gallagher Ranch Streambank Stabilization[2]	735,835	0	922	5,000	4,078	736,757
		TOTAL WEST MARIN	$1,143,929	$13,853	$554,344	$1,295,000	$740,656	$1,698,274
		7. OCEANA MARIN						
		7a OM Pipelines						
8-7208-01	1	Sewer Force Main Improvements-FM 1A (Design Only)	$53,602	$0	$12,154	$25,000	$12,846	$65,756
		7b OM Lift Station	$0	$0	$0	$0	$0	$0
		7c OM Treatment Ponds						
8-7173-00	1	Closed - OM Treatment Pond Rehab-404 Grant-FEMA[3&4]	$208,605	$0	$0	$0	$0	$208,605
8-7173-01	2	Closed - OM Treatment Pond Rehab-Grant Management	66,719	0	2,116	0	(2,116)	68,834
8-7173-02	3	Closed - OM Treatment Pond Rehab-PH 2 Const FEMA	1,860,610	0	0	0	0	1,860,610
		7d OM Contingency						
	1	Other Sewer System Improvements	$0	$0	$0	$25,000	$25,000	$0
		TOTAL OCEANA MARIN	$2,189,535	$0	$14,270	$50,000	$35,730	$2,203,805

NORTH MARIN WATER DISTRICT

CAPITAL IMPROVEMENT PROJECTS

PERIOD ENDING JUNE 30, 2026

Description	COST THRU JUNE 2025	JUNE 2026	FYTD TOTAL	FY 25/26 BUDGET	(OVER)/UNDER BUDGET	TOTAL COST

SUMMARY - GROSS PROJECT OUTLAY	Current Month	FYTD Total	FY 25/26 Budget	FYTD/ Budget%
Novato Water Capital Projects	$144,936	$3,227,897	$4,625,000	70%
Novato Recycled Water Capital Projects	0	13,272	100,000	13%
West Marin Water Capital Projects	13,853	554,344	1,295,000	43%
Oceana Marin Sewer Capital Projects	0	14,270	50,000	29%
Gross Capital Improvement Project Outlays	$158,789	$3,809,783	$6,070,000	63%

8 LESS FUNDED BY GRANTS, LOANS & REIMBURSEMENTS						
(Accrued)/Deferred						
a NW - Loan Funds - Gateway Commons On-Bill Financing Reimb	$0	$0	$0	$0	$0	$0
b RW - Capital Replacement Expansion Fund	0	0	0	0	0	$0
c WM - Loan For "Near-Term" Capital Projects	146,634	0	0	0	0	$146,634
FUNDING BY OTHERS (ACCRUED)/DEFERRED	$146,634	$0	$0	$0	$0	$146,634
Received						
a NW - Loan Funds - Gateway Commons On-Bill Financing Reimb	$0	$0	$0	($60,000)	($60,000)	$0
b RW - Capital Replacement Expansion Fund	(286,761)	0	(13,272)	(100,000)	(86,728)	($300,033)
c WM - Loan For "Near-Term" Capital Projects	(554,228)	0	0	(1,295,000)	(1,295,000)	($554,228)
FUNDING BY OTHERS RECEIVED	($840,989)	$0	($13,272)	($1,455,000)	($1,441,728)	($854,261)
NET PROJECT EXPENDITURES	$9,548,062	$158,789	$3,796,511	$4,615,000	$818,489	$13,637,840

CIP SUMMARY-NET EXPENDITURES:	Current Month	FYTD Total	FY 25/26 Budget	FYTD/ Budget%
Novato Water Capital Projects	$144,936	$3,227,897	$4,565,000	71%
Novato Recycled Water Capital Projects	0	0	0	0%
West Marin Water Capital Projects	13,853	554,344	0	-
Oceana Marin Sewer Capital Projects	0	14,270	50,000	29%
Net Capital Improvement Project Outlays	$158,789	$3,796,511	$4,615,000	82%

8. EQUIPMENT BUDGET				
1 Class 8 Service Truck (2) #565 & 564	$0	$757,183	$498,000	($259,183)
2 Lease/Purchase Vehicles	0	235,801	313,000	77,199
3 Programmable Logic Controller (6) (Operations)	0	17,833	100,000	82,167
4 Turbidity Analyzers (8) (Operations)	0	10,322	55,000	44,678
5 Chlorine Analyzer (3) (Operations)	0	0	42,000	42,000
6 Incubator (Lab)	0	5,961	10,000	4,039
7 Leete Generator (Admin Bldg)	157,844	157,844	0	(157,844)
8 Miscellaneous Equipment Purchases	6,103	44,162	15,000	(29,162)
Total Equipment Purchases	$163,947	$1,229,107	$1,033,000	($196,107)

NORTH MARIN WATER DISTRICT

CAPITAL IMPROVEMENT PROJECTS

PERIOD ENDING JUNE 30, 2026

		Description	COST THRU JUNE 2025	JUNE 2026	FYTD TOTAL	FY 25/26 BUDGET	(OVER)/UNDER BUDGET	TOTAL COST
		9. STUDIES & SPECIAL PROJECTS						
		9a General Studies						
1-4102-00	1	GIS Support	$99,684	$1,303	$12,288	$12,000	($288)	$111,972
	2	Grant Consultant	0	0	0	10,000	10,000	0
	3	Strategic Plan Update (2025-2029)	10,460	0	12,180	15,000	2,820	22,640
1-4088-00	4	Emergency Operations Response Plan	28,139	1,512	34,493	100,000	65,507	62,632
	5	Retiree Health Benefits (OPEB) Footnote FY25	6,000	0	1,000	0	(1,000)	7,000
1-4073-00	6	Surplus Property	0	0	1,496	0	(1,496)	1,496
		9b Novato Service Area Studies						
1-4050-25	1	Urban Water Mgmt Plan - 2025 Update	17,062	22,018	84,403	80,000	(4,403)	101,465
1-4059-00	2	Stafford LakeWater Rights Update	0	0	1,080	0	(1,080)	1,080
1-4104-23	3	Novato Water Master Plan	313,401	0	242,019	225,000	(17,019)	555,420
	4	Stafford Lake Bathymetiric Survey	0	0	22,479	15,000	(7,479)	22,479
	5	Stafford Dam Monument Survey	0	0	7,806	10,000	2,194	7,806
	6	Stafford Treatment Plant Risk Management Plan Update	0	0	0	35,000	35,000	0
1-4077-00	7	Potter Valley Project FERC Decommissioning	52,237	8,086	21,173	5,000	(16,173)	73,409
1-4105-00	7	SMART Master Agreement	5,155	0	130	0	(130)	5,285
1-4106-00	8	STP Risk Management Program Update	38,441	0	4,045	0	(4,045)	42,486
1-4109-00	9	MMWD ARC - Coordination	0	0	11,872	0	(11,872)	11,872
1-4110-00	10	PS ASSESSMENT (2025 MP)	0	2,375	14,489	0	(14,489)	14,489
1-7140-00	11	Dam Safety Emergency Action Plan	0	0	965	0	(965)	965
		9c WM Service Area Studies						
	1	West Marin Water Supply Resiliency Feasibility Study	0	0	0	75,000	75,000	0
	2	West Marin Water Rights Review	0	0	1,337	0	(1,337)	1,337
		9d OM Service Area Studies						
8-4111-00	1	Oceana Marin Master Plan	0	0	1,884	50,000	48,117	1,884
		9e Other Studies						
	2	Recycled Water-G&A Consultants/Studies General	890	0	0	0	0	890
			$747,848	$35,295	$475,137	$632,000	$156,863	$1,222,985

Notes to Capital Improvement Projects Schedule:

(1) Funded by Capital Replacement & Expansion Fund.
(2) Loan from Novato Water-As included in the 2021 WM Water rate study - to be paid with interest. Loan received 6/30/22.
(3) OM Treatment Pond Rehab-Project funded at 75% by grants. Eligible project costs were budgeted at $2.2M (75%=$1.425M)
(4) Loan from Novato Water-As included in the five-year financial forecast

North Marin Water District Financial Statement Notes

Note 1 - Restricted Cash

Connection Fee Fund: Cash available from collection of Connection Fees. The fee is charged to developers based upon the estimate of cost necessary to construct capacity to serve the new development. These funds are restricted by law for expansion of the water or sewer facilities within the service area where the development occurs. Funds are disbursed from the Connection Fee Reserve as expenditures are incurred to increase system capacity to serve new development. The fund balance accrues interest quarterly.

Deer Island RWF Replacement Fund: The State Revolving Fund (SRF) loan agreement for construction of the Deer Island RW Facility requires the District to establish and maintain a Water Recycling Capital Reserve Fund (WRCRF) for the expansion, major repair, or replacement of the water recycling facilities. The WRCRF is maintained in compliance with the State Water Resources Control Board's "Policy for Implementing the State Revolving Fund for Construction of Wastewater Treatment Facilities" in effect at the time the agreement was executed, July 2006. NMWD is required to deposit a minimum reserve of 0.5% of the SRF loan amount each year for a period of ten years. The balance in the DICRF is $215,000 ($4.3M x .5% x 10 years). The fund balance does not accrue interest.

Recycled Water Capital Replacement and Expansion Fund: The current Interagency Agreements for Recycled Water between NSD, LGVSD & NMWD require that any payments to the Distributor (NMWD) by the End User (Consumers) in excess of actual costs (marginal payments) shall be deposited in this fund. Operation and Maintenance Costs are defined as the actual cost of: labor (including general and administrative overhead plus tools and supplies normally applied), equipment and vehicle charges, consumables (such as chemicals and electrical power), and spare parts and/or replaced components necessary to reliably treat and deliver recycled water to the End Users. Operation and Maintenance Costs do not include costs for major capital replacement or process changes. A payment of $124,916 was made to Novato Sanitary District in January 2026 for the Hypochlorite Tank Replacement and a payment of $247,133 was made to NMWD in June 2026 for the Hamilton Homeward Bound Recycled Water Main Extension. This fund balance does not accrue interest.

STP SRF Reserve Fund – Marin County Treasury: The 2004 Stafford Treatment Plant State Revolving Fund (SRF) loan agreement requires the District to build a Reserve Fund equal to one year of payments ($1,044,474) in the Marin County Treasury during the first ten years of the 20-year repayment period. Every January 1 and July 1, commencing January 1, 2010, the District deposits with the County 10% of the semi-annual SRF payment. This Reserve Fund was fully funded at 6/30/19. The County credits the fund with interest quarterly which is reflected in the balance until the interest is applied to the semi-annual payments. The Reserve will be used to pay the last 2 semi-annual SRF loan payments.

RWS North/South SRF Reserve Fund: The State Water Resource Control Board Agreements for the seven Clean Water State Revolving Fund Loans made for expansion of the Recycled Water System distribution system require that the District establish a reserve fund equal to one year's debt service ($614,299) prior to the construction completion date.

RWS Central SRF Reserve Fund: The State Water Resource Control Board Agreement for the Clean Water State Revolving Fund Loan made for expansion of the Recycled Water System distribution system requires that the District establish a reserve fund equal to one year's debt service ($275,773) prior to the construction completion date.

Note 2 - Designated Cash

Liability Contingency Fund: Established in 1986 when the District first elected to self-insure its general liability risk. This reserve was funded with $1 million initially and $200,000 annually thereafter until it reached a balance of $2 million. Commencing FY93, $1 million of the reserve was made available to fund loans to eligible employees under the District's Employer Assisted Housing Program. In August 2008, $500,000 was transferred into this reserve from the Self-Insured Workers' Compensation Fund and made available to fund Employer Assisted Housing Program loans. Currently there are four Employer Assisted Housing Loans outstanding totaling $1,150,000 (see Note 3). In March 2005, $652,400 was expended from the fund to purchase a home at 25 Giacomini Road in Point Reyes Station. In December 2025, $356,485 was transferred to the Maintenance Accrual Fund to bring the balance in the Liability Contingency Fund to $350,000 which represents $1.5M less the four housing loans. In FY98 the West Marin Water System was included in the fund and has since built-up a proportional reserve of $98,885 which includes $8,885 added in 2006 from the sale of surplus property in West Marin. The fund balance does not accrue interest.

Retiree Medical Benefits Fund: NMWD pays the cost of health insurance for retirees between the ages of 55 and 65 and spouse under any group plan offered by CalPERS. The retiree must be at least 55 and have a minimum of 12 years (for employees hired on or before September 30, 2018) and a minimum of 20 years (for employees hired after September 30, 2018) of NMWD service at the date of retirement. NMWD's contribution toward the chosen plan is capped in the same manner as all other NMWD employees in the same class. Coverage terminates for the spouse when the spouse becomes eligible for Medicare, or for both the retiree and spouse when the retiree becomes eligible for Medicare. When the retiree or spouse becomes eligible for Medicare, NMWD pays up to the couple annuitant rate, which is capped at $3,830 per year ($319/month). In August 2003, NMWD transferred $2.55 million ($2.3 million for current retirees plus $250,000 for future retirees) from unrestricted cash into a reserve to fund this obligation. In 2010 the Board directed staff to add $1,500 per employee annually as a payroll overhead to accrue and accelerate amortization of this liability. The accrual is maintained as a Long-Term Liability entitled Total OPEB Liability. In 2025 an Actuarial Analysis calculated NMWD's total actuarial liability at $4.3 million. The Retiree Medical Benefits cash fund earns interest quarterly.

Maintenance Accrual Fund: Established in FY91 to provide a source of maintenance money for replacement of treatment, storage, transmission and distribution facilities as they wear out. The annual contribution from operating reserves was initially $200,000. Net polybutylene claim settlement proceeds of $671,060 were closed into the fund in FY93. In FY94 the annual contribution was reduced to $100,000. Starting in FY21/22, this reserve was increased to $4.0 million based on the District's planned pay-go capital spending per the 2020 Novato Water Rate Study and subsequent financial plans. Funds are borrowed from the Maintenance Accrual Fund to offset the shortfall in unrestricted Cash & Investments. The fund balance does not accrue interest.

Operating Reserve Fund: This reserve, comprised of four months of budgeted operating expenditures (less depreciation) as recommended by the District's financial advisors, serves to ensure adequate working capital for operating, capital, and unanticipated cash flow needs that arise during the year. Funds are borrowed from the operating Reserve Fund to offset the shortfall in unrestricted Cash & Investments. The fund balance does not accrue interest.

Note 3 – Employee Loans

Housing Loans: The District's Employer Assisted Housing Program allows up to $300,000 to be loaned to an employee for a period of up to 15 years for the purchase of a home within the District service territory that will enable the employee to respond rapidly to emergencies affecting the operation of the District. Repayment is due upon sale, termination of employment, or other event as described in the Program. Interest on the loan is based on the amount of interest revenue that the District would have earned over the period of the loan. There are four employee-housing loans currently outstanding totaling $1,150,000 dated March 2015, November 2024, June 2025 and December 2025.

Note 4 – Other Long Term Receivables

In 2014, the District entered into an interconnection agreement with MMWD for their share of the Aqueduct Energy Efficiency Project. The 2.71% $3,622,882 loan will have yearly payments due of $205,320, and the final payment is due in July 2032. In 2015 the District entered into an agreement with Marin Country Club for their share of the pipeline extension to provide recycled water for the Marin Country Club Golf Course. In 2016 the District received a $6.6 million 30-year 1.0% SRF loan to finance the Recycled Water Central project, and Marin Country Club agreed to pay the District $1,265,295 in bimonthly payments of $8,142 at 1.0% over 30 years for their share of the pipeline extension. The payments will coincide with Marin Country Club's water service payments. The final payment from Marin Country Club is due in November 2047. In 2025, the District sold the 25 Giacomini Rd. property to CLAM (Community Land Trust of West Marin) for $800,000. CLAM made a downpayment of $160,000. The remaining $640,000, 4.0% loan will be paid monthly at $6,480 for 3 years, followed by a final payment of $474,050 in January 2028.

Note 5 – Depreciation

Assets are assigned a useful life based on consultations with the District Chief Engineer and a survey of other water agencies. Depreciation in computed on a straight-line basis over the estimated useful life of the various classes of property as follows:

Facility	Life (Years)
Aqueduct	150
Dam	100
Buildings & Structures	40
Mains	50
Pumping Equipment	15-25
Water Treatment Equipment	10-20
Storage & Transmission (16"+) Facilities	50
Distribution Facilities (includes Pump Stations)	50
Office, Laboratory, Construction & Shop Tools & Equipment	10
Vehicles 1 ton or greater	10
All other vehicles	5
Sewer Mains	40
Sewer Pumps	4-10

Note 6 - Capitalization Policy

The Government Finance Officers Association *Guide for State and Local Governments* recommends that a capitalization policy incorporate a minimum threshold of $5,000 and an estimated useful life of at least two years. It also cautions that federal grant and loan requirements prevent the use of capitalization thresholds in excess of $5,000. Thus NMWD's capitalization threshold is $5,000.

Note 7 – Bond & Loan Servicing Schedule for Fiscal Year 2025-2026

Service Area	Description	Issue Date	Rate	Original Amount	Final Pmt	Interest Expense	Principal Paid	Total Debt Service	6/30/26 Outstanding Balance
Novato	SRF Loan - STP	2004	2.39%	$16,528,850	07/01/29	$ 89,014	$ 955,460	$1,044,474	$ 3,006,435
Novato	Bank Marin Loan	2011	3.42%	$7,000,000	10/27/31	$ 87,545	$ 394,497	$ 482,042	$ 2,346,993
Novato	Chase Bank Loan	2018	2.69%	$4,600,000	03/01/33	$ 72,227	$ 305,000	$ 377,227	$ 2,380,000
Novato	Webster Bank	2022	3.11%	$20,000,000	03/01/42	$ 547,061	$ 800,835	$1,347,896	$16,789,561
					Novato Total	$ 795,847	$2,455,792	$3,251,639	$24,522,989
RW TP	SRF Loan	2006	2.40%	$4,302,560	06/19/27	$ 12,664	$ 260,703	$ 273,367	$ 266,960
RW North	SRF Loans (4)	2013	2.60%	$4,375,605	2031 & 2032	$ 48,818	$ 233,074	$ 281,892	$ 1,644,549
RW South	SRF Loans (3)	2013	2.20%	$5,361,952	2032 & 2033	$ 54,925	$ 277,482	$ 332,407	$ 2,219,107
RW Central	SRF Loan	2016	1.00%	$7,130,503	12/31/47	$ 56,412	$ 219,361	$ 275,773	$ 5,421,800
					Recycled Water Total	$ 172,819	$ 990,620	$1,163,439	$ 9,552,415
WM Water	Bank Marin Loan	2012	3.42%	$1,000,000	10/27/31	$ 12,851	$ 57,908	$ 70,758	$ 344,513
					West Marin Water Total	$ 12,851	$ 57,908	$ 70,758	$ 344,513
					FY 25/26 Total - External Loans	**$ 981,517**	**$3,504,320**	**$4,485,837**	**$34,419,918**

1. In April 2004 the California State Department of Water Resources approved a 2.39% 20-year loan for reconstruction of the Stafford Water Treatment Plant. The project was completed in FY09 with repair of the Outlet Tower Sluice Gate. Interest paid during construction totaled $1,636,378. The loan covenants require an annual reserve fund contribution of $104,447 (10% of the annual debt service obligation) be deposited into the Marin County Treasury during each of the first ten years of the repayment period. Debt service is funded 25% by Facility Reserve Charges. The first payment was made in December 2009.
2. In October 2011 Bank of Marin made a 20-year 3.54% (APR) loan of $8 million to fund the District's share of the Aqueduct Energy Efficiency Project. See number 9 below.
3. In March 2018 Chase Bank made a 15-year 2.69% (APR) loan of $4.6 million to fund the District's Automated Meter Information system Project.
4. In May 2022, Webster Bank made a 20-year 3.11% (APR) loan of $20 million to fund the Admin Building Renovation and other Capital Improvement Projects. The first payment was made August 26, 2022.
5. In August 2006 the California State Department of Water Resources approved a 2.4% 20-year loan of $4,264,545 for construction of the Deer Island Recycled Water Facility. With the addition of $38,015 in Construction Period Interest, the loan principal totaled $4,302,560. The project was completed in June 2007, and the first payment was made June 19, 2008.
6. In July 2011 the California State Department of Water Resources approved a series of four 2.6% 20-year loans which totaled $4,375,605 for the Recycled Water North Service Area Expansion Project. The projects were completed on October 31, 2012, and the first payment was made in November of 2012.
7. In March 2012 the California State Department of Water Resources approved a series of three 2.2% 20-year loans totaling $5,361,952 for the Recycled Water South Service Area Expansion Project. The projects were completed on September 4, 2013, and the first payment was made in December of 2013.
8. In May 2016 the California State Department of Water Resources approved a 1.0% 30-year loan of $7,130,503 for the Recycled Water Central Service Area Expansion. The project was completed in December 2017, and the first payment was made December 31, 2018.
9. In June 2012 the Board authorized reallocating $1 million of the Bank of Marin loan to West Marin Water to repay Novato Water $223,000 owed for loans to fund Long Range Improvement Projects and the remainder to fund the Solids Handling Facility at the Point Reyes Water Treatment Plant. See note to loan 2 above.

Note 8 – Unemployment Insurance Reserve

NMWD uses the "Reimbursable Method" of paying for Unemployment Costs. Under this method, the District reimburses the State Employment Development Department for all unemployment benefits paid on our behalf. The reserve is maintained at an amount equal to the higher of the average claim amount paid over the last 5 years or 26 times the maximum weekly benefit amount (currently $450 x 26 = $11,700).

Note 9 – Payroll Benefits

Payroll Benefits payable includes payroll taxes; vacation, sick, and holiday leave; Section 125 payments; cancer, long term care and disability insurance premiums; and union dues.

Note 10 - Interest Policy on Inter-District Loans

In the event an improvement district expends all of its Undesignated Funds, it shall borrow funds from that improvement district's Board Designated Fund reserves to meet ongoing requirements. In the event an improvement district expends all of its Board Designated Fund reserves, it may receive a loan from the Novato Improvement District in an amount sufficient to meet its ongoing requirements. Restricted Funds shall not be used to finance ongoing normal operating expenses.

No interest shall be paid by an improvement district on funds borrowed from that improvement district's Board Designated Fund reserves. Interest on loans from the Novato Improvement District shall be paid by the recipient district to the Novato district based upon the outstanding loan balance at the close of the previous accounting period. Interest shall be calculated at the higher of: 1. The weighted average interest rate of Novato improvement district debt (2.99% at 6/30/23); or 2. The average interest rate earned on the District treasury since the close of the previous accounting period.

Note 11 – Budget Augmentations

Note 12 – Prior Period Adjustment

Note 13 – Explanation of Financial Statement Components

The District's financial statement is comprised of four components: 1) Statement of Net Position, 2) Sources and Uses of Funds Statement – All Service Areas Combined, 3) Income Statement and Cash Flow by Service Area, and 4) Notes to the Financial Statements. This report also contains other supplementary information in addition to the basic financial statements themselves.

The Statement of Net Position (page 4) reports the District's assets and liabilities and provides information about the nature and amount of investments in resources (assets) and the obligations to the District's creditors (liabilities). The difference between assets and liabilities is reported as *net position.* Over time, increases or decreases in the fund balance may serve as a useful indicator of whether the financial position of the District is improving or deteriorating.

The Sources and Uses of Funds Statement – All Service Areas Combined (page 8) compares fiscal year-to-date performance against the Board approved annual budget – presented in the adopted budget format. This Sources and Uses of Funds Statement varies from the income statement in that it includes capital expenditures, debt principal repayment, connection fee revenue, and cash infusions from debt issuance.

The Income Statement and Cash Flow by Service Area (page 9) presents the net income (loss) for the fiscal year-to-date (FYTD) period for each of the District's four service areas. The income and expenses on this report are presented in conformity with Generally Accepted Accounting Principles (GAAP) and comply with Governmental Accounting Standards Board pronouncements. Accordingly, all income and expenses are reported as soon as the underlying event giving rise to the change occurs, regardless of the timing of related cash flows. This statement measures the success of each service area's operations and can be used to determine whether the service area has successfully recovered all costs through user fees and other charges.

Also included at the bottom of page 9 is a statement of Cash Flow by Service Area. The primary purpose of this statement is to reconcile in an informative manner the difference between the net income/(loss) for period of each service area with the resultant change in cash balance that occurred over the same period.

Notes to the Financial Statements (page 28) provide a summary of significant accounting policies and assumptions and other information of value to the financial statement reader.

Other Supplementary Information includes Detail Income Statements presented in accordance with GAAP for each of the four service areas (pages 10, 14, 16, 19). These statements present income and expenditures in close detail for further analysis. Other supplementary schedules of note include the Vehicle Fleet Analysis (page 21), and Capital Improvement Project Expenditures (page 23), which show outlays to date, compared with budget authority.

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ITEM #11

NORTH MARIN WATER DISTRICT

MEMORANDUM

To: Board of Directors September 15, 2026

From: Pablo Ramudo, Water Quality Supervisor
Eric Miller, AGM / Director of Engineering

Subject: Revisions to Regulations 6 and 36 related to Cross-Connection Control
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RECOMMENDED ACTION: Information Only

FINANCIAL IMPACT: None at this time (financial impacts anticipated in FY 27/28 and beyond)

California Water Board's sweeping raft of changes to requirements for cross-connection control requirements went into effect in July 2024. The District created a manual for operation of its cross-connection control program, which details how we meet requirements, but Regulations 6 and 36 need to be updated to fully comply. These changes are outlined below and the attached drafts of District Regulations 6 and 36 show proposed changes in strikeout/underline format. Once finalized, a clean copy of Regulations 6 and 36 will be brought to the Board for consideration and adoption at a future meeting.

History of Cross-Connection Control Regulations and District Rules

The first regulations prohibiting cross connections which governed public water systems came into effect in California in 1942. With substantial input from the American Water Works Association and the University of Southern California Foundation for Cross-Connection Control and Hydraulic Research, California went on to revise these regulations eight times. Each revision, with increasing specificity, expanded the number and types of conditions under which a cross-connection is considered to exist and prescribed which type of backflow prevention device is to be used in each instance.

The District first enumerated its prohibition of cross-connections as a condition of service in Rule #10 in 1951. When the District Board changed its rules to regulations in 1964, Regulation 6 was adopted, outlining the District's requirements in greater detail and adding information on backflow prevention assemblies (BPAs)

The District updated Regulation 6 twelve times since 1964 in response to the subsequent changes to state requirements. It also went on to add and update fees, structured by device type and size of service.

Latest regulatory changes

The latest changes to the state regulations have been to compile existing requirements as well as new and expanded requirements into the State Water Board's Cross-Connection Control Policy Handbook (CCCPH).

Public water systems are required to:

- Adopt operating rules or ordinances- including a Cross-Connection control plan that describes how water systems will achieve compliance with the CCCPH (The District's plan was approved by the Division of Drinking Water in September 2025)
- Conduct hazard assessments for each customer's premise including follow-up assessments periodically or when user premise conditions change
- Comply with updated provisions for backflow protections including changes to the minimum backflow protection required for certain situations
- Employ persons trained in cross-connections to carry out the program
- Establish procedures for testing
- Use certified backflow prevention assembly testers and cross-connection control specialists
- Perform backflow incident response, reporting, and notification
- Maintain records
- Conduct public outreach and education
- Local entity coordination

Proposed Revisions to Regulation 6 and 36

The proposed revisions to Regulations 6 and 36 in the attached drafts are meant to address the changes to the state regulations and support the District's revamped cross-connection control and backflow protection program. A number of the changes facilitate the conveyance of ownership of some existing BPAs, and those installed in the future, to the customer whose services are determined to require them due to an on-site hazard. The responsibility for testing, repair, and replacement will belong to customers for all customer-owned devices, as has been the case for most commercial BPAs for much of the District's history. The revision also includes the authority to refuse or terminate water service in cases of non-compliance with reference to District Regulation 55.

Following the Board's adoption of the revisions to the regulations, the District will launch a customer education campaign that will include general information about the program, customer surveys that will make up the bulk of on-site hazard assessments, and targeted letters to those customers that will have to meet backflow protection requirements for the first time.

ATTACHMENTS:

1. Draft revisions to Regulation 6
2. Draft revisions to Regulation 36
3. District Cross-Connection Control and Backflow Protection Manual

NORTH MARIN WATER DISTRICT

REGULATION 6

CROSS-CONNECTION CONTROL AND BACKFLOW PROTECTION FOR POTABLE WATER SERVICE

a. General

North Marin Water District (District) ~~furnishes~~ supplies potable water service under permits issued by the State ~~of California~~Water Resources Control Board (SWRCB) Division of Drinking Water (DDW) ~~Department of Public Health~~. In order to comply with the terms of these permits and all State regulations intended to protect the potable public water supply from pollution or contamination, an appropriate backflow prevention assembly (BPA)~~er~~ shall be installed at every service connection where one is required by District regulations and DDW as set forth in the SWRCB Cross-Connection Control Policy Handbook (CCCPH).~~of the Department of Public Health set forth in Title 17 California Code of Regulations as sections 7583 through 7605. Some examples of State-mandated sites needing devices are: locations with an auxiliary water supply (such as a private well), locations handling pressurized fluids, locations served by recycled water, and locations with plumbing connections to non-potable piping.~~

~~Specific requirements are found in the District's Cross-Connection Control and Backflow Protection Manual.~~

This ~~r~~Regulation supplements and does not supersede local plumbing regulations, codes or ordinances, or State regulations related to water supply. Specific information for program requirements can be found in the District's Cross-Connection Control Program Manual (CCCPM).

b. Type of Backflow Prevention~~er~~ Assembly Required

The District shall determine the general type of BPA~~preventer~~ to be installed~~, giving~~ considering~~ation to~~ the likelihood of backflow occurring, the type of pollution or contamination that may occur, distribution system pressure, and compliance with applicable State regulations. The general type of BPA's~~backflow preventers~~ the District may require in decreasing order of protection are: Air Gap (AG), Reduced Pressure Principle ~~device~~ (RP~~P~~) and ~~double~~ Double ~~check~~ Check ~~valve~~ Valve (DC~~V~~). The manufacturer and model of the BPA must comply with Section 4 of the District's CCCPM.~~District shall approve of the specific model of device prior to installation.~~

c. Installation

Installation of all BPA's shall be at the customer's expense. Installation may be performed by any third-party installer that meets the requirements set forth in the District's CCCPM. The District may elect to install the BPA at its sole discretion.

The manner and location of installation shall be in accordance with District's current design and construction standards ~~and specifications,~~ and shall be subject to District approval. All installations shall be as close to the service connection, as defined in the District's CCCPM, as practical. In all cases, the BPA shall be installed before the first branch line leading off the customer's service line, with no outlet, tap, tee, or connection between the service connection and BPA unless approved by the District prior to installation.

~~Backflow prevention devices may be installed by the District or others at the discretion of the customer. The District shall inspect all installations. Installation and inspection of all backflow devices shall be at the customer's expense.~~

d. Ownership

BPA's are owned by the customer (customer-owned) unless otherwise determined to be owned by the District (District-owned) at the sole discretion of the District, per the District's CCCPM.

e. Inspection ~~and Testing of Backflow Preventers~~

Inspection of all BPA's shall be at the customer's expense. Newly installed or repaired BPA's will be inspected by the District or other certified professionals at the sole discretion of the District. BPA installations will not be considered complete without a passing inspection, as well as a passing test report (see below).

For cases in which approval of occupancy, permit sign-off, or other approval is required by the City or Novato, County of Marin, or other land use authority, such approval by the District will require a passing inspection and a passing test report (see below).

~~d.~~f. Testing

Testing of all BPA's shall be at the customer's expense. Testing shall only be conducted by individuals holding valid backflow prevention assembly tester certification from the California-Nevada Section of the American Water Works Association (CA-NV AWWA). A certified passing ~~inspection and~~ performance test of all BPA's~~backflow preventers~~ shall be performed prior to placing a newly installed BPA in service, and then annually or more often in those instances where successive ~~inspections~~ tests indicate repeated failure or on such other schedule approved by the Department of Public Health. ~~Installed devices may be tested by the District or others at the sole discretion of the District. Inspection and testing will be at the customer's expense. Inspections will be conducted only by individuals certified by AWWA (American Water Works Association) as backflow prevention testers.~~

Notice to test BPA's will be sent to all customers annually with customer-owned BPA's at water service connections. Exceptions of notice include District-owned BPA's that are tested annually by the District. A passing test report ~~of a certified inspection will~~must be submitted to the District within 30 days of notice that a test report~~n inspection~~ is due. If a customer fails to submit a passing test report within 30 days of the due date, the District may shut off water service to the premises per District Regulation 55.

All Cross-Connection Control related communications will be mailed to the customer's billing address used for the District water utility bill.

~~e.~~g. Repairs or Replacement ~~of Backflow Prevention Devices~~

~~Backflow devices that fail a performance test will be repaired or replaced by the customer except in the case of 3/4", 1" and 1½" double check valve assemblies installed by the District. These assemblies (3/4", 1" and 1½ ") installed by the District will be repaired or replaced by the District. Repairs shall be made within 45 days of notice of device failure.~~

~~If a customer fails to make the necessary repairs within the 45-day notice period as required, District staff shall be entitled to make said repairs and include the actual cost of the District's repair work on the customer's next water bill.~~Customer-owned BPA's that fail annual testing must be repaired or replaced by the customer. District-owned BPA's, including dedicated fire service assemblies, that fail annual testing will be repaired or replaced by the District. Following replacement of a District-owned BPA, ownership of the BPA will transfer from the District to the customer.

A passing test report must be received within 30 days of notice of BPA failure. If a customer fails to make the necessary repairs or replacement and submit a passing test report within the 30 day notice period as required, the District may shut off water service to the premises per District Regulation 55.

f.h. Backflow Prevention Assembly Charges for Installation Performed by District

EachThe customer having a customer-owned BPA is responsible for all costs associated with the installation, inspection, testing, repair, and replacement of the BPA.

shall pay a charge for installation of backflow prevention devices in accordance with the following table:

If installed at time of initial meter set:

Size	Device	Charge (7/2013)
¾"	DCV	$321.00
1"	DCV	$352.00
1½"	DCV	$402.00
¾"	RPP	$451.00
1"	RPP	$549.00
1½"	RPP	$667.00

If installed on an existing meter, additional installation costs will be added.

Charges for larger assemblies shall be based on the actual cost of each installation

Each customer having a District-owned BPAbackflow prevention device serviced by the District shall pay a bimonthly fee for services performed by the District servicing the device as shown inper District Regulation 54.

If a BPA is installed by the District at the time of the initial meter set, the cost to the customer shall be based on the Engineering Department Schedule of Charges for Backflow Prevention Assembly Installation.

If a BPA is installed by the District on an existing service (retrofit), or if there are extenuating circumstances related to the BPA installation, the customer may be required to pay charges based on the actual time and material cost incurred by the District, in its sole discretion.

g.i. Noncompliance

If a customer fails to comply with this rRegulation by failure to install, test or correct deficiencies or by removal, tampering with or modifying a preventerrequired BPA, the District shall have the right to refuse or discontinueterminate water service in accordance with District Regulation 55 and, if it deems necessary, physically disconnect the customer's piping from the District's distribution system.

Any customer who willfully fails to install a backflow prevention device as required herein, or who willfully bypasses or alters such a device is guilty of a misdemeanor, and will be subject to prosecution and, upon conviction thereof, shall be punishable by a fine not exceeding $500.00 or by the imprisonment in the County jail for a period not exceeding six months or by both fine and imprisonment (California Health and Safety Code section 116820).

h.j. Access for Inspection

North Marin Water District personnel and representatives of any governmental health agency shall have the right of ingress to and egress from the customer's premises at all reasonable hours without prior notification for the purpose of investigating compliance with this rRegulation and State Department of Public HealthDDW requirements.

i.k. Liability

The District shall not be liable for any injury to persons or damage to property which may result directly or indirectly from the installation, malfunction, testing or repair of any BPA backflow preventer. The District strongly encourages customers with BPAs at service connections to have a licensed plumber verify that the hot water system is adequately protected against thermal expansion. The installation of a BPA creates a closed water system, which can cause damage or injury if thermal expansion is not properly accounted for.

NORTH MARIN WATER DISTRICT

REGULATION 36

INSTALLATION OF SERVICE TO ~~PRIVATE~~ DEDICATED FIRE PROTECTION SYSTEMS

The installation of facilities to provide water supply to dedicated~~privately owned and maintained~~ systems to sprinklers, hydrants, standpipes or other facilities exclusively for fire fighting, shall be done in accordance with the procedures for extension of water distribution facilities.

Each dedicated fire protection service shall be ~~installed with a detector check assembly~~ designed by the District. Services of 2 ½" or greater shall be installed with an approved minimum of a Double Check Detector Assembly (DCDA). Services that are 2" or less shall be installed with an approved minimum of a Double Check Valve Assembly (DC). ~~The assembly shall be operated and maintained as part of the District's system.~~

Once installed, the assembly shall be customer-owned. Maintenance of any required facility shall be the sole responsibility of the customer. The District shall only maintain the bypass meter and the water main from the connection to the existing water main to the customer's service connection, i.e. flange or service shut-off which shall be upstream of the backflow prevention assembly (BPA).

Charges for standby fire protection service shall be in accordance with Regulation 54. No charge will be made for water used to extinguish accidental fires or routine testing of a fire protection system. The customer shall pay the full cost of the installation of the standby fire protection service connections, any required meters or BPA and any water mains installed solely for service to the standby connections.~~The Applicant for a private fire protection service shall be responsible for operation and maintenance of facilities beyond the assembly and for payment of the rates set forth in Regulation 54 c.~~

ATTACHMENT 3

NORTH MARIN WATER DISTRICT

Good Water
Good Service
Good Value
Safe Place to Work

Per Regulation 6

Cross-Connection Control Program Manual

Prepared by

NMWD CCC DEPT 2024
Program Coordinator Eric Kurfirst CCCSP 02203

APPROVED
By Kam Kei Chen at 2:39 pm, Sep 10, 2025

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1 General Provisions

1.1 Purpose

In order to protect the public health and comply with regulations with this purpose, the North Marin Water District, hereby referred to as "District", has adopted Regulation 6 and this *Cross-Connection Control Program Manual* (Manual).

The purpose of a cross-connection control program is to prevent the occurrence of backflow into the District's distribution system in order to protect customers from contamination or pollution from any on-site hazards. Properly installed and maintained Backflow Prevention Assemblies (BPA), devices or methods provide protection against the threat posed by many conditions typically found on a user's premise.

The objectives of Regulation 6 and the Manual are to:

- The primary objective of the District Regulation 6 and the Cross-Connection Control and Prevention of Backflow Manual is the protection of public health through the establishment of standards intended to ensure a public water systems (PWS) drinking water distribution system will not be subject to the backflow of liquids, gases, or other substances.

- Outline District and customer responsibilities for protection of the public water system

- Outline criteria determining when backflow protection is required

- Specify requirements for backflow prevention assemblies to protect the water system

- Comply with federal, state, and local laws and policies and to allow the District to meet applicable regulatory requirements and standards

All customers of the District and their service connections are subject to the conditions of California State Water Resources Control Board Cross-Connection Control Policy Handbook (CCCPH) and the District's Cross-Connection Control and Prevention of Backflow Program as set forth herein.

1.2 Administration

Except as otherwise provided, District staff shall administer, implement, and enforce the provisions of this Program.

During normal business hours, the District's Cross-Connection Control Program Coordinator shall be available to be contacted within 1 hour. During non-business hours, a designee of the Cross-Connection Control Program Coordinator shall be available within 1 hour.

The District uses SwiftComply backflow compliance software for recordkeeping information required pursuant to CCCPH section 3.5.1

1.3 Definitions

"Air-gap separation" or "AG" means a physical vertical separation of at least two (2) times the effective pipe diameter between the free-flowing discharge end of a potable water supply pipeline and the flood level of an open or non-pressurized receiving vessel, and in no case less than one (1) inch.

“Auxiliary water supply” means a source of water, other than an approved water supply, that is either used or equipped, or can be equipped, to be used as a water supply and is located on the premises of, or available to, a water user.

“AWWA standard” shall mean an official standard developed and approved by the American Water Works Association (AWWA).

“Backflow” means an undesired or unintended reversal of flow of water and/or other liquids, gases, or other substances into a public water system’s distribution system or approved water supply.

“Backflow prevention assembly” or “BPA” means a mechanical assembly designed and constructed to prevent backflow, such that while in-line it can be maintained and its ability to prevent backflow, as designed, can be field tested, inspected and evaluated.

“Backpressure” means a form of backflow that occurs when pressure in the downstream piping system (caused by pump, elevation of piping, steam and/or air pressure) is above the supply pressure at the point of consideration resulting in a reversal of the normal flow.

“Back-Siphonage” means the form of backflow due to a reduction in system pressure that causes a negative or sub atmospheric pressure to exist at a site in the District’s potable water system.

“Contaminant” shall mean a degradation of the quality of the potable water by any foreign substance which creates a hazard to the public health, or which may impair the usefulness or quality of the water.

“Controlled Cross-Connection” means a connection between the District’s potable water system and a non-potable water system with an approved BPA properly installed and maintained so that it will continuously afford the protection commensurate with the degree of hazard.

“Cross-connection” means any actual or potential connection or structural arrangement between a public water system, including a piping system connected to the public water system and located on the premises of a water user or available to the water user, and any source or distribution system containing liquid, gas, or other substances not from an approved water supply.

“Cross-connection control specialist” means a person who is certified as a cross-connection control specialist.

“Customer,” “consumer,” or “user” means the owner or operator of a private water system served by the District’s water system.

“Destroyed Well” Shall mean any well which has been destroyed per the Marin County Environmental Health Services (EHS) or Sonoma County Environmental Health Services (EHS) permitting process. Additionally, all applicable documentation provided by the Marin County EHS or Sonoma County EHS stating the well has been properly destroyed must be submitted to the District.

“District Backflow Prevention Assembly Tester” shall be a Backflow Prevention Assembly General Tester with current CA-NV AWWA certification.

“Double check detector backflow prevention assembly” or “DCDA” means a double check valve backflow prevention assembly that includes a bypass with a water meter and double check backflow prevention assembly, with the bypass’s water meter accurately registering flow rates up

to two gallons per minute and visually showing a registration for all rates of flow. This type of assembly may only be used to isolate low hazard cross-connections.

“Double check valve backflow prevention assembly” or “DC” means an assembly consisting of two independently-acting internally-loaded check valves, with tightly closing shut-off valves located at each end of the assembly (upstream and downstream of the two check valves) and fitted with test cocks that enable accurate field testing of the assembly. This type of assembly may only be used to isolate low hazard cross-connections.

“Hazard Assessment” means an evaluation of a user premises designed to evaluate the types and degrees of hazard at a user’s premises.

“Hazardous Substances” means any hazardous waste or hazardous substance as defined in any federal, state or local ordinance, rule or regulation.

“High hazard cross-connection” means a cross-connection that poses a threat to the potability or safety of the public water supply. Materials entering the public water supply through a high hazard cross-connection are contaminants or health hazards.

“Low hazard cross-connection” means a cross-connection that has been found to not pose a threat to the potability or safety of the public water supply but may adversely affect the aesthetic quality of the potable water supply. Materials entering the public water supply through a low hazard cross-connection are pollutants or non-health hazards.

“Manual of Cross-Connection Control” shall refer to the most current edition of the Manual of Cross-Connection Control as published by the University of Southern California’s Foundation for Cross-Connection Control and Hydraulic Research.

“Objectionable Substance” means a substance introduced into the District’s water supply that may not necessarily pose a threat to public health, but may adversely affect the taste, appearance or other aesthetic qualities of the potable water supply.

“OS&Y Valve” An outside stem and yoke (OS&Y) valve is a type of control valve that's often used in fire sprinkler systems to manage water flow. The valve's name comes from the two distinctive features it has: an outside screw that indicates the valve's position, and a yoke that holds the valve's screws.

“Premises containment” means protection of a public water system’s distribution system from backflow from a user’s premises through the installation of one or more air gaps or BPAs, installed as close as practical to the user’s service connection, in a manner that isolates the water user’s water supply from the public water system’s distribution system.

“Pollution” shall mean an impairment of the quality of the water to a degree which does not create a hazard to the public health, but which does adversely and unreasonably affect the aesthetic qualities of such waters for domestic use.

“Recycled Water" is a wastewater which as a result of treatment is suitable for uses other than potable use.

“Reduced pressure principle backflow prevention assembly” or “RP” means an assembly with two independently acting internally-loaded check valves, with a hydraulically operating mechanically independent differential-pressure relief valve located between the check valves and below the

upstream check valve. The assembly shall have shut-off valves located upstream and downstream of the two check-valves, and test cocks to enable accurate field testing of the assembly.

“Reduced pressure principle detector backflow prevention assembly” or “RPDA” means a reduced pressure principle backflow prevention assembly that includes a bypass with a water meter and reduced pressure principle backflow prevention assembly, with the bypass’s water meter accurately registering flow rates up to two gallons per minute and visually showing a registration for all rates of flow.

“User premises” means the property under the ownership or control of a water user and is served, or is readily capable of being served, with water via a service connection with a public water system.

“User’s service connection” means either the point where a water user’s piping is connected to a water system or the point in a water system where the approved water supply can be protected from backflow using an air gap or backflow prevention assembly.

2 Responsibility

Responsibility for protection of the public water system is shared by the District and the customer.

2.1 Ownership

As of 7/1/2024, all BPA's installed as required by the District's CCC program will be customer-owned with the following exceptions:

- Below grade BPA's in District meter box or District vault Shall be District-owned.
- Above grade District-owned BPA's shall remain District-owned until time of replacement, at which time ownership shall be transferred to the customer. No installation charge shall be applied to the customer for such replacement.

On 1/1/2025, any District Owned BPA that was replaced by the District since 1/1/2020 with an approved above grade BPA shall be transferred to the customer. No retroactive installation charge shall be applied to the customer for such replacement.

2.2 Annual Testing

All BPA's installed pursuant to Regulation 6 must be field tested following installation, repair, or relocation as well as annually. Installed BPA's may be inspected and/or tested by the District or others at the sole discretion of the District. Inspection and testing will be at the customer's expense. Field testing will be conducted only by individuals certified by the California-Nevada Section of the American Water Works Association (CA-NV AWWA) as Backflow Prevention Assembly General Testers. Testers must have a current general tester certification as well as current test kit calibration on file with the District prior to submitting test report. The District maintains and annually revises a list of local Backflow Prevention Assembly Testers to provide to customers for testing and installation requirements.

Notice to test BPA will be sent annually to all customers with BPA's at service connections. Exceptions of notice include BPA's owned and tested annually by the District. A test report must be submitted to the District within 30 days of notice that an inspection is due. If a customer fails to submit a test report within 30 days of the due date, the District may shut off water service to the premises per NMWD regulation 55.

All Cross-Connection Control Dept. related communications will be mailed to the customer's billing address used for the District water utility bill.

2.3 District Responsibility

The water supplier has primary responsibility for protecting the public water system from contamination and/or pollution occurring through backflow by preventing water from unapproved sources or any other substances from entering the distribution system. As a water supplier, the District shall protect the public water supply from contamination and/or pollution by implementing a Cross-Connection Control Program.

The State Water Resources Control Board Cross-Connection Control Policy Handbook (CCCPH) and its standards apply to all California PWSs, as defined in California's Health and Safety Code (CHSC, section 116275 (h)). Compliance with this CCCPH is mandatory for all California PWSs.

The District fulfills its responsibility by requiring point of service connection protection at all existing service connections that have been surveyed and found to have existing actual and/or potential hazards to the public water system. The District does not recognize internal cross-connection protection programs and/or internal backflow protection assemblies in lieu of point of service connection protection as described herein.

2.3.1 Compliance Enforcement

If it is determined that a backflow prevention assembly is required, the installation of such an assembly shall be a condition of continued water service. The customer shall be notified in writing and given no more than 30 calendar days from the date of the initial notice to comply. If a customer fails to comply, then the District shall proceed with enforcement up to and including termination of water service to the parcel being served.

In the event the District determines a customer's water system poses an immediate health risk to the public water supply, the District reserves the right to immediately terminate water service without prior notification as is required to comply with the CCCPH.

2.3.2 Hazard Assessments

A Cross-Connection Control Hazard Assessment shall be performed by District staff certified as an American Water Works Association (AWWA) Cross-Connection Control Program Specialist (Specialist). The District shall conduct Hazard Assessments of all service connections and premises in the District service area, including premises that have existing backflow protection.

To evaluate the potential for backflow into the distribution system, the District must conduct an initial hazard assessment of the user premises within its service area. Non-residential services will be prioritized over residential services for initial hazard assessment. The process for initiating hazard assessment shall be at the District's Cross-Connection Control Department's discretion. The hazard assessment must consider:

- The existence of cross-connections;
- the type and use of materials handled and present, or likely to be, on the user premises;
- the degree of piping system complexity and accessibility;
- access to auxiliary water supplies, pumping systems, or pressure systems;
- distribution system conditions that increase the likelihood of a backflow event (e.g., hydraulic gradient differences impacted by main breaks and high water demand situations, multiple service connections that may result in flow-through conditions, etc.);
- user premises accessibility;
- any previous backflow incidents on the user premises; and
- the requirements and information provided in the CCCPH.

Each hazard assessment must identify the degree of hazard to the distribution system as either a high hazard cross-connection, a low hazard cross-connection, or having no hazard. The hazard assessment must determine whether an existing BPA, if any, provides adequate protection based on the degree of hazard.

Subsequent to the initial hazard assessment the District must perform a hazard assessment under the following criteria:

- if a user premises changes account holder, excluding single-family residences;
- if a user premises is newly or re-connected to the District distribution system;
- if evidence exists of changes in the activities or materials on a user's premises;
- if backflow from a user's premises occurs;
- if the State Water Board requests a hazard assessment of a user's premises; and
- if the District concludes an existing hazard assessment may no longer accurately represent the degree of hazard.

A District cross-connection control specialist must review or conduct each initial and follow up hazard assessment pursuant to this section and make a written finding that, in the specialist's judgment based on cross-connection control principles, the District's hazard assessment properly identified all hazards at the time of the assessment, the appropriate degree of hazards, and the corresponding backflow protection.

If an actual or potential hazard is determined to exist, a BPA shall be installed by the customer in accordance with current District specifications upon notification. All expenses of the installation shall be the customer's responsibility. Existing premises not required to install a BPA as a result of a Hazard Assessment shall be subject to subsequent regular Hazard Assessments for the purpose of confirming continued compliance pursuant to this Program.

Initial single-family residence hazard assessment:

- A questionnaire shall be sent to each customer by the same method used for billing purposes (postal service or email). The language used shall be able to be interpreted by individuals regardless of their familiarity with water industry terminology. Hazards or non-hazards shall be confirmed by recipient with a true / false – yes / no answer. A master copy of the questionnaire shall be found in the Districts Cross-Connection Control and Prevention of Backflow Manual appendix II – Forms.
- The questionnaire recipient will be given 30 days to respond. Recipients shall respond through online submittal on the District website's Backflow Prevention section, drop off at District office, or through USPS. Responses not received within 30 days shall have a final notice that cites CCCPH Appendix D line item 35 as well as including a second copy of the original questionnaire sent via USPS to the account listing address.
- If the District has not received a response within 15 days of the second notice, District staff will call the phone number associated with the account listing address on file to assist in completing the questionnaire requirement. If all attempts are unsuccessful, District staff will perform a hazard assessment of the premise.
- All initial hazard assessments shall be completed within 10 years of the adoption of this manual.

Initial non-single-family residence hazard assessment:

- A District cross-connection control specialist shall perform an initial hazard assessment of each service connection in the distribution system. Hazard assessments shall be conducted at the service connection location at a minimum, and may involve, in the specialist's judgement, a comprehensive assessment downstream of the District's service connection.

- All initial hazard assessments shall be completed within 10 years of the adoption of this manual.

2.3.3 District Responsibility Regarding Backflow Prevention Assembly Inspection, Testing and Repair

During installation and prior to covering trenches, the District shall visually inspect the connection and entire length of pipeline from the meter or service connection to the downstream side of the Approved Backflow Prevention Assembly (BPA) before District acceptance. The District will perform initial testing of all assemblies installed by the District. The District will perform annual testing on all assemblies owned by the District. District may elect, in its sole discretion, to assign any or all annual testing, repair, and assembly replacement responsibilities to a duly authorized representative with prior written authorization. Repairs of a District owned BPA shall be performed by the District.

If the District replaces a District owned assembly, the customer will be notified of the District requirement to transfer ownership of the new BPA from the District to the customer. Exceptions to the transfer of ownership will be determined by the District on an individual basis. See section 2.1

2.4 Customer Responsibilities

The customer will have the prime responsibility of preventing contaminants and/or pollutants from their water systems entering the public water system.

2.4.1 Customer Responsibilities Regarding Backflow Prevention Assembly Installation, Inspection, Testing, and Repair.

The customer shall be responsible for the cost of installation of all BPA's required in accordance with this Program. Upon notification by the District, the customer shall repair or replace existing customer owned BPA's that fail annual testing, are defective, damaged, or do not provide the level of protection specified by this program, and those BPA's not meeting requirements of section 4. All installations shall comply with the Uniform Plumbing Code and the District's current Design and Construction Standards. The customer shall contact the District to request necessary inspections prior to covering pipe and/or connections associated with the installation.

Any repair or replacement of internal or external components including, but not limited to, assembly housing, shut-off valve, or relief valve housing shall be performed by the customer and subject to inspection by the District. Any replacement of irreparable assembly or installation of a new BPA shall be performed by the customer and subject to inspection by the District.

The customer shall be responsible for all costs that customer determines are necessary for the installation of pumps or renovation of existing customer piping, as a result of any decreases in line pressure or flow attributed to upgrading or installing a BPA.

The customer shall provide unimpeded access to backflow prevention assemblies for routine testing, inspection, and repairs. The District recognizes the potential of freeze damage to BPAs and associated above ground piping. Commercially available insulated "soft" covers are authorized to be installed by the customer for the purpose of freeze protection if such cover provides access for required testing and maintenance by the District or the customer. Insulated "soft" covers on above grade DCDA's shall not visually obstruct OS&Y valves from an inspection to determine valving is in the open position.

3 Minimum Backflow Protection Levels

Minimum protection levels shall be determined by the District. The list below identifies premises that require backflow protection provided by an air gap or a reduced pressure principle backflow prevention assembly, unless noted otherwise. The list below is not intended to be all-inclusive. The District, State Water Board, or local health agency may require an AG, RP, or both to protect the District from other hazards not listed below and identified in premises through the hazard assessment completed in CCCPH Chapter 3, section 3.2.1. The District may reduce or increase the minimum protection required for a previously hazard-assessed user premise following a hazard reassessment as described in CCCPH Chapter 3, section 3.2.1.

a) All non-residential connections
b) Premises determined by the District to have unusually complex plumbing configurations that cannot be adequately evaluated
c) Premises with limited access or that deny access to the District for internal inspections
d) Each service connection that supplies water to Premises on which any substance is or may be handled in such a manner as to permit entry into the public water system, including water originating from the public water system which is or may be subjected to deterioration in sanitary quality
e) Premises where there are irrigation systems into which fertilizers, herbicides, or pesticides are, or can be injected
f) Premises where a cross connection exists, or the potential for one that could result in the pollution or contamination of the public water system
g) Residential parcels used for business purposes determined by the District to pose a threat to the public water system
h) Sewage handling facilities
i) Wastewater lift stations and pumping stations
j) Wastewater treatment processes, handling, or pumping equipment that is interconnected to a piping system connected to a PWS (+)
k) Petroleum processing or storage plants
l) Radioactive material storage, processing plants or nuclear reactors
m) Mortuaries
n) Cemeteries
o) Sites with an auxiliary water supply interconnected with PWS (+)
p) Sites with an auxiliary water supply not interconnected with PWS
q) Premises with more than one connection to the PWS (++++)
r) Recycled water (++)(+++)
s) Recycled water interconnected to piping system that contains water received from a PWS (+)
t) Graywater systems, as defined in California Water Code Section 14876, that are interconnected to a piping system that is connected to a PWS
u) Medical facilities
v) Kidney dialysis facilities
w) Dental office with water-connected equipment
x) Veterinarian facilities
y) Chemical plants
z) Laboratories
aa) Biotech facilities
bb) Electronics manufacture
cc) Dry cleaner facilities
dd) Industrial or commercial laundry facilities
ee) Metal-plating facilities

ff) Business park with a single meter serving multiple businesses
gg) Marine-port facilities
hh) Car wash facilities
ii) Mobile home park, RV park, or campgrounds with RV hookups
jj) Hotels/motels
kk) Gas stations
ll) Fire stations
mm) Solid waste disposal facilities
nn) Pet groomers
oo) Agricultural premises
pp) Hazard assessment access denied or restricted
qq) Railroad maintenance facilities
rr) Incarceration facilities (e.g. prisons)
ss) Temporary connections to fire hydrants for miscellaneous uses, including construction
tt) Private water distribution mains
uu) Drinking water storage tank overflow connected to a sump or storm drain (+)
vv) Airports

(+) Premise isolated by air gap only except as allowed through CCCPH Section 3.2.2(c)

(++) Dual-plumbed use areas established per CCR Title 22, Section 60313 through 60316.

(+++) Residences using recycled water for landscape irrigation as part of an approved dual plumbed use area established pursuant to CCR Title 22, sections 60313 through 60316 shall use, at a minimum, a DC. If the water supplier is also the supplier of the recycled water, then the recycled water supplier may obtain approval of the local public water supplier or the State Water Board, to utilize an alternative backflow protection plan that includes an annual inspection of both the recycled water and potable water systems and an annual cross-connection test of the recycled water and potable water systems pursuant to subsection 60316(a) in lieu of any BPA.

(++++) All connections must receive at least the same level of protection excluding fire protection when connected to the PWS distribution system (e.g. if one connection requires an RP then all connections must have RPs installed).

Nothing in this Program shall be construed as affecting customer's responsibility for meeting the local fire district's fire system flow requirements. Nothing in a local fire district's fire flow system requirements shall be construed as affecting customer's responsibility for meeting the requirements of this Program.

3.1 Non-Residential Service Connections

Non-Residential premises determined to have a Cross-Connection hazard as defined in this Program shall be required to install an BPA. Non-residential connections are subject to District Hazard Assessment. The District must be provided unimpeded access to perform internal inspections for the purpose of determining cross-connection hazards. If District access is impeded for any reason, then the customer will be required to install a minimum of a RP.

3.2 Residential Service Connections

Residential premises determined to have a Cross-Connection hazard as defined in this Program shall be required to install an BPA. Residential service connections are subject to District Hazard Assessment. The District must be provided unimpeded access to perform internal inspections for

the purpose of determining cross-connection hazards. If District access is impeded for any reason, then the customer will be required to install a minimum of a RP.

3.3 New Non-Residential Fire Suppression System Connections

All new non-residential fire suppression system connections 2 ½" or greater shall be protected with an approved minimum of a DCDA installed according to District specifications.

All new non-residential fire suppression system connections 2" or less shall be protected with an approved minimum of a DC installed according to District specifications.

The following list of circumstances shall require a minimum of a RP for 2" or less or RPDA for 2 ½" or greater.

- A high hazard cross-connection fire protection system, including but not limited to fire protection systems that may utilize chemical addition (e.g., wetting agents, foam, anti-freeze, corrosion inhibitor, etc.) or an auxiliary water supply.

3.4 Existing Non-Residential Fire Suppression System Connections

Existing District owned BPA's or Detector Checks for Non-residential fire suppression systems will be allowed to continue in service until such system is modified, updated, or improved. If existing protection is determined inadequate or is modified, improved, or updated as identified under this Program, the District shall replace the existing BPA or detector check and install a minimum of a DC for services 2" or less and a DCDA for services 2 ½" or greater at the point of connection to District water system according to District specifications. The following list of circumstances shall require a minimum of a RP for 2" or less or RPDA for 2 ½" or greater.

- A high hazard cross-connection fire protection system, including but not limited to fire protection systems that may utilize chemical addition (e.g., wetting agents, foam, anti-freeze, corrosion inhibitor, etc.) or an auxiliary water supply.

Upon replacement of BPA by the District, ownership of the BPA shall be transferred to the customer.

3.5 Residential Fire Suppression System Connections

A residential fire service is a connection which is used both for fire protection and to provide domestic water to the premises. Except as noted below, backflow protection at the meter of no less than DC protection shall be required.

- A high hazard cross-connection fire protection system, including but not limited to fire protection systems that may utilize chemical addition (e.g., wetting agents, foam, anti-freeze, corrosion inhibitor, etc.) or an auxiliary water supply must have no less than RP protection.

- A BPA is not necessary for a low hazard fire protection system on a residential user premises if <u>ALL</u> the following criteria are satisfied:

  A. the user premises has only one service connection to the PWS;
  B. a single service line onto the user premises exists that subsequently splits on the property for domestic flow and fire protection system flow, such that the fire protection system may be isolated from the rest of the user premises;

C. a single, water industry standard, water meter is provided to measure combined domestic flow and fire protection system flow;
D. the fire protection system is constructed of piping materials certified as meeting NSF/ANSI Standard 61;
E. the fire protection system's piping is looped within the structure and is connected to one or more routinely used fixtures (such as a water closet) to prevent stagnant water; and
F. user premises has been determined not to contain any other hazards requiring a BPA per section 2.3.2.

If the District determines the existing fire suppression system connections have inadequate protection as described under this Program, upon notification the customer shall install a minimum of a DC according to District specifications. The customer shall be responsible for meeting local fire district's fire system flow requirements.

3.6 Temporary Meter Connection

Temporary meter connections to District hydrants, blow-offs, or other District infrastructure shall be protected with a minimum of a RP. The temporary meter and RP shall be installed by a District Backflow Prevention Assembly General Tester upon customer submittal of appropriate request form and accompanying deposit to the District. The location of the installed temporary meter connection shall be determined by the District in its sole discretion following review of request form. Customer shall access water at approved location through District-installed gate valve located downstream of RP. Under no circumstances shall customer operate hydrant, blow-off, or other District infrastructure. Each RP must be retested by a District Backflow Prevention Assembly General Tester upon relocation, and annually thereafter until permanent removal of temporary BPA.

3.7 Auxiliary Water Supply

Any parcel served by District water service that is determined to have an Auxiliary Water Supply, whether or not it is interconnected with the District water system, shall be required to have a minimum of RP protection.

3.8 Non-Residential Recycled Water Parcels

All non-residential premises receiving recycled water service shall be required to install a minimum of a RP on all potable service connections serving the same premises.

4 Backflow Prevention Assemblies

Only BPA's on the current University of Southern California Foundation for Cross-Connection Control and Hydraulic Research Approved Backflow list shall be installed and accepted for District water system service protection.

5 Backflow Incident Response Procedure

Responses to all District water supply water quality issues is outlined in the NMWD Emergency Response Plan under section 8.

6 Enforcement

Failure to comply with any term and condition prescribed herein and/or the CCCPH and California Health and Safety Code may result in enforcement action against the customer including, but not limited to, termination of water service. Violations of Regulation 6, as implemented by this Program, may result in fines and/or penalties. Fines and/or penalties shall be set forth in the District Regulation 55.

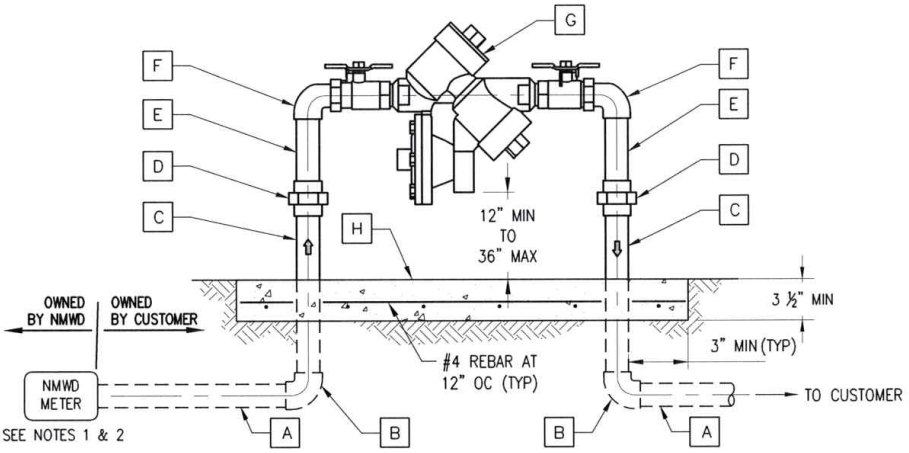
Appendix A
Construction Standards / Detail Sheets

19A: Above Grade Reduced Pressure Principal Backflow Prevention Assembly ¾" through 2"…… 15

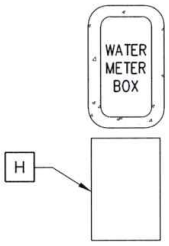
19B: Above Grade Reduced Pressure Principal Backflow Prevention Assembly ¾" through 2" (parallel installation)…….. 16

19C: Above Grade Reduced Pressure Principal Backflow Prevention Assembly 2" through 8" ……. 17

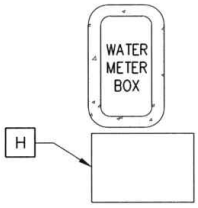
17B: Fire Service Above Grade Double Check Detector Assembly 2-1/2" through 8"..18



ITEM	DESCRIPTION	QUANTITY
A	NIPPLE/PIPE – FIELD FIT	2
B	90° ELBOW	2
C	NIPPLE/PIPE – FIELD FIT	2
D	UNION FEMALE (NOT REQUIRED IF USING COPPER)	2
E	6" NIPPLE (NOT REQUIRED IF USING COPPER)	2
F	90° STREET ELBOW	2
G	BACKFLOW PREVENTION ASSEMBLY – WILKINS 975XL2 OR APPROVED EQUAL (SEE NOTE 1)	1
H	CONCRETE PAD PER NMWD STD SPECIFICATION 03300	1



CONCRETE PAD LAYOUT
(ASSEMBLY INLINE WITH METER)



CONCRETE PAD LAYOUT
(ASSEMBLY AT 90° TO METER)

NOTES:

1. REFER TO SPECIFICATION SECTION 15112 FOR BACKFLOW REQUIREMENTS.
2. NO OUTLET, TAP, TEE OR ANY OTHER TYPE OF CONNECTIONS WILL BE ALLOWED BETWEEN THE METER AND THE ASSEMBLY.
3. THE ASSEMBLY SHALL BE INSTALLED AS CLOSE TO THE METER AS POSSIBLE.
4. INSPECTION BY THE DISTRICT SHALL TAKE PLACE PRIOR TO ANY BACKFILL.
5. ASSEMBLY SHALL BE ACCESSIBLE TO THE DISTRICT FOR TESTING.
6. ALL ABOVE GROUND MATERIAL SHALL BE BRASS OR TYPE K COPPER.
7. ALL INSTALLS SHALL BE LEVEL, PLUMB AND TRUE.
8. CONCRETE PAD SHALL BE A MINIMUM WIDTH OF THE METER BOX. ASSEMBLY SHALL BE CENTERED ON CONCRETE PAD.
9. ENCLOSURE CAGE OR INSULATION BLANKET IS OPTIONAL.
10. ALL ASSEMBLIES WILL BE OWNED FROM CUSTOMER SIDE OF THE METER AS SHOWN.

NOT TO SCALE

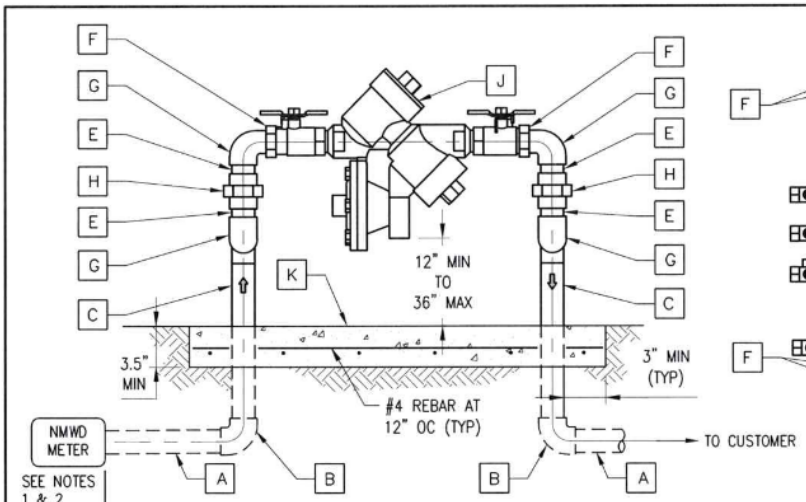
NORTH MARIN WATER DISTRICT
NOVATO, CALIFORNIA

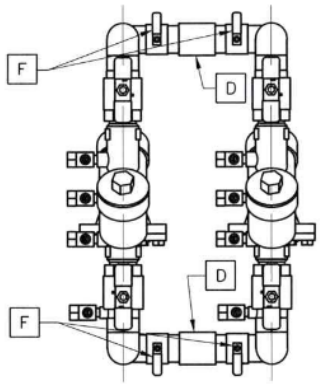
ABOVE GRADE REDUCED PRESSURE PRINCIPAL BACKFLOW PREVENTION ASSEMBLY
3/4" THROUGH 2"

APPROVED	DATE	REV.	STD. NO.
	02/02/23	1	19A

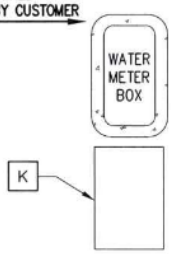
NMWD STANDARD 19 SPLIT INTO STANDARDS 19A AND 19B

Feb 28, 2023 – 4:29pm W:\JOB\MISC\STD\19A.dwg User: SDOVE

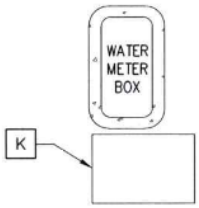




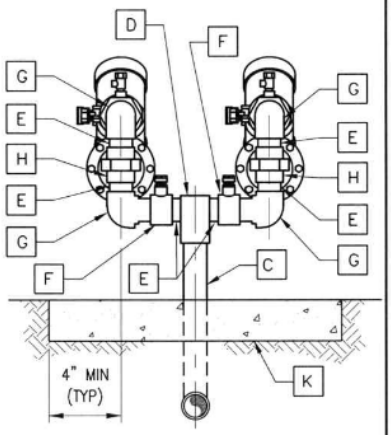
PLAN VIEW



CONCRETE PAD LAYOUT
(ASSEMBLY INLINE WITH METER)



CONCRETE PAD LAYOUT
(ASSEMBLY AT 90° TO METER)



PROFILE VIEW

ITEM	DESCRIPTION	QUANTITY
A	NIPPLE/PIPE – FIELD FIT	2
B	90° ELBOW	2
C	NIPPLE/PIPE – FIELD FIT	2
D	TEE	2
E	CLOSE NIPPLE (NOT REQUIRED IF USING COPPER)	12
F	BALL VALVE	4
G	90° STREET ELBOW	8
H	UNION FEMALE (NOT REQUIRED IF USING COPPER)	4
J	BACKFLOW PREVENTION ASSEMBLY – WILKINS 975XL2 OR APPROVED EQUAL (SEE NOTE 1)	2
K	CONCRETE PAD PER NMWD SPECIFICATION 03300	1

NOTES:

1. REFER TO SPECIFICATION SECTION 15112 FOR BACKFLOW REQUIREMENTS.
2. NO OUTLET, TAP, TEE OR ANY OTHER TYPE OF CONNECTIONS ALLOWED BETWEEN THE METER AND THE ASSEMBLY.
3. THE ASSEMBLY SHALL BE INSTALLED AS CLOSE TO THE METER AS POSSIBLE.
4. INSPECTION BY THE DISTRICT SHALL TAKE PLACE PRIOR TO ANY BACKFILL.
5. ASSEMBLY SHALL BE ACCESSIBLE TO THE DISTRICT FOR TESTING.
6. ALL ABOVE GROUND MATERIAL SHALL BE BRASS OR TYPE K COPPER.
7. ALL INSTALLS SHALL BE LEVEL, PLUMB, AND TRUE.
8. CONCRETE PAD SHALL BE A MINIMUM WIDTH OF THE METER BOX. ASSEMBLY SHALL BE CENTERED ON CONCRETE PAD.
9. ENCLOSURE CAGE OR INSULATION BLANKET IS OPTIONAL.
10. ALL ASSEMBLIES WILL BE OWNED FROM CUSTOMER SIDE OF THE METER AS SHOWN.

NOT TO SCALE

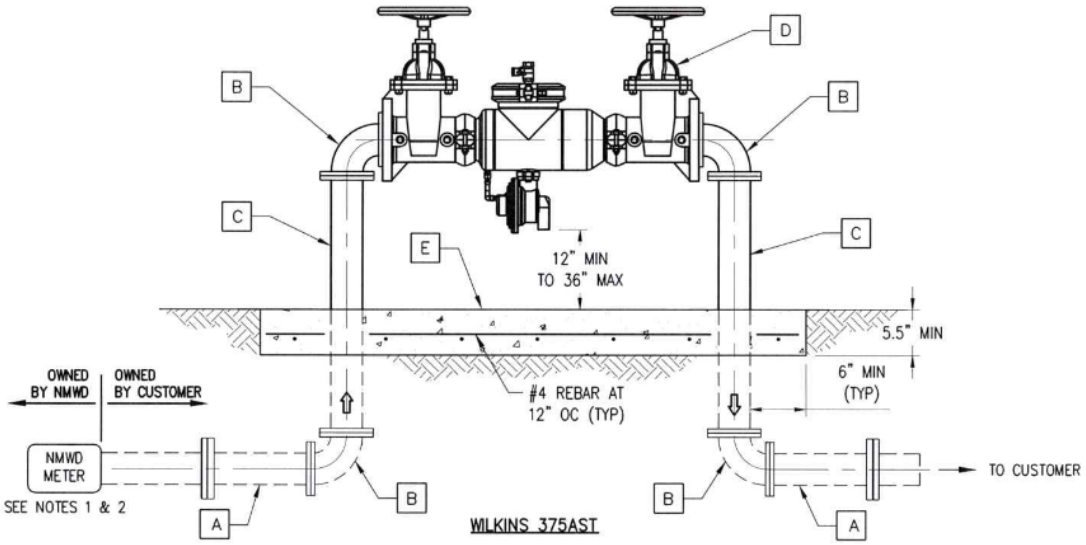
NORTH MARIN WATER DISTRICT
NOVATO, CALIFORNIA

ABOVE GRADE REDUCED PRESSURE PRINCIPAL BACKFLOW PREVENTION ASSEMBLY
3/4" THROUGH 2" (PARALLEL INSTALLATION)

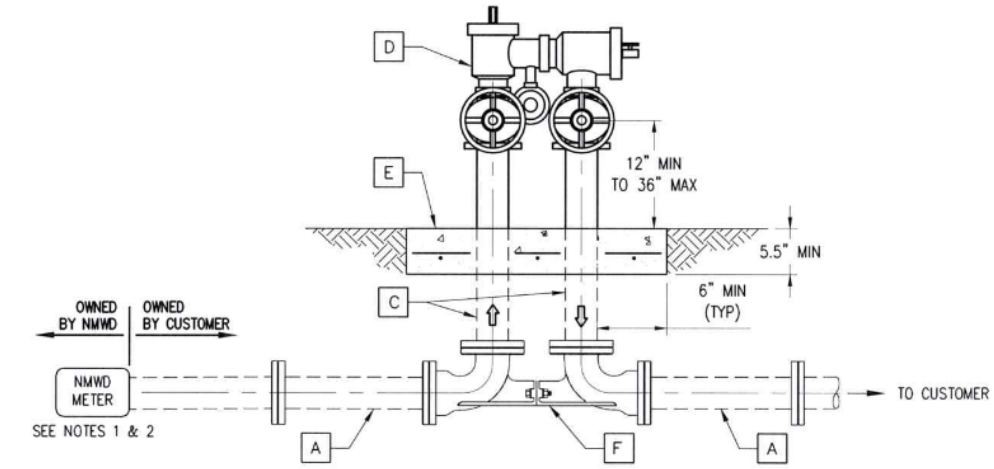
APPROVED	DATE	REV.	STD. NO.
	02/02/23	2	19B

NMWD STANDARD 19 SPLIT INTO STANDARDS 19A AND 19B

Feb 28, 2023 - 4:29pm W:\JOB\MISC\STD\19B_rev2.dwg User: SDOVE



WILKINS 375AST



WILKINS 475ST

NOTES:

1. REFER TO SPECIFICATION SECTION 15112 FOR BACKFLOW REQUIREMENTS.
2. NO OUTLET, TAP, TEE OR ANY OTHER TYPE OF CONNECTIONS WILL BE ALLOWED BETWEEN THE METER AND THE ASSEMBLY.
3. THE ASSEMBLY SHALL BE INSTALLED AS CLOSE TO THE METER AS POSSIBLE.
4. INSPECTION BY THE DISTRICT SHALL TAKE PLACE PRIOR TO ANY BACKFILL.
5. ASSEMBLY SHALL BE ACCESSIBLE TO THE DISTRICT FOR TESTING.
6. ALL ABOVE GROUND MATERIAL SHALL BE BRASS OR TYPE K COPPER.
7. ALL INSTALLS SHALL BE LEVEL, PLUMB AND TRUE.
8. CONCRETE PAD SHALL BE A MINIMUM WIDTH OF THE METER BOX. ASSEMBLY SHALL BE CENTERED ON CONCRETE PAD.
9. ENCLOSURE CAGE OR INSULATION BLANKET IS OPTIONAL.
10. ALL ASSEMBLIES WILL BE OWNED FROM CUSTOMER SIDE OF THE METER AS SHOWN.
11. IF PARALLEL ASSEMBLIES ARE REQUIRED, CONSULT WITH DISTRICT ON DESIGN DETAILS.

ITEM	DESCRIPTION	QUANTITY	
		375AST	475ST
A	SPOOL – FIELD FIT	2	2
B	90° ELBOW	4	0
C	SPOOL – FIELD FIT	2	2
D	REDUCED PRESSURE PRINCIPLE ASSEMBLY	1	1
E	CONCRETE SLAB PER NMWD SPEC 03300	1	1
F	SETTER	0	1

NOT TO SCALE

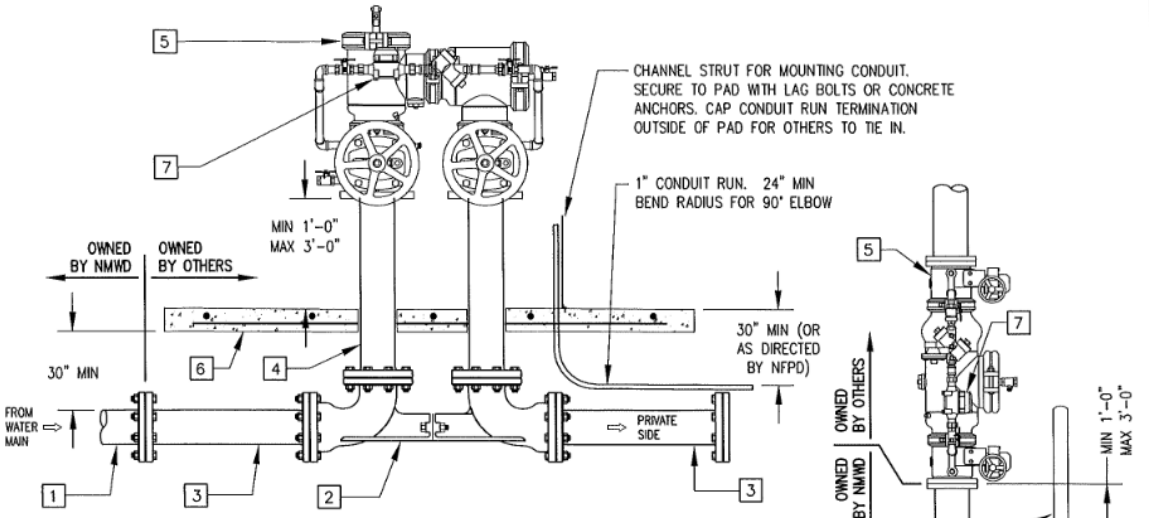
NORTH MARIN WATER DISTRICT
NOVATO, CALIFORNIA

ABOVE GRADE REDUCED PRESSURE PRINCIPAL BACKFLOW PREVENTION ASSEMBLY
2.5" THROUGH 8"

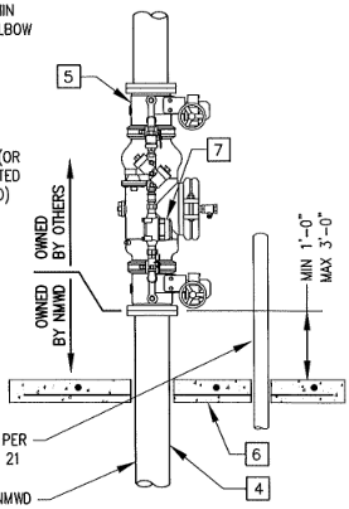
APPROVED	DATE	REV.	STD. NO.
	02/02/23	1	19C

THIS STANDARD WAS PREVIOUSLY NMWD STANDARD 19B

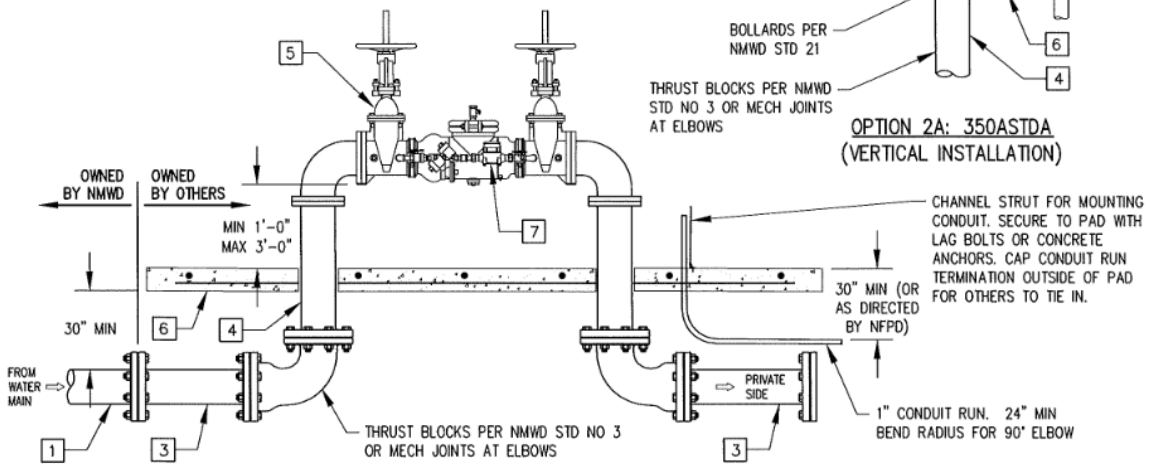
Mar 03, 2023 – 1:54pm W:\JOB\MISC\STD\19C.dwg User: SDOVE



OPTION 1: 450STDA (PREFERRED)



OPTION 2A: 350ASTDA
(VERTICAL INSTALLATION)



OPTION 2B: 350ASTDA (HORIZONTAL INSTALLATION)

	PARTS LIST:	SIZE OF FIRE SERVICE				
		2-1/2"	3"	4"	6"	8"
1	TRANSITION COUPLING/ FLANGED COUPLING ADAPTER	USE LATERAL SIZE				
2	SETTER, THRUST BLOCKS, OR MECH JOINTS ACCEPTABLE	APOLLO OR WILKINS				
3	DUCTILE IRON OR STAINLESS STEEL SPOOL (24" LENGTH MIN) PAST EXTENT OF CONCRETE	USE LATERAL SIZE				
4	DUCTILE IRON OR STAINLESS STEEL SPOOL TO MEET HEIGHT REQUIREMENTS (PAINTED OR WRAPPED)					
5	DCDA WITH OS&Y WHEEL OPERATOR OR BUTTERFLY VALVE WITH POSITION INDICATOR (AND GATE VALVES)	WILKINS 350ASTDA	WILKINS 350ASTDA	WILKINS 350ASTDA OR 450STDA	WILKINS 350ASTDA OR 450STDA	WILKINS 350ASTDA OR 450STDA
6	CONCRETE PAD PER NMWD STD SPEC SECTION 03300 (4" MIN THICKNESS)					
7	5/8" AMI METER WITH ABOVE GRADE ANTENNA MOUNT					

NOTES:

1. TO THE EXTENT POSSIBLE ALL NEW DCDAs WILL BE ABOVE GRADE AND INCLUDE TAMPER SWITCHES. TAMPER SWITCHES INSTALLED BY OTHERS.
2. DCDA WILL BE OWNED, MAINTAINED AND TESTED BY THE OWNER PER NMWD REGULATION 6.
3. ALL ABOVE GRADE PIPE MUST BE VERTICAL AND PARALLEL.
4. ALL DCDAs SHALL INCLUDE TYPE 1 BYPASS (GALLONS, AMI) WITH ANTENNA MOUNT.
5. WILKINS 350ASTDA CAN BE USED INLINE OR FOR LONGER LAY LENGTHS UPON DISTRICT APPROVAL.
6. WILKINS 475STDA OR 375ASTDA CAN BE USED IF RPDA IS REQUIRED BASED ON DISTRICT APPROVAL.
7. MINIMUM 1'-0" HORIZONTAL SETBACK (ALL SIDES).

NORTH MARIN WATER DISTRICT
NOVATO, CALIFORNIA

FIRE SERVICE
ABOVE GRADE
DOUBLE CHECK DETECTOR ASSEMBLY
SIZE: 2-1/2" THROUGH 8"

APPROVED	DATE	REV.	STD. NO.
	03/24/22	2	17B

Mar 24, 2022 - 1:25pm W:\JOB\MISC\STD\17B_rev2.dwg User: SDOVE

Appendix B
Forms

Hazard Assessment Form…..…….. 20

Backflow Incident Report Form….…….. 21

On-Site Water Use Questionnaire – Residential / Single Family ….…….. 25

Draft Hazard Assessment Matrix

HAZARD ASSESSMENT: Initial **Follow up**: Account Change/ New Connection / Change Activities or Materials/ Incident/ No Longer Accurate/Periodic/SWRCB Request **Date**.....

Site Name: ..... **Site Address:**..... **Site Contact**.....

APN:..... **Water Account Number:**..... **Premise Type:** Residential ..... Commercial..... Industrial.....

Community Systems Meter Protection Premise Survey **Noncommunity Point Use System Survey**

Water Service Type:	Number of Services	Service Size	Existing Backflow Protection	Existing Protection Approved Yes or No Has the backflow preventer been modified, installation meet standards?	Recommended Corrective action if needed
Domestic					
Fire					
Irrigation					
Other					
Other					
Other					
Other					
Other					

(1) The existence of cross-connections; Yes / No Explain:.....

- Backflow Protection:.....

(2) the type and use of materials handled and present, or likely to be, on the user premises; Explain:.....

(3) the degree of piping system complexity and accessibility; Simple System .....Multi piping System ..... Low Complexity .....High Complexity..... Other.....

- is a "User Supervisor" required for this premise? ..... Do you recommend that one needs to be appointed?.....

(4) access to auxiliary water supplies, pumping systems, or pressure systems; Auxiliary Water System..... Pumping System..... Pressure System.....

(5) distribution system conditions that increase the likelihood of a backflow event (e.g., hydraulic gradient differences impacted by main breaks and high-water demand situations, multiple service connections that may result in flow-through conditions, etc.); Hydraulic Grade Line..... High Water Demand..... Looped Systems.....

(6) user premises accessibility; Open Access..... Restricted ..... Critical Water User..... Other.....

(7) any previous backflow incidents on the user premises; **Yes**..... **No**.....

Premise History Review - Verified History of the Premise..... Customer Call Logs..... Service Requests..... Work Orders.....

and **(8) the requirements and information provided in the CCCPH**.

- **Degree of Hazzard: High Hazard** (Contaminants or Health hazard. See Appendix D for a list) **Low Hazard** (Pollutants or Non-health Hazards) **No Hazard**

Specialist Completion **Specialist Review** **Corresponding Backflow Protection:** **AG** **RP** **DC** **Other**

Existing backflow protection: Properly Installed Continued Operation (Properly Maintained) Field Tested (Yearly Cert.) Approval OK (Not Modified)

Notes:

BACKFLOW INCIDENT REPORT FORM

Water System: _____

Water System Number: _____

Incident Date: _____

Incident Time (if known):_____

Incident Location: _____

How was the incident discovered?

_____

Backflow Originated from:

Premise Location: _____

Address: _____

Premise Contact Person: _____ Title:_____

Phone:_____ Email: _____

Connection Type: (please check one)

☐ Industrial ☐ Commercial ☐ Single-Family Residential ☐ Multi-Family Residential

☐ Irrigation ☐ Recycled Water ☐ Water System Facility

☐ Other: _____

Description and source of backflow substance (please be as descriptive as possible):

_____

_____

If available, please attach an MSDS or other chemical description form

Was the backflow fluid contained within the user side? YES ☐ NO ☐

Estimated Number of Affected Persons: _____

Number and description of consumer complaints received:

_____

_____

Did any consumers report illness? Please describe.

_____

_____

If applicable, please describe the consumer notification:

_____

_____

INVESTIGATION

Please describe the water system investigation including time frames:

_____

_____

_____

_____

_____

_____

What was the area system pressure? _____

Is this within typical range: YES ☐ NO ☐ - typical pressure: _____

Was a sample of the water contaminated by the backflow incident collected and stored before flushing? YES ☐ NO ☐

Please describe all sampling:

_____

_____

_____

DDW recommends laboratory or field sampling for the following parameters: total coliform, E. coli, free and total chlorine residual, pH, odor, turbidity, temperature, and color. Additional sampling should be collected at the PWS and regulatory agency's discretion.

CORRECTIVE ACTIONS

Please describe the corrective actions taken by the water system:

_____
_____
_____
_____
_____
_____

Was the chlorine residual increased after discovery of backflow incident? YES ☐ NO ☐

Date of the last cross-connection control hazard assessment of the premise with the backflow incident conducted: _____

Did the premise have backflow prevention assemblies? YES ☐ NO ☐

Date of most recent backflow prevention assembly test(s): _____

When was the Division of Drinking Water or Local County Health office notified?

Date: _____Time: _____ Contact Person: _____

Was the Division or Local County Health notified within 24 hours? YES ☐ NO ☐

Other agencies or organizations contacted?

CERTIFICATION

Name: _____ Job Title: _____

Certification(s): _____

_____

Please list all cross-connection control related certifications including number and expiration date

I certify that the forgoing information is true and correct to the best of my ability.

Signature: _____ Date: _____

Attach the following applicable documentation

1. Laboratory Test Results
2. Sketch of the cross-connection and modifications
3. MSDS or chemical information forms if chemical hazard is known
4. Applicable backflow assembly test reports including the most recent test before the incident
5. Other relevant supporting documentation

NORTH MARIN WATER DISTRICT

On-Site Water Use Questionnaire
Residential / Single Family

Name of Customer_____

Water Service Address_____

Account Number_____

Date_____

Please indicate if the following are present at the above listed address

	Yes/No
Fire Sprinklers	
Well / Spring / Other Source of Water (inactive well requires documentation to be considered destroyed / not present)	
Bay Water / Dock / Pier / Pond	
Water Storage Tank – Larger than 50 gallons	
Swimming Pool	
Pressure Boosting Pump	
Livestock Water Trough - Autofill	
Water Feature - Autofill	
Agricultural Irrigation system / Chemically Injected Irrigation System	
Multiple Dwelling Units (such as an ADU/JADU)	

Cross-Reference between the NMWD CCC Program Manual and the SWRCB CCCPH Section 3.1.4 (b) – Plan for Public Water System Cross-Connection Control

1. A description of how the community water system will achieve and maintain compliance with each requirement in this chapter;

   NMWD CCC Program Manual - District Regulation 6

2. A description of the process, personnel, and timeframes for completing initial and ongoing hazard assessments pursuant to CCCPH section 3.2.1;

   NMWD CCC Program Manual (2.3.2) Hazard Assessments

3. A description of the legal authority pursuant to CCCPH section 3.1.3 to implement corrective actions in the event a water user fails to comply in a timely manner with the provisions of the PWS's cross-connection control program;

   District Regulation 6

4. A description of the process and timeframes for ensuring each BPA is inspected and field tested, and AG is inspected, at a frequency no less than required by this Chapter;

   NMWD CCC Program Manual (2.2) Annual Testing - (2.3.3) District Responsibility Regarding BPA Inspection, Testing and Repair - (2.4.1) Customer Responsibilities Regarding BPA Installation, Testing and Repair

5. A description of the process and timeframe for ensuring each non-testable backflow preventer that is under the PWS ownership or administration is installed and maintained according to the California Plumbing Code;

   N/A – The District observes Premises Containment

6. A description of the process for ensuring individuals field testing and inspecting BPA's are no less qualified than required by this chapter, including but not limited to confirmation of the individuals:
   (A) certification as a backflow prevention assembly tester,
   (B) field test kit or gage equipment accuracy verification, and
   (C) BPA field test result reports

   NMWD CCC Program Manual (2.2) Annual Testing

7. A description of the procedures and timeframes of activities for responding to backflow incidents, including notification of customers, and reporting of backflow incidents pursuant to CCCPH section 3.5.2;

   NMWD CCC Program Manual (5) Backflow Incident Response Procedure

8. Contact information for cross-connection control personnel including any cross-connection control program coordinator and specialist;

   NMWD CCC Program Manual (1.2) Administration

9. A description of the tracking system that maintains current and relevant information, including:
   (A) Recordkeeping information required pursuant to CCCPH section 3.5.1,
   (B) Location and type of each BPA, and
   (C) Highest threat potential hazard from which a given BPA is protecting the public water system distribution system;

   NMWD CCC Program Manual (1.2) Administration

10. For user supervisors, if used, the required information pursuant to CCCPH section 3.2.2 (f);

    N/A - User Supervisors are not used

11. The corrective actions, including timeframes for the corrective actions, that a community water system will implement when:
    (A) A cross-connection exists and the BPA installed is not commensurate with the user premises' hazard or no BPA has been installed, or

    NMWD CCC Program Manual (2.3.2) Hazard Assessments

    (B) A BPA needs to be replaced or maintained;

    NMWD CCC Program Manual (2.3.3) District Responsibility Regarding BPA Inspection, Testing and Repair - (2.4.1) Customers Responsibilities Regarding BPA Installation, Testing and Repair

12. A description of the public outreach and education program to comply with CCCPH section 3.1.3(a)(9); and

<u>The following outreach and communication have been performed as of May 2025:</u>

- August 2024 update to the District Board highlighting the new requirements (see Item #8): https://nmwd.com/wp-content/uploads/2024/08/082024.pdf
- 2024 Fall newsletter: https://nmwd.com/wp-content/uploads/2024/10/NMWD-Novato-Waterline-Issue-53-9x12.5in-Fall-2024-2.pdf
- November 2024 News story: https://nmwd.com/new-state-regulations-on-cross-connection-and-backflow-prevention/

- 2025 Spring newsletter planned for early May will have another story similar to the fall newsletter.
- Social Media Posts: Using all District platforms (FB, X, IG) a story was posted in January 2025.

The following additional outreach and communication is planned for the remainder of 2025:

- Continued updates to the District Board of Directors
- Updated/Refreshed News Story on District website
- Additional Social Media posts
- Demonstrations through regional events
- Cross Connection Brochure for customer counter

13. The procedures for coordination with local entities:

The District participates in several regional organizations where coordination is possible. These organizations include:

1. Marin Water Managers Committee (quarterly meetings)
    a. Total of 8-member agencies (water providers)
2. Marin-Sonoma Water Coordination Committee
    a. Total of 4-member agencies (water providers)
3. Technical Advisory Committee (monthly meetings)
    a. Total of 8-member agencies (water providers)

The topic has already been included in recent agendas for the groups identified above and will be included in future agendas. The District also participates in the City of Novato's "Novato Permit Connections" program which is a biweekly coordination meeting amongst the local entities (City, Fire, Sanitary). This can be used to help coordinate the new requirements and educate these local entities.

12

NORTH MARIN WATER DISTRICT

MEMORANDUM

To: Board of Directors Date: September 15, 2026

From: Eric Miller, AGM | Director of Engineering

Subject: FY2025/26 End of Year Progress Report – Engineering Department
R:\Chief Engineer\Capital Improvement Program\FY25-26\BOD\Year End\FY25-26 Engineering End of Year BOD Memo.docx

RECOMMENDED ACTION: Information Only

FINANCIAL IMPACT: None

The purpose of this memorandum is to provide an end of year (July 1, 2025 to June 30, 2026) status report on the Engineering Department's (Department) performance completing infrastructure projects in the Novato, West Marin, and Oceana Marin service territories. The Department is responsible for managing the District's Capital Improvement Program (CIP), providing engineering services to customers looking to develop property, and executing special studies that support those efforts.

A summary of the District's CIP expenditures for all service areas, including contingency funds budgeted for use as needed, is provided in Table 1 below:

Table 1 – CIP Costs

Service Area	CIP Project Costs ($)		% Accomplished
	Budget	Actual	Actual
Novato Water	4,625,000	3,227,897	70
Novato Recycled	100,000	13,272	13
West Marin	1,295,000	554,344	43
Oceana Marin	50,000	14,270	29
Total	**6,070,000**	**3,809,783**	**63**

Capital Improvement Program (CIP)

A total of twenty-five (25) projects were planned for and included in the FY2025/26 CIP budget across all services areas; Novato, West Marin Water, and Oceana Marin. Ten (10) were newly planned projects and fifteen (15) projects were carried over from the prior fiscal year.

Nineteen (19) new projects were added to the workplan after the fiscal year began (a.k.a. "side-door projects") for a total of forty-four (44) CIP projects.

Of these 44 projects, 36 are under the lead responsibility of the Department for execution, with the remaining projects being led by other departments. A summary and status of all 44 projects (36 Novato Potable, 1 Novato Recycled Water, 5 West Marin, and 2 Oceana Marin), including annual contingency funds that are not currently assigned, is provided in Attachment 1.

Novato Service Area

Of the thirty-six (36) Novato Service Area CIP projects, thirteen (13) are currently active, including the Novato Boulevard Widening project which is being managed by City of Novato staff. The project includes replacing 4,500 feet of main with welded steel pipe, 1,000 feet of side-street branch ties, and 35 new service connections. The project represents multi-agency collaboration by combining roadway, sanitary sewer, and potable water infrastructure improvements into one construction project to minimize public inconvenience and leverage economy of scale savings such as project administration and overhead costs.

The Bahia Hydropneumatic System Replacement project was put on hold in the previous fiscal year due to resource constraints but was recently put back into the workplan and construction is planned to begin in Summer 2027. The project will replace an existing underground tank and pump station with new above-ground pressure tanks and a pump station located at the District's Crest Tank site.

Preliminary design of the Stafford Lake Dam Adjustable Spillway Gate project has been deferred until a time when the benefit of adding 726 acre-feet of storage is in-line with the large costs associated with satisfying regulatory permitting requirements.

The San Mateo Tank Transmission Main project was completed during the first half of the fiscal year, and staff gave the Board a presentation following closeout. The project installed a new and larger-diameter transmission main feeding the San Mateo Tank, which has a storage capacity of 5,000,000-gallons and serves many of the District's northern Zone 2 customers. The project had been planned for some time and required several regulatory permits and an access agreement with the County of Marin Open Space District. The total cost of the project was just over $2,000,000.

Of the twenty-three (23) non-active projects, nineteen (19) were completed during the 2025/26 fiscal year, and the other four (4) projects are currently on hold due to workload limitations and reprioritization. When new projects are added to the workplan throughout the fiscal year there are impacts to other budgeted projects, but District staff strive to work efficiently and reassess priorities throughout the year.

West Marin Service Area

Of the five (5) West Marin CIP's, three (3) are currently active, including the Lagunitas Bridge Pipeline Replacement project on Highway 1 in Point Reyes Station. The project is being administered at the request of Caltrans, who is leading the bridge replacement project at the same location. District crews installed isolation valves on each side of the bridge in anticipation of Caltrans' phase of work beginning in Summer 2026. The existing pipeline will be temporarily re-routed around the bridge during the work, and ultimately a new more resilient pipeline will be installed on the new bridge in a future fiscal year.

The planning phase of the Gallagher Well No. 3 project recently began, as the District is seeking a new source water in West Marin for improved resilience and redundancy. A new water source would offset the diminishing output of the Gallagher Well No. 1 and reduce reliance on the Coast Guard Wells that are experiencing increasing salinity levels. A District consultant completed a siting study and identified possible locations for a future municipal groundwater well. The next phase is to conduct field feasibility testing and pursue regulatory approval.

Oceana Marin Service Area

Only one (1) capital project is currently active for this service area due to its relatively small size and capital budget. Design work continues on a segment of the sanitary sewer force main in Oceana Marin which will address a long-standing vulnerability of that system. Once design is complete, staff will seek grant sources to potentially fund construction of those improvements.

Developer Projects

In addition to delivering the CIP, the Department also provides engineering services to developers and residential customers looking to expand their property. When a development application is submitted to the City or County, or a new water service application is submitted directly to the District, the Department determines whether that application requires over-the-counter services, or if it is more complex and requires engineering analysis. On average, the Department receives approximately five (5) over-the-counter permit applications (referrals) each week.

When an application is deemed to require engineering analysis, a Developer Project is created and one of the District's engineers are assigned to that project. Each developer project requires its own level of effort depending on the complexity and project phase (e.g. design, agreement, construction, and closeout). It is often hard to predict when a Developer Project will be submitted and what level of effort that project will require. The unpredictability in this part of the workplan continues to impact the District's ability to execute the CIP as planned.

The Department managed twenty-two (22) different Developer Projects throughout the fiscal year. A budget summary of all 22 projects (16 Novato Potable, 6 West Marin, and 0 Oceana Marin), is provided in Attachment 2.

Special Studies

In addition to CIP and Developer Projects, the Department work plan includes various Special Studies that require significant engineering staff time, use of outside consultants, and time and effort from staff in other departments. A summary of Special Studies led by the Department is provided in Table 2 below:

Table 2 – Special Studies Costs

Study Name	Study Costs ($)		% Accomplished
	Budget	Actual	
Urban Water Management Plan – 2025 Update	80,000	84,403	100
Novato Water Master Plan – 2025 Update	225,000	242,019	100
Stafford Bathymetric Survey	15,000	22,479	100
Stafford Dam Monument Survey	10,000	7,806	100
MMWD ARC	0	11,872	n/a
West Marin Water Supply Resiliency Feasibility	75,000	0	0

A comprehensive list of Special Studies can be found in Attachment 1.

Engineering Department Resources

As described above, the Department has a varied workplan spanning the CIP, Developer Projects, Special Studies, and general engineering support of the overall operation, maintenance and expansion of the District's water and wastewater facilities. There are approximately 16,000 labor hours available annually in the Department. A comparison of budgeted labor hours vs. actual labor hours worked by the department during the fiscal year is provided in Table 3 below:

Table 3 – Engineering Department Labor Distribution

Work Classification	FY 25/26 Budget (hrs)	FY 25/26 Budget (%)	FY 25/26 Actual (hrs)	FY 25/26 Actual (%)
General Engineering	5,950	37	6,581	41
CIP Projects	6,660	42	6,176	38
Developer Projects	3,019	19	2,808	17
Special Studies	355	2	683	4
Total	**15,984**	**100**	**16,248**	**100**

Timesheet records indicate that 41% of the Department's staff time was spent working on general engineering tasks, while time spent working on CIP and Developer Projects represent 38% and 17% of the Department's annual hours respectively. Due to significant special studies in the current work plan, staff spent a total of 4% working on the Novato System Master Plan update and other studies which is higher than in previous years.

Despite over 16,000 hours of in-house staff resources annually, the Department continues to rely on outside consultants for assistance with various CIP projects and special studies. Of the total CIP expenditure of $3,809,783, approximately $199,753 of that was consultant expenses (5% of total, compared to 11% for the previous FY). Approximately $250,937 in consultant expenses were used to assist with special studies over the same period.

Strategic Plan Alignment

Goal 1: Strengthen Infrastructure Resilience; The Engineering Department's core focus is District infrastructure. Whether delivering a capital project or facilitating development within the service area, department staff strive to meet the actions associated with Goal 1 of the Strategic Plan.

ATTACHMENTS:

1. CIP Budget Status Report – FY25/26 through June 30, 2026
2. Developer Project Budget Status Report – FY 25/26 through June 30, 2026

ATTACHMENT 1

NORTH MARIN WATER DISTRICT

CAPITAL IMPROVEMENT PROJECTS

PERIOD ENDING JUNE 30, 2026

		Description	COST THRU JUNE 2025	JUNE 2026	FYTD TOTAL	FY 25/26 BUDGET	(OVER)/UNDER BUDGET	TOTAL COST
		1. PIPELINES						
		1a Pipeline Improvements						
		a. Main/Pipeline Replacements						
1-7195-00	1	Novato Blvd Widening Diablo to Grant	$180,376	$43,760	$387,507	$1,200,000	$812,493	$567,883
1-7150-00	2	Closed - San Mateo Tank Transmission Main	384,117	3,076	1,668,461	1,650,000	(18,461)	2,052,578
1-7216-00	3	Tamalpais Cr Sr Apts Fire Svc	847	0	19,790	0	(19,790)	20,637
		1b Pipeline Replacements						
1-8737-08	1	Closed - Repl 8" CI w/pvc-Railroad/Rose	$406,051	$0	$1,513	$0	($1,513)	$407,564
1-7212-00	2	Stafford Lake Park Service Line	4,464	0	3,104	0	(3,104)	7,568
1-7213-00	3	Closed - Olive Avenue Main Replacement	26,491	0	120	0	(120)	26,611
1-7215-00	4	System Wide PR Station Rehab	308,565	0	27,101	0	(27,101)	335,665
		1c Aqueduct Improvements						
		1d Pipeline Contingency						
	1	Sync w/ City or County Paving	$0	$0	$0	$10,000	$10,000	$0
	2	Pipeline Resiliency Improvements-(25' Master Plan)	0	0	0	200,000	200,000	0
	3	Polybutylene (PB) Service Line Replacements	0	0	0	10,000	10,000	0
		Subtotal Pipelines	$1,310,910	$46,836	$2,107,596	$3,070,000	$962,404	$3,418,506
		2. STORAGE TANKS & PUMP STATIONS						
		2a Tank Rehabiliation / Replacement						
1-6208-02	1	Closed - Dickson Tank Vent Replacement	$0	$30,688	$38,097	$40,000	$1,903	$38,097
		2b Pump Station Rehabilitation / Replacement						
1-6112-26	1	Lynwood PS Replacement	$614,132	$0	$12,435	$300,000	$287,565	$626,567
1-6141-00	2	Closed - Crest PS	2,404,534	0	21,396	30,000	8,604	2,425,931
1-6103-22	3	Cherryhill PS Retaining Wall Repair	232,495	5,843	228,219	260,000	31,781	460,715
	4	School Road PS Decommissioning	0	0	0	30,000	30,000	0
1-6103-23	5	Cherry Hill PS Improvements	0	5,259	13,250	50,000	36,750	13,250
1-6405-11	6	Closed - Hayden Press Tank-Pit Replacement	78,159	0	2,172	0	(2,172)	80,331
1-6112-29	7	Lynwood Pump Rebuild	0	0	50,623	50,000	(623)	50,623
		2c Hydropneumatic Systems						
1-7170-01	1	Bahia Hydropneumatic System Replacement	$32,159	$43,566	$112,768	$0	($112,768)	$144,927
		2d Tank & Pump Station Contingency						
	1	PS Pump Replacements (5/yr)	$0	$0	$0	$0	$0	$0
		Subtotal Storage Tanks & Pump Stations	$3,361,479	$85,357	$478,960	$760,000	$281,040	$3,840,439

NORTH MARIN WATER DISTRICT

CAPITAL IMPROVEMENT PROJECTS

PERIOD ENDING JUNE 30, 2026

		Description	COST THRU JUNE 2025	JUNE 2026	FYTD TOTAL	FY 25/26 BUDGET	(OVER)/UNDER BUDGET	TOTAL COST
		3. STAFFORD IMPROVEMENTS						
		3a Stafford Treatment Plant (STP)						
1-6610-38	1	STP PLC (Prog Logic Controllers) Replacements	$0	$93,006	$186,011	$185,000	($1,011)	$186,011
1-6610-29	2	STP-Tower Hose Replacement	46,771	0	36,880	0	(36,880)	83,651
1-6610-30	3	Closed - STP Primary Filter Basin Improvements	1,148,669	0	0	0	0	1,148,669
1-6610-33	4	Closed - STP Fire Alarm Upgrade	12,394	0	0	0	0	12,394
1-6610-39	5	Closed-STP-Rebuild Centrisys Centrifuge	0	0	97,240	0	(97,240)	97,240
		3b Stafford Dam / Watershed						
1-6610-24	1	Water Supply Enhancements-Spillway ASG	$262,182	$0	$14,581	$50,000	$35,419	$276,762
1-6610-37	2	Dam Spillway Concrete Repair	0	186	98,367	75,000	(23,367)	98,367
1-6610-31	3	Dam Piezometer Automation	56,506	23,453	61,796	80,000	18,204	118,302
		3c Stafford Contingency						
	1	Other Stafford Improvements	$0	$0	$0	$0	$0	$0
1-6610-36	2	Closed - Recirculation Pump 231/232 Rpl	0	0	35,107	40,000	4,893	35,107
		Subtotal Stafford Improvements	$1,526,521	$116,645	$529,982	$430,000	($99,982)	$2,056,503
		4. MISCELLANEOUS IMPROVEMENTS (NOVATO)						
		4a District Offices						
1-6502-54	1	Closed-Construction Building 1st Floor Improvements	$0	$0	$38,341	$50,000	$11,659	$38,341
1-6502-55	2	Closed - Construction Building 2nd Floor Improvements	0	0	38,500	50,000	11,500	38,500
	3	Construction Yard Improvements - Pipe Racks	0	0	0	25,000	25,000	0
1-6501-46	4	Office Emergency Generator	0	0	1,021	0	(1,021)	1,021
1-6501-50	5	Closed - DLF Mediation	155,510	98	124,861	0	(124,861)	280,371
1-6502-49	6	Closed-Construction Locker Room Remodel	289,175	0	0	0	0	289,175
1-6502-52	7	Closed - EV Charging Stations (9)	0	0	67,492.66	0	(67,493)	67,493
1-6501-51	8	RCP Gate Improvements	0	0	18,326	0	(18,326)	18,326
		4b System Pressure / Valving						
	1	System Wide PR Station Rehab	$0	$0	$0	$25,000	$25,000	$0
	2	San Marin Valve Pit Improvements	0	0	0	15,000	15,000	0
1-7219-00	3	655 Canyon Road Fire Service Replacement	0	0	646	40,000	39,354	646
1-7218-00	4	1180 Lynwood Dr. Fire Service Replacement	0	18,831	36,101	40,000	3,899	36,101
	5	Gateway Commons- Backflow Prevention	0	0	0	60,000	60,000	0
1-6317-11	6	Landing Way Regulators	0	35,015	78,513	50,000	(28,513)	78,513
		4c Miscellaneous Projects						
1-6610-32	1	Closed - Thorsson Monitoring Stat - Upgrade	$6,642	$0	$0	0	$0	$6,642
1-6610-35	2	Scada Server Upgrade	8,806	0	16,875	0	(16,875)	25,681
1-6502-53	3	Equipment not yet in Service	309,317	(157,844)	($309,317)	0	309,317	0
		4d Miscellaneous Contingency						
	1	Cathodic Protection-Anode Installation (FY26)	$0	$0	$0	$10,000	$10,000	$0
	2	Other System Improvements	0	0	0	0	0	0
		Subtotal Miscellaneous Improvements (Novato)	$769,450	($103,901)	$111,359	$365,000	$253,641	$880,809

NORTH MARIN WATER DISTRICT

CAPITAL IMPROVEMENT PROJECTS

PERIOD ENDING JUNE 30, 2026

		Description	COST THRU JUNE 2025	JUNE 2026	FYTD TOTAL	FY 25/26 BUDGET	(OVER)/UNDER BUDGET	TOTAL COST
		5. RECYCLED WATER SYSTEM (NOVATO)						
		5a RW Pipelines						
5-7162-07	1	Closed-Hamilton Homeward Bound RW Main Ext[1]	$233,861	$0	$13,272	$0	($13,272)	$247,133
		5b RW Tanks & Pump Stations	$0	$0	$0	$0	$0	$0
		5c RW Contingency	$0	$0	$0	$0	$0	$0
	1	Other Recycled Water Improvements	$0	$0	$0	$100,000	$100,000	$0
		TOTAL RECYCLED WATER	$233,861	$0	$13,272	$100,000	$86,728	$247,133
		6. WEST MARIN SYSTEM						
		6a WM Pipelines						
2-8912-00	1	Lagunitas Bridge Pipeline Replacement	$195,213	$1,665	$494,696	$750,000	$255,304	$689,909
	2	Olema Creek Bridge Pipe Replacement (County)	0	0	0	25,000	25,000	0
2-7192-01	3	Galv Pipe Repl -Balboa	8,290	0	0	0	0	8,290
2-7192-02	4	Galv Pipe Repl - 4 Locations	197,298	0	4,453	250,000	245,547	201,751
2-7214-00	5	St Rt 1 Caltrans Pipe Relocate	3,835	0	7,057	40,000	32,943	10,892
		6b WM Tanks & Pump Stations						
		6c WM Wells						
2-6613-00	1	Gallagher Well #3	$3,458	$12,188	$32,409	$100,000	$67,591	$35,867
		6d WM Treatment Plant						
		6e WM Contingency						
	1	Sync w/County Paving	$0	$0	$0	$25,000	$25,000	$0
	2	Other Water System Improvements[2]	0	0	0	100,000	100,000	0
2-7217-00	3	Closed - West Marin Fire Services	0	0	14,808	0	(14,808)	14,808
2-7185-00	4	Gallagher Ranch Streambank Stabilization[2]	735,835	0	922	5,000	4,078	736,757
		TOTAL WEST MARIN	$1,143,929	$13,853	$554,344	$1,295,000	$740,656	$1,698,274
		7. OCEANA MARIN						
		7a OM Pipelines						
8-7208-01	1	Sewer Force Main Improvements-FM 1A (Design Only)	$53,602	$0	$12,154	$25,000	$12,846	$65,756
		7b OM Lift Station	$0	$0	$0	$0	$0	$0
		7c OM Treatment Ponds						
8-7173-00	1	Closed - OM Treatment Pond Rehab-404 Grant-FEMA[3&4]	$208,605	$0	$0	$0	$0	$208,605
8-7173-01	2	Closed - OM Treatment Pond Rehab-Grant Management	66,719	0	2,116	0	(2,116)	68,834
8-7173-02	3	Closed - OM Treatment Pond Rehab-PH 2 Const FEMA	1,860,610	0	0	0	0	1,860,610
		7d OM Contingency						
	1	Other Sewer System Improvements	$0	$0	$0	$25,000	$25,000	$0
		TOTAL OCEANA MARIN	$2,189,535	$0	$14,270	$50,000	$35,730	$2,203,805

NORTH MARIN WATER DISTRICT

CAPITAL IMPROVEMENT PROJECTS

PERIOD ENDING JUNE 30, 2026

Description	COST THRU JUNE 2025	JUNE 2026	FYTD TOTAL	FY 25/26 BUDGET	(OVER)/UNDER BUDGET	TOTAL COST

SUMMARY - GROSS PROJECT OUTLAY	Current Month	FYTD Total	FY 25/26 Budget	FYTD/ Budget%
Novato Water Capital Projects	$144,936	$3,227,897	$4,625,000	70%
Novato Recycled Water Capital Projects	0	13,272	100,000	13%
West Marin Water Capital Projects	13,853	554,344	1,295,000	43%
Oceana Marin Sewer Capital Projects	0	14,270	50,000	29%
Gross Capital Improvement Project Outlays	$158,789	$3,809,783	$6,070,000	63%

8 LESS FUNDED BY GRANTS, LOANS & REIMBURSEMENTS							
(Accrued)/Deferred							
a	NW - Loan Funds - Gateway Commons On-Bill Financing Reimb	$0	$0	$0	$0	$0	$0
b	RW - Capital Replacement Expansion Fund	0	0	0	0	0	$0
c	WM - Loan For "Near-Term" Capital Projects	146,634	0	0	0	0	$146,634
	FUNDING BY OTHERS (ACCRUED)/DEFERRED	$146,634	$0	$0	$0	$0	$146,634
Received							
a	NW - Loan Funds - Gateway Commons On-Bill Financing Reimb	$0	$0	$0	($60,000)	($60,000)	$0
b	RW - Capital Replacement Expansion Fund	(286,761)	0	(13,272)	(100,000)	(86,728)	($300,033)
c	WM - Loan For "Near-Term" Capital Projects	(554,228)	0	0	(1,295,000)	(1,295,000)	($554,228)
	FUNDING BY OTHERS RECEIVED	($840,989)	$0	($13,272)	($1,455,000)	($1,441,728)	($854,261)
	NET PROJECT EXPENDITURES	$9,548,062	$158,789	$3,796,511	$4,615,000	$818,489	$13,637,840

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CIP SUMMARY-NET EXPENDITURES:	Current Month	FYTD Total	FY 25/26 Budget	FYTD/ Budget%
Novato Water Capital Projects	$144,936	$3,227,897	$4,565,000	71%
Novato Recycled Water Capital Projects	0	0	0	0%
West Marin Water Capital Projects	13,853	554,344	0	-
Oceana Marin Sewer Capital Projects	0	14,270	50,000	29%
Net Capital Improvement Project Outlays	$158,789	$3,796,511	$4,615,000	82%

	8. EQUIPMENT BUDGET				
1	Class 8 Service Truck (2) #565 & 564	$0	$757,183	$498,000	($259,183)
2	Lease/Purchase Vehicles	0	235,801	313,000	77,199
3	Programmable Logic Controller (6) (Operations)	0	17,833	100,000	82,167
4	Turbidity Analyzers (8) (Operations)	0	10,322	55,000	44,678
5	Chlorine Analyzer (3) (Operations)	0	0	42,000	42,000
6	Incubator (Lab)	0	5,961	10,000	4,039
7	Miscellaneous Equipment Purchases	163,947	202,006	15,000	(187,006)
	Total Equipment Purchases	$163,947	$1,229,107	$1,033,000	($196,107)

NORTH MARIN WATER DISTRICT

CAPITAL IMPROVEMENT PROJECTS

PERIOD ENDING JUNE 30, 2026

		Description	COST THRU JUNE 2025	JUNE 2026	FYTD TOTAL	FY 25/26 BUDGET	(OVER)/UNDER BUDGET	TOTAL COST
		9. STUDIES & SPECIAL PROJECTS						
		9a General Studies						
1-4102-00	1	GIS Support	$99,684	$1,303	$12,288	$12,000	($288)	$111,972
	2	Grant Consultant	0	0	0	10,000	10,000	0
	3	Strategic Plan Update (2025-2029)	10,460	0	12,180	15,000	2,820	22,640
1-4088-00	4	Emergency Operations Response Plan	28,139	1,512	34,493	100,000	65,507	62,632
	5	Retiree Health Benefits (OPEB) Footnote FY25	6,000	0	1,000	0	(1,000)	7,000
1-4073-00	6	Surplus Property	0	0	1,496	0	(1,496)	1,496
		9b Novato Service Area Studies						
1-4050-25	1	Urban Water Mgmt Plan - 2025 Update	17,062	22,018	84,403	80,000	(4,403)	101,465
1-4059-00	2	Stafford LakeWater Rights Update	0	0	1,080	0	(1,080)	1,080
1-4104-23	3	Novato Water Master Plan	313,401	0	242,019	225,000	(17,019)	555,420
	4	Stafford Lake Bathymetiric Survey	0	0	22,479	15,000	(7,479)	22,479
	5	Stafford Dam Monument Survey	0	0	7,806	10,000	2,194	7,806
	6	Stafford Treatment Plant Risk Management Plan Update	0	0	0	35,000	35,000	0
1-4077-00	7	Potter Valley Project FERC Decommissioning	52,237	8,086	21,173	5,000	(16,173)	73,409
1-4105-00	7	SMART Master Agreement	5,155	0	130	0	(130)	5,285
1-4106-00	8	STP Risk Management Program Update	38,441	0	4,045	0	(4,045)	42,486
1-4109-00	9	MMWD ARC - Coordination	0	0	11,872	0	(11,872)	11,872
1-4110-00	10	PS ASSESSMENT (2025 MP)	0	2,375	14,489	0	(14,489)	14,489
1-7140-00	11	Dam Safety Emergency Action Plan	0	0	965	0	(965)	965
		9c WM Service Area Studies						
	1	West Marin Water Supply Resiliency Feasibility Study	0	0	0	75,000	75,000	0
	2	West Marin Water Rights Review	0	0	1,337	0	(1,337)	1,337
		9d OM Service Area Studies						
8-4111-00	1	Oceana Marin Master Plan	0	0	1,884	50,000	48,117	1,884
		9e Other Studies						
	2	Recycled Water-G&A Consultants/Studies General	890	0	0	0	0	890
			$747,848	$35,295	$475,137	$632,000	$156,863	$1,222,985

Notes to Capital Improvement Projects Schedule:

(1) Funded by Capital Replacement & Expansion Fund.
(2) Loan from Novato Water-As included in the 2021 WM Water rate study - to be paid with interest. Loan received 6/30/22.
(3) OM Treatment Pond Rehab-Project funded at 75% by grants. Eligible project costs were budgeted at $2.2M (75%=$1.425M)
(4) Loan from Novato Water-As included in the five-year financial forecast

ATTACHMENT 2

NORTH MARIN WATER DISTRICT
DEVELOPER PROJECTS
PERIOD ENDING JUNE 30, 2026

JOB NUMBER	JOB NAME	ENGINEERING ADVANCE	ESTIMATE/ AGREEMENT	COST THRU JUNE 2025	FYTD TOTAL	TOTAL COST
NOVATO						
1-2786-00	BINFORD RD STORAGE - Closed	7,800	48,111	91,623	1,804	93,427
1-2849-99	777 SAN MARIN	30,000	-	19,206	4,719	23,925
1-2855-00	IGNACIO FAC POTABLE WATER IMPR - Closed	-	82,215	25,243	114,607	139,850
1-2860-00	HABITAT REDWOOD BLVD	15,000	-	13,593	403	13,996
1-2868-00	BAHIA RIVERVIEW - Closed	5,355	1,340,649	11,719	0	11,719
1-2869-00	LANDING COURT	42,750	-	18,339	13,471	31,810
1-2870-00	VALLEY OAKS BY TRI POINTE HOME - Closed	2,500	-	4,193	0	4,193
1-2873-00	SHEEDY LAND DIVISION	5,250	-	6,224	1,626	7,850
1-2880-99	PARSONAGE LIVING QUARTERS-PRE - Closed	6,500	-	122	0	122
1-2882-00	1595 GRANT AVE - FIRE SVC	11,750	72,597	10,926	2,243	13,169
1-2883-99	ARV ASSISTED LIVING	-	-	0	0	0
1-2885-00	GATEWAY COMMONS-CR CONNECT	15,000	-	2,462	5,840	8,302
1-2888-00	JACK IN THE BOX FIRE SERVICE - Closed	5,610	45,895	0	59,730	59,730
1-2889-00	MARIN COUNTRY CLUB	6,630	-	0	53,115	53,115
1-2890-00	106 GALLI DRIVE-NEW FIRE SVS	11,750	46,755	0	42,066	42,066
1-2893-99	DUTCH BROS COFFEE	6,500	-	0	1,494	1,494
1-2894-99	NOVATO GATEWAY	11,750	-	0	3,974	3,974
1-2895-99	THE LODGE ON NOVATO CREEK	11,985	-	0	2,595	2,595
1-2896-99	805 ATHERTON AVE	18,000	-	0	999	999
1-2897-99	VALLEY OAKS NORTH & SOUTH REDWOOD BLVD	23,400	-	0	482	482
1-2898-99	BROADSTINE MARIN	26,400	-	0	0	0
1-2899-99	8190 BINFORD ROAD	11,750	-	0	0	0
	TOTAL NOVATO	$229,730		$112,028	$307,364	$409,848
WEST MARIN						
2-2877-00	17 CYPRESS RD-FIRE HYDRANT - Closed	4,000	163,679	98,610	21,962	120,572
2-2881-00	CUI FAMILY LAND SUBDIVISION-PR	53,864	-	5,743	3,051	8,794
2-2884-00	SYDRIEL MIX USE IMPROVEMENT	11,750	164,204	5,623	8,767	14,390
2-2886-00	PT.REYES CGHS REDVP PRJ	-	-	5,001	13,804	18,805
2-2891-00	CLAM 6TH AND B	13,350	95,847	0	6,119	6,119
2-2892-00	PT REYES ST PLAYGROUND - RESTROOM EXP	-	-	0	3,438	3,438
	TOTAL WEST MARIN	$82,964		$114,977	$57,141	$168,680

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NORTH MARIN WATER DISTRICT

MEMORANDUM

To: Board of Directors Date: September 15, 2026

From: Tim Kennedy, Director of Operations TK

Subject: FY 2025-2026 End of the Year Report - Operations Department
X:\MAINT SUP\Board Reports\End of the Year Report\2025-2026

RECOMMENDED ACTION: Information Only

FINANCIAL IMPACT: None

PRODUCTION:

The following is a breakdown of supply, production, and demand data pertaining to the District's different service areas between July 1, 2025 and June 30, 2026.

Novato Water Service

- Stafford Treatment Plant (STP) produced 417 million gallons (MG) between July 1, 2025 and June 30, 2026.
- Stafford Lake elevation was at 191.4' on July 1, 2025 and dropped to a low of 182.8' on November 14th before December rains began filling the lake. The corresponding storage volumes for these elevations are 1,074 million gallons (MG) and 585.6 MG, respectively.
- Stafford Lake reached capacity on February 17, 2026 and continued to spill, off and on, until the end of April.
- Novato average daily demand was 6.2 million gallons per day (MGD) between July 1, 2025 and June 30, 2026. Demand was down 3 percent from last year.
- Novato peak day demand was 10.74 MGD on May 14, 2026.
- Purchased recycled water totaled 228 MG.

Attachment 1 is provided showing the total water use by source for the Novato Water Service Area.

West Marin Water Service

- West Marin average daily production was 191,403 gallons per day (gpd).
- West Marin peak day demand was 385,490 on August 8, 2025.
- West Marin demand was within 1% of last year's demand.

Oceana Marin Wastewater Service

- Force main pump flow average was 14,090 gpd.
- Force main pump peak day demand was 74,890 gallons on January 5, 2026

WORK FORCE STATISTICS:

The following is a breakdown of all departmental labor costs, for each work group, pertaining to the different areas between July 1, 2025 and June 30, 2026.

Novato Water Service

- Distribution & Treatment: 88% of all labor costs, 69% of overtime costs.
- Maintenance: 94% of all labor costs, 75% of overtime costs.

West Marin Water Service

- Distribution & Treatment: 7% of all labor costs, 25% of overtime costs.
- Maintenance: 4% of regular pay hours, 15% of overtime costs.

Oceana Marin Wastewater Service

- Distribution & Treatment: 5% of all labor costs, 6% of overtime costs.
- Maintenance: 2% of all labor costs, 10% of overtime costs.

Attachment 2 is provided showing the breakdown of labor costs per service area.

MAINTENANCE – ASSET MANAGEMENT

The following is a breakdown of maintenance statistics for FY 2025-2026, tracked through our NEXGEN computerized maintenance management system (CMMS). Development of a comprehensive preventative and predictive maintenance program for the Novato Distribution System is underway.

Distribution and Treatment: Completed 377 routine work orders

- 348 completed preventative maintenance work order
- 13 completed corrective maintenance work orders
- 11 completed inspection work orders
- 3 completed work orders were assigned as projects
- 2 completed work orders were unassigned

Maintenance (Electrical/Mechanical) Completed 303 routine work orders

- 153 completed preventative maintenance work orders
- 111 completed corrective maintenance work orders
- 21 completed work orders were assigned as projects
- 1 completed work order were inspection work orders
- 17 completed work orders were unassigned

The following is a breakdown of backflow testing statistics, tracked through our cross-connection control management software program, Swift Comply, for calendar year 2025.

Maintenance (Cross Connection Control) Tested 2,475 backflow devices

- 2,377 out of 2,433 devices tested in Novato, for a test completion rate of 98%
- 98 out of 108 devices tested in West Marin, for a test completion rate of 91%

PROJECTS:

The following is a breakdown of Operations Department projects that were completed between January 1st and June 30th of 2026:

The Distribution & Treatment and Maintenance work groups replaced the Granular Activated Carbon (GAC) at the Stafford Water Treatment Plant at STP. GAC is used to control taste and odors and reduce disinfection by products (DBPs). Calcon System Inc. (Calcon) upgraded the programable logic controllers (PLCs) at the STP High Service Pump Station and the main treatment building, which includes the Actifloc Filters. Staff worked with Calcon to test the newly installed PLCs. The PLCs upgrades are part of a 3-year capital improvement plan to replace all obsolete PLCs at STP. The Centrisys sludge centrifuge was rebuilt and put back into operation, and a Swan turbidimeter was installed at the main plant.

The Operations Department collaborated with the Utilities Department and the Sonoma County Water Agency (SCWA) to install a temporary pressure regulating station near the SCWA Billing Meters at Landing Way in Petaluma. The existing pressure regulating station is being upgraded in collaboration with SCWA, and the temporary regulating station allows potable water service to continue, and fire suppression requirements to be met, while the existing station is under construction. An aging propane tank was replaced at Crest Tanks. Staff worked with the Engineering Department and a contractor to replace a failing tank vent on Dickson Tank. The failing vent had been called out by the Division of Drinking Water (DDW) as needing replacement during a previous inspection. Electrical and Mechanical staff coordinated with the Utilities Department to exercise (test) the pressure regulating stations in Novato. Staff has created a preventative maintenance program that will address maintenance and exercising needs at the pressure regulating stations, which are a critical component to the water distribution system. That program is scheduled to start during the 2027 flushing season.

The Operations Department worked with a contractor to clean out the wet well and grit chamber at the Oceana Marin lift station. Maintenance personnel replaced a transfer pump at the Oceana Marin Ponds.

SAFETY AND EMERGENCY MANAGEMENT:

The following is a breakdown of Safety and Emergency Management highlights between January 1st and June 30th of 2026:

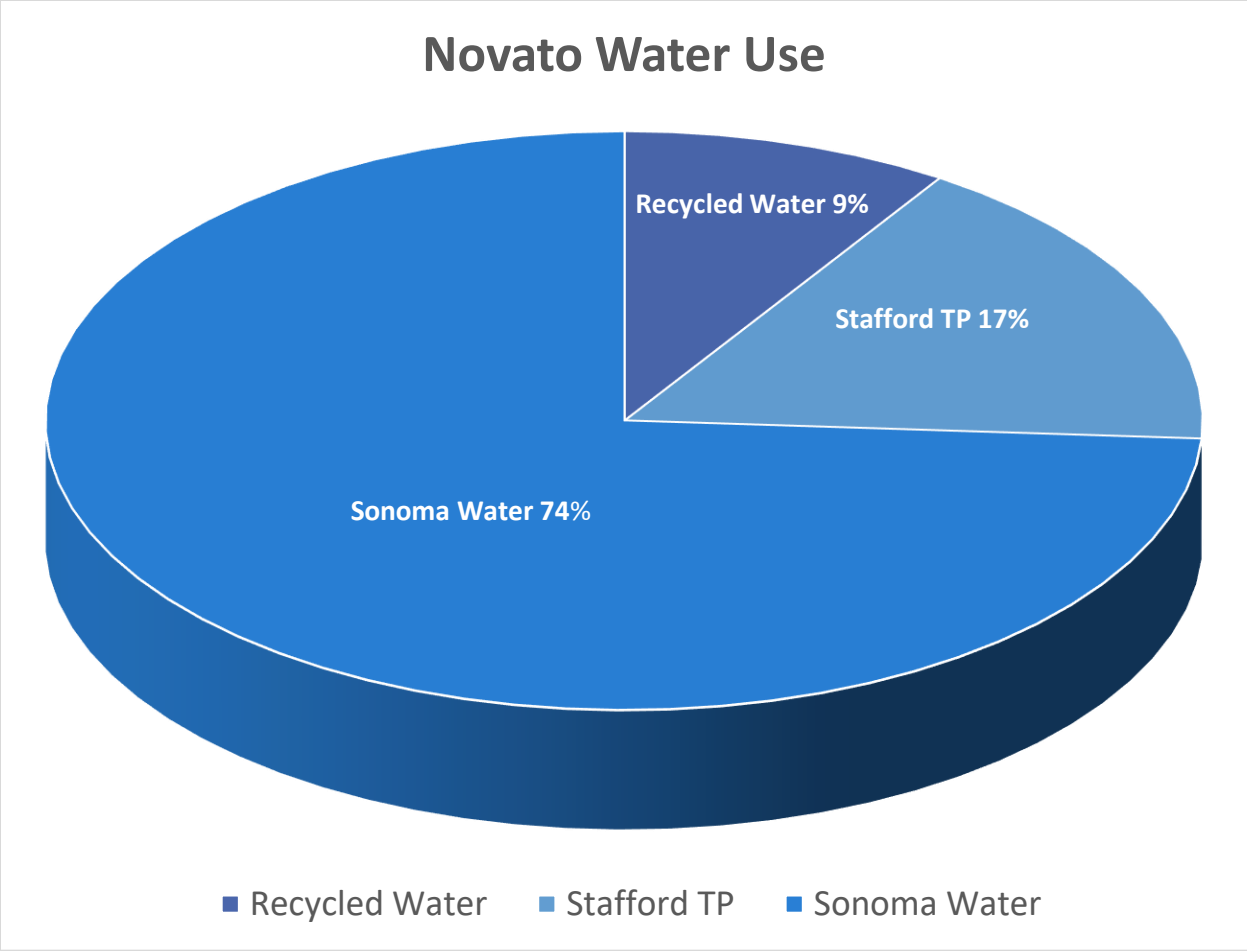
All Operations Department staff completed a 24-hour online HAZWOPER (Hazardous Waste Operations and Emergency Response) occasional site worker online training. The Distribution & Treatment staff completed an additional 16-hour in-person training to bring their Hazwoper level to the General Site Worker level, and then a 4-hour First Responder Training to bring the operators to the First Responder Hazwoper level. The training was a requirement of the recently updated STP Chlorine Risk Management Plan (RMP).

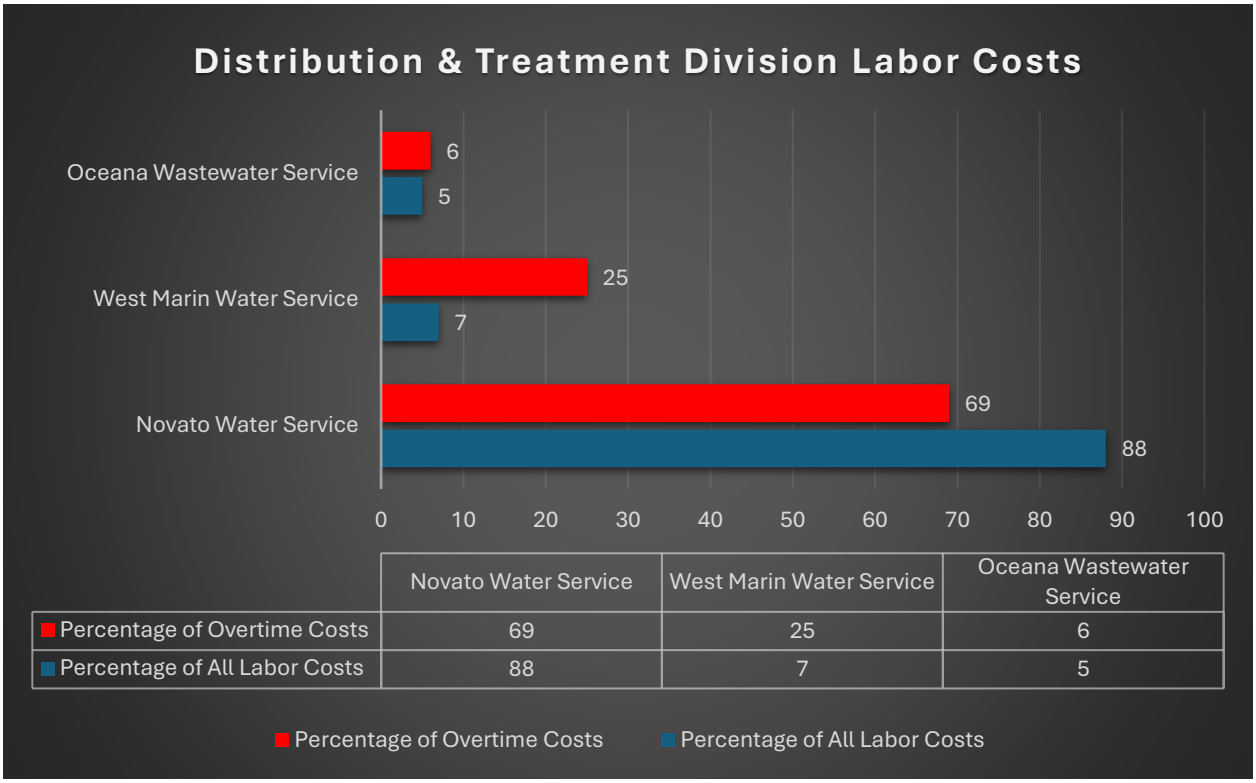
Staff organized and provided tours with the Novato Fire District and the Marin County Certified Unified Program Agency (CUPA) to review Stafford Treatment Plant's chlorine gas system. The tours reviewed what the procedure would be if there was a chlorine gas release. This was also a requirement of the RMP.

Between January 1, 2026 and June 30, 2026, there were three injuries that occurred that resulted from three separate incidents. Those injuries resulted in zero lost workdays. CalOSHA mandatory 10-day safety tailgates were implemented for the Utilities and Operations Departments.

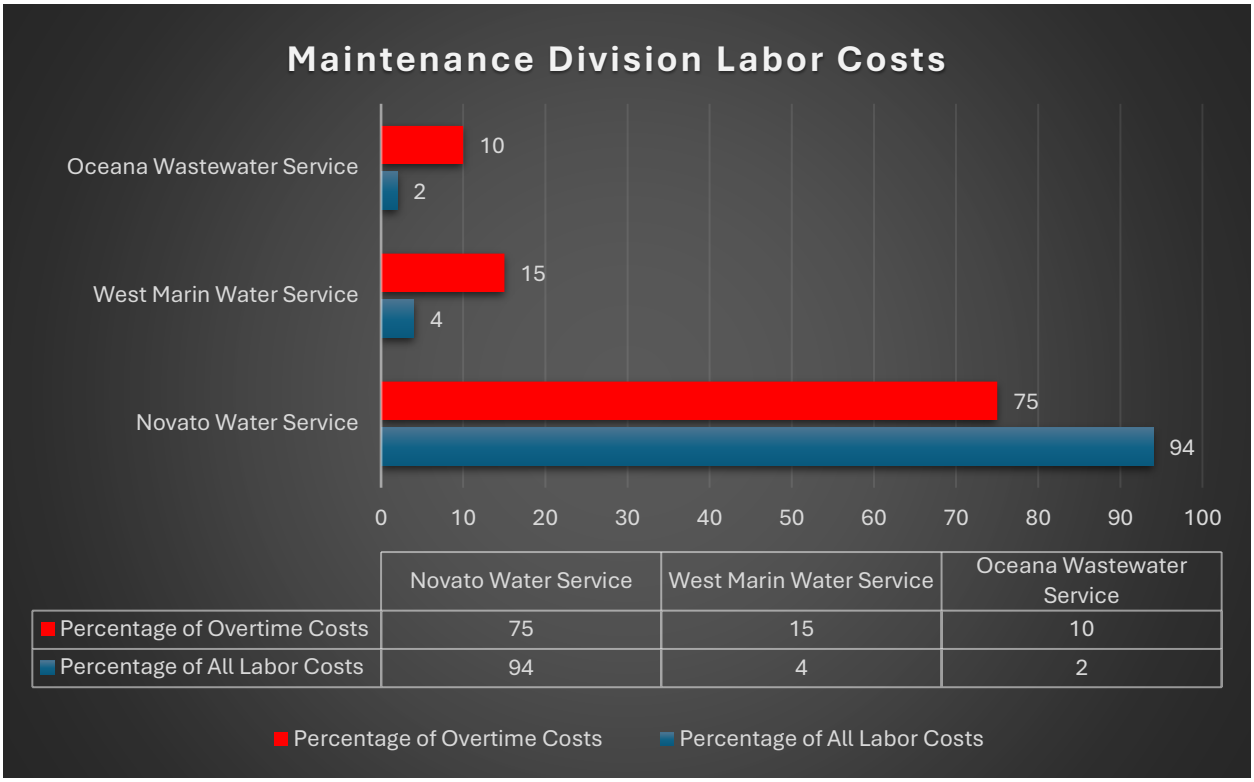
ATTACHMENTS:

1. Novato Water Production Pie Chart
2. Work Force Statistics Bar Charts


Novato Water Use
Recycled Water 9%
Stafford TP 17%
Sonoma Water 74%
Recycled Water
Stafford TP
Sonoma Water



	Novato Water Service	West Marin Water Service	Oceana Wastewater Service
Percentage of Overtime Costs	69	25	6
Percentage of All Labor Costs	88	7	5



	Novato Water Service	West Marin Water Service	Oceana Wastewater Service
Percentage of Overtime Costs	75	15	10
Percentage of All Labor Costs	94	4	2

14

DISBURSEMENTS - DATED AUGUST 27, 2026

Date Prepared 8/24/26

The following demands made against the District are listed for approval and authorization for payment in accordance with Section 31302 of the California Water Code, being a part of the California Water District Law:

Seq	Payable To	For	Amount
P/R	Employees	Net Payroll PPE 8/15/26	$219,427.94
EFT*	US Bank	June Bank Analysis Charge (Lockbox $1,503, Other $598 Less Interest $216)	$1,885.43
66698*	Clinical Massage Services LLC	Health Fair - Chair Massage	$300.00
66697*	Naya Calmels	Health Fair - Movement Coach Session	$177.30
91084*	Amazon	Kitchen & Office Supplies ($327), Computer Supplies ($287), Roll Bar Light Mount ($175) & Heavy Duty Weed Rake ($203)	991.69
91085*	US Bank	Microsoft 365 Subscriptions ($160), Internet PRTP & Gallagher Well #2 ($328), Job Target Posting for Recruitment ($598), Zoom Subscription, GFOA-Membership Renewal ($350), Starlink Internet ($385), STP VOIP Alarm System Fee, PR Tax Filings, CPA License Renewal ($409), LinkedIn Posting for Recruitment ($170), Adobe License ($816), Engineering Reference Book ($152), Dropbox, Meetings ($361), City of Novato-Encroachment Permits (2) ($1,954), & Miscellaneous Supplies	5,951.43
91086*	Internal Revenue Service	Federal & FICA Taxes PPE 8/15/26	99,897.89
91087*	State of California	State Taxes & SDI PPE 8/15/26	24,840.79
91088*	CalPERS	Pension Contribution PPE 8/15/26	60,980.08
91089*	Nationwide	Deferred Compensation-457 PPE 8/15/26	18,231.20
91090*	Nationwide	Deferred Compensation 8/15/26-401A Match	3,183.00
1	American Family Life Ins	AFLAC August 2026 Employee Paid Benefit	4,374.35
2	Bank of Marin	Fund Loan Account for Monthly Fees	1,200.00
3	Bay Alarm Company	Quarterly Fire Alarm Monitoring Fee (999 Rush Creek Place) (9/1/26-11/30/26)	539.07

*Prepaid

Seq	Payable To	For	Amount
4	Bold & Polisner	July Legal Fees-General ($5,070) & Potter Valley Matter ($1,611)	6,680.98
5	California Water Service	August Water Service (O.M.)	47.46
6	Chase	Loan Payment-AMI Project (Pymt#17 of 30)	32,011.00
7	Comcast	August Internet (999 Rush Creek Place)	1,633.89
8	Alisa Costello	Exp Reimb: Supplies for NMWD Health Fair	324.52
9	Diesel Direct West	Diesel (276 Gal) ($2,008) & Gasoline (451 Gal) ($2,342)	4,350.02
10	Ferguson Waterworks	6ft AMI Antennas (200) ($7,575) & 7' Curb & Valve Box Cleaner	7,913.75
11	Frontier Communications	August Internet (STP)	640.00
12	Goble Sampson Assoc Inc	Spare Parts for Chemical Pumps (STP)	413.88
13	Grainger	Tire Inflator ($178), Impact Wrench ($219), Pump Repair Kits (2) ($425), Battery (6) ($484), Pipe Cement (10) ($143), Striping Paint ($239), Impact Driver ($243) & Miscellaneous Tools & Supplies	3,132.25
14	Home Depot Credit Services	Pest Control & Cleaning Supplies	41.74
15	Jane Hook	Novato Toilet Rebate Program	100.00
16	Iconic Machinery	Service Parts ('Bobcat Loader)	177.72
17	Industrial Electrical Company	Vibration Analysis & Thermal Imaging on Chlorine Scrubber	2,310.00
18	Kemira Water Solutions	Ferric Chloride (28 Dry Tons)	37,973.37
19	Lincoln Life Employer Serv	Deferred Compensation PPE 8/15/26	6,735.30
20	McLellan Co, WK	Miscellaneous Paving	10,335.58
21	MG WEST	Office Furniture	1,298.52
22	Mill Creek Meadows HOH	Refund Unable to Locate Account	6,378.45
23	Mutual of Omaha	September 2026 - Mutual of Omaha Group Life/ADD Insurance & Vision Premium	2,467.80

*Prepaid

Seq	Payable To	For	Amount
24	North Marin Auto Parts	Service Parts ('15 F150) ($126), Diesel Engine Exhaust Fluid (8) ($254) & Terry Rags (100 lbs) ($240)	940.34
25	North Bay Gas	Nitrogen (STP) & Acetylene & Argon (Lab)	64.00
26	Northen, Brian	Exp Reimb: Registration for Wine Country Waterworks Trade Show (5 Employees)	675.00
27	Orkin Commercial Services	July Pest Control Services	144.00
28	Pace Supply	Coupling (22) ($401), Thread Rod (24) ($128), 'O' Rings (40) ($835), Valve (3) ($974), Bushing (30) ($177) & Nipple (69) ($1,002)	3,517.49
29	NMWD Petty Cash	Food for Safety Meeting, Police Report & Fuel Tank Screen	82.44
30	Rebuilding Together EB Network	Refund of Deposit Water Conservation Requirements - Novato	1,000.00
31	ScanForce	Inventory Tracking Software (8/27/26 - 8/26/27)	14,899.75
32	Scott Technology Group	August Maintenance on Admin ($182) & Engineering Copiers ($299)	480.76
33	Dan Shea	Refund Credit on Closed Account	250.00
34	Soiland Co., Inc.	Asphalt Recycling (7 yds)	261.00
35	Sonoma County Water Agency	Remote Sensing & Ground Water Cover Spatial Analysis for Urban Water Use Objective Compliance (Balance Remaining on Contract $33,589)	4,404.00
36	Ellis Stahley	Exp Reimb: Laser Measure	60.08
37	Thatcher Inc.	Chlorine (2,000 lbs) (STP)	5,598.00
38	United Parcel Service	Returned Fire Hose Nozzle	55.38
39	Waste Management	Waste Disposal	30.97
40	Wood Rodgers, Inc.	Prog Pymt #4: Engineering & Hydrogeological Services Gallagher Well #3 (Balance Remaining on Contract $515)	4,432.50

Seq	Payable To	For	Amount
41	ZORO	Toner ($456) & Miscellaneous Tools & Supplies	746.56
		TOTAL DISBURSEMENTS	**$604,588.67**

The foregoing payroll and accounts payable vouchers totaling $604,588.67 are hereby approved and authorized for payment.

Julie Blue 08/25/26

Director of Administrative Services Date

8/25/26

General Manager Date

DISBURSEMENTS - DATED SEPTEMBER 3, 2026

Date Prepared 8/31/26

The following demands made against the District are listed for approval and authorization for payment in accordance with Section 31302 of the California Water Code, being a part of the California Water District Law:

Seq	Payable To	For	Amount
91091*	State Water Resources Control Board	State Revolving Fund Loan Payment Recycled Water - North Phase 2 (Pymt#14 of 20)	$116,128.88
1	Alpha Analytical Labs	Lab ($1,749) & Quarterly EPA Testing (W.M. $900 & Novato-$900)	3,549.00
2	Associated Right of Way Services	Prog Pymt#19: Valuation Services for Lynwood Pump Station (Balance Remaining on Contract $19,278)	230.00
3	Automation Direct	Communication Module ($350), Analog Input ($170) & Connection Cable	542.97
4	Edgar Castor	Novato Water Smart Landscape Efficiency	152.00
5	CDW-Government, Inc.	Digital Rail Clip Kits (2)	12.41
6	Central Marin Sanitary Agency	North Bay Watershed Association FY 26/27 Membership Fee	6,263.09
7	Core Utilities, Inc	July IT Support ($6,000) & SCADA & PLC Support (Novato-$1,526 & W.M.-$1,224)	8,750.00
8	Diesel Direct West	Diesel (82 gal) & Gasoline (501 gal)	3,345.50
9	Ferguson Waterworks	Meter Registers (10)	2,294.25
10	Grainger	Gauge Guard ($217), Electrical Supplies ($255), Submersible Pump ($291), Absorbent Pads (40) ($280), Solenoid Valve ($395) & Miscellaneous Tools & Supplies	2,510.98
11	Idexx Distribution, Inc.	Coli Comparator (Lab)	57.69
12	InfoSend, Inc.	July Processing Fee for Water Bills ($1,078), Postage ($3,828) & Monthly Support Fee ($1,159)	6,065.29
13	Kiosk Creative LLC	July Communication & Outreach Services (Balance Remaining on Contract $84,505)	5,495.21

*Prepaid

Seq	Payable To	For	Amount
14	Marin County	Encroachment Permits (165 Montego Key-Novato, 310 Alameda de la Loma-Novato & 91 Cypress Rd, Point Reyes Station)	2,208.60
15	McLellan Co, WK	Concrete Sidewalk Work	139.92
16	Nave Motors	Smog Checks ('16 Nissan Frontier, '99 F350, '15 F150, '15 F250 & '14 F150)	380.50
17	ODP Business Solutions, LLC	Miscellaneous Office Supplies	283.25
18	Pace Supply	Hydrant Extension ($679), Concrete Lids (4) ($133), Meter Box Lids (2) ($85), Couplings (3) ($103), Gate Valve ($2,489) & Copper Pipe (300') ($3,212)	6,701.20
19	Peterson Trucks	Diagnose & Repair Faulty Fuel Injector ('21 Int'l Dump Truck) ($8,072) & Opacity Test ('12 Int'l 4400) ($217)	8,289.20
20	Brandon Pirinjian	Exp Reimb: D2 Exam Fee	65.00
21	Solenis, LLC	Praestol (2,000 lbs) (STP)	5,554.40
22	Spex CertiPrep LLC	Solids Standard (Lab)	238.17
23	SPG Solar Facility XII, LLC	July Energy Delivered Under Solar Service Agreement	16,378.25
24	Tamagno Green Products	June Sludge Removal @ STP (196 yds)	8,820.00
25	Traffic Management, LLC	Traffic Control Plan (Novato Blvd Diablo to Grant)	3,210.00
26	Underground Republic Water Works, Inc.	Valve Setters (3) ($4,015), Elbows (240) ($2,098), Couplings (120) ($750), Nipples (120) ($6,149) & Unions (120) ($2,084)	15,096.17
27	Univar	Sodium Hydroxide (12 dry tons) (STP)	8,351.93
28	USA BlueBook	Triode Electrode (STP)	419.88
29	VWR	Safety Gloves (200), Filters (3) ($279), Cartridge Kit ($790), Medium ($273), Vacuum Desiccator ($185), Chrome Plated Shelf ($349), Standard, Titrant, UV Lamp ($456), Reagent System ($3,817), Broth, Buret Kit, Hi-Temp Datalogger ($589) & Bottle Media (Lab) (Less Credit of $6,555 Applied for Faulty Reagent System)	795.18

Seq	Payable To	For	Amount
30	Waste Management	Waste Disposal	126.45
31	Water District Jobs	Recruitment Ad (Safety & Emergency Manager)	190.00
32	Williams, Anthony	Exp Reimb: Food for Meeting with Staff	143.45
33	ZORO	Self Adhesive Labels (6), Fluid End Repair Kit ($349) & Pump Repair Kit ($151)	512.46
		TOTAL DISBURSEMENTS	**$233,301.28**

The foregoing payroll and accounts payable vouchers totaling $233,301.28 are hereby approved and authorized for payment.

Julie Blue 09/01/26

Director of Administrative Services Date

9/1/2026

General Manager Date

DISBURSEMENTS - DATED SEPTEMBER 10, 2026

Date Prepared 9/8/26

The following demands made against the District are listed for approval and authorization for payment in accordance with Section 31302 of the California Water Code, being a part of the California Water District Law:

Seq	Payable To	For	Amount
P/R*	Employees	Net Payroll PPE 8/31/26	$221,734.06
91094*	Internal Revenue Service	Federal & FICA Taxes PPE 8/31/26	99,647.86
91095*	State of California	State Taxes & SDI PPE 8/31/26	24,996.47
91096*	CalPERS	Pension Contribution PPE 8/31/26	60,140.88
91097*	Nationwide	Deferred Compensation-457 PPE 8/31/26	18,850.15
91098*	Nationwide	Deferred Compensation 8/31/26-401A Match	3,219.23
91092*	CalPERS	September 2026 Health Insurance Premium (Employer $67,957, Retirees $13,119 & Employees $8,751)	89,827.35
91093*	CalPERS	Social Security Admin 218-Annual Fee	110.00
1	Alameda Electrical Distrib. Inc	Meter Panels & Breakers (Gallagher Well Site)	3,016.96
2	All Star Rents	Propane (17 gal)	85.85
3	Asbury Environmental Services	Used Oil & Gas Disposal Fee	556.00
4	AT&T	August Phone Line (Point Reyes Treatment Plant)	27.44
5	Backflow Distributors	Test Fittings (3) ($214), Backflow Test Kit Calibration ($309) & Gate Valve Supplies ($136)	658.88
6	Buck's Saw Service	Yard Tool Supplies	217.39
7	CDW-Government, Inc.	Routers (2) ($302) & Antenna (3)	375.92
8	Comcast	September Phone Services (Yard & STP)	1,616.98
9	Comcast	September Internet (999 Rush Creek Place)	1,633.89
10	DataTree	August Subscription to Parcel Data Information	100.00
11	Direct Line Inc	August Telephone Answering Service	393.97

*Prepaid

Seq	Payable To	For	Amount
12	Fisher Scientific	Ethylenediamine (Lab)	31.16
13	Forevergreen Landscape and Maintenance	Landscaping August 2026 (999 Rush Creek Pl.-$1,595) (San Marin-$719, Lynwood-$446, San Andreas-$421 Pump Stations & STP-$1,838)	5,018.73
14	Grainger	Test Leads (3) ($197), Die Grinders (2) ($175), Saw & Supplies ($335), Calibration Cylinder ($390), Hardware ($258) & Miscellaneous Tools & Supplies	2,404.40
15	V.W. Housen & Associates	Prog Pymt#2: Consulting Services for O.M. Sewer System Management Plan Update (Balance Remaining on Contract $19)	16,267.75
16	International Dioxcide Inc	Sodium Chlorite (44,920 lbs) (STP)	34,086.48
17	Kemira Water Solutions	Ferric Chloride (20 Dry Tons) (STP)	26,302.49
18	LeBrun, Kent	Exp Reimb: Safety Boots	296.27
19	Lincoln Life Employer Serv	Deferred Compensation PPE 8/31/26	6,735.30
20	Nanette Londeree	Novato Cash for Grass Rebate Program	1,288.50
21	Minuteman Press	Signs (200) - "Irrigated With Recycled Water"	2,273.91
22	North Marin Auto Parts	Service Parts ('21 Int'l Dump Truck-$237, '21 Nissan Frontier-$143, '21 Ford Ranger-$126)	505.79
23	North Bay Gas	Acetylene, Argon, Oxygen, Wire, Brush & Nitrogen	587.27
24	Opperman & Son, Inc.	Bushing ('02 Int'l Dump Truck)	91.35
25	Parkinson Accounting Systems	August Accounting Software Support	195.00
26	Peterson Trucks	Replace Fuel Injectors & Fuel Pump ('21 Int'l Dump Truck)	18,880.13
27	PG&E	August Energy Bill for Construction Breakroom	12.89
28	Pini Hardware	Miscellaneous Tools & Supplies	345.08
29	Recology Sonoma Marin	August Waste Removal (999 Rush Creek Place-$732 & STP-$334)	1,066.06
30	Thatcher Company of CA	Chlorine (2,000) (STP)	5,598.00

*Prepaid

Seq	Payable To	For	Amount
31	USA BlueBook	Desiccant Cartridge & Valve Repair Kits (4) ($342)	432.82
32	Vanguard Cleaning Systems	September Janitorial Service (999 Rush Creek Place-$4,950 & STP-$920)	5,870.00
33	Verizon Wireless	August Cell Phone Charges	1,636.54
34	Winzer Corporation	14" Heavy Duty Blades (10)	437.97
		TOTAL DISBURSEMENTS	**$657,573.17**

The foregoing payroll and accounts payable vouchers totaling $657,573.17 are hereby approved and authorized for payment.

Julie Blue 09/08/26

Director of Administrative Services Date

9/08/2026

General Manager Date

NORTH MARIN WATER DISTRICT
MONTHLY PROGRESS REPORT FOR AUGUST 2026
September 15, 2026

1.

Novato Potable Water Prod - SW & STP Combined - in Million Gallons - FYTD

Month	*FY26/27*	*FY25/26*	*FY24/25*	*FY23/24*	*FY22/23*	*27 vs 26 %*
July	255.2	248.1	264.8	218.6	224.5	3%
August	266.3	250.8	252.9	230.9	235.9	6%
FYTD Total	521.5	498.8	517.7	449.6	460.4	5%

West Marin Potable Water Production - in Million Gallons - FY to Date

Month	*FY26/27*	*FY25/26*	*FY24/25*	*FY23/24*	*FY22/23*	*27 vs 26 %*
July	7.3	8.1	8.9	7.1	6.3	-10%
August	7.4	8.3	8.7	7.5	6.8	-11%
FYTD Total	14.6	16.4	17.6	14.6	13.1	-11%

Stafford Treatment Plant Production - in Million Gallons - FY to Date

Month	*FY26/27*	*FY25/26*	*FY24/25*	*FY23/24*	*FY22/23*	*27 vs 26 %*
July	101.0	93.4	0.0	67.0	56.3	8%
August	117.9	85.8	0.0	98.3	67.9	37%
FYTD Total	218.9	179.3	0.0	165.3	124.2	22%

Recycled Water Production* - in Million Gallons - FY to Date

Month	*FY26/27*	*FY25/26*	*FY24/25*	*FY23/24*	*FY22/23*	*27 vs 26 %*
July	36.5	39.1	54.6	31.0	43.1	-6%
August	35.2	40.3	50.1	34.8	41.6	-13%
FYTD Total*	71.8	79.3	104.7	65.8	84.8	-10%

*Excludes potable water input to the RW system: FY26&FY27 = Total Consumption, FY25=19MG, FY24=13.8MG, FY23=10.8 MG FY22=10 MG;

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2. Regional and Local Water Supply

Lake Sonoma

	Current		2025	
Lake Storage*	78,126	MG	77,228	MG
Supply Capacity	90.8	%	89.8	%

*Normal capacity =-245,000 AF (79,833.5 MG); deviation storage pool of 264,000 AF (86,025 MG)

Lake Mendocino

	Current		2025	
Lake Storage *	21,371	MG	25,833	MG
Supply Capacity	59	%	71	%

*Normal capacity = 70,000-110,000 AF (22,800-35,840 MG); FIRO pool 26,000-36,170 MG

3. Stafford Lake Data

	August Average		August 2026		August 2025	
Rainfall this month	.04	Inches	0	Inches	0	Inches
Rainfall this FY to date	.05	Inches	0	Inches	0	Inches
Lake elevation*	185.15	Feet	188.67	Feet	186.85	Feet
Lake storage**	701	MG	901	MG	795	MG
Supply Capacity	50	%	64	%	57	%

* Spillway elevation is 196.0 feet (NGVD29)
** Lake storage less 390 MG = quantity available for normal delivery

Temperature (in degrees)

	Minimum	Maximum	Average
August 2026 (Novato)	48	95	68.5
August 2025 (Novato)	49	99	70.18

4. Number of Services

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August 31	Novato Water			Recycled Water			West Marin Water			Oceana Marin Sewer		
	FY27	FY26	Incr %	FY27	FY26	Incr %	FY27	FY26	Incr %	FY27	FY26	Incr %
Total meters installed	21,053	21,032	0.1%	107	106	0.9%	813	811	0.2%	-	-	-
Total meters active	20,902	20,884	0.1%	105	104	1.0%	804	802	0.2%	-	-	-
Active dwelling units	23,976	23,976	0.0%	-	-	-	838	838	0.0%	241	241	0.0%

5. Oceana Marin Monthly Status Report

Description	August 2026	August 2025
Effluent Flow Volume (MG)	.450	.483
Irrigation Field Discharge (MG)	.583	.427
Treatment Pond Freeboard (ft)	6.6	Empty
Storage Pond Freeboard (ft)	10.3	8.5

6. Safety/Liability

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	Industrial Injury with Lost Time				Liability Claims Paid	
	Lost Days	OH Cost of Lost Days ($)	No. of Emp. Injured	No. of Incidents	Incurred (FYTD)	Paid (FYTD) ($)
FY 26/27 through Aug	32	$14,003	2	0	0	$0
FY 25/26 through Aug	8	$3,478	2	0	0	$0

Days since lost time accident through August 31, 2026 **26** **Days**

7. Energy Cost

		August			*Fiscal Year-to-Date thru August*		
FYE		*kWh*	*¢/kWh*	*Cost/Day*	*kWh*	*¢/kWh*	*Cost/Day*
FY 26/27	Stafford TP	65,513	25.0¢	$528	131,026	25.0¢	$528
	Pumping	162,409	42.3¢	$2,291	313,041	42.7¢	$2,265
	Other[1]	51,043	49.9¢	$850	98,765	50.2¢	$840
		278,965	39.6¢	$3,669	542,832	39.8¢	$3,633
FY 25/26	Stafford TP	66,728	24.3¢	$522	133,189	24.3¢	$521
	Pumping	163,230	44.4¢	$2,498	329,956	48.4¢	$2,707
	Other[1]	31,797	49.3¢	$541	68,821	47.3¢	$552
		261,755	39.9¢	$3,561	531,965	42.2¢	$3,780
FY 24/25	Stafford TP	67,183	23.6¢	$510	136,659	23.6¢	$537
	Pumping	169,732	41.0¢	$2,317	328,647	41.2¢	$2,294
	Other[1]	39,184	46.3¢	$604	77,529	50.4¢	$662
		276,098	37.5¢	$3,432	542,836	38.1¢	$3,493

[1]Other includes West Marin Facilities

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8. Water Conservation Update

	Month of August 2026	Fiscal Year To Date	Program Total To Date
High Efficiency Toilet (HET) Rebates	1	10	4,722
Retrofit Certificates Filed	8	30	7,478
Cash for Grass Rebates	0	0	1,123
Washing Machine Rebates	0	1	6,092
Water Smart Home Survey	3	6	3,982

9. Utility Performance Metric

August 2026 Service Disruptions

SERVICE DISRUPTIONS (No. of Customers Impacted)	**August 2026**	**August 2025**	**Fiscal Year to Date 2026**	**Fiscal Year to Date 2025**
PLANNED				
Duration Between 0.5 and 4 hours	5	5	17	21
Duration Between 4 and 12 hours	0	0	0	0
Duration Greater than 12 hours	0	0	0	0
UNPLANNED				
Duration Between 0.5 and 4 hours	3	0	3	2
Duration Between 4 and 12 hours	130	0	130	0
Duration Greater than 12 hours	0	0	0	0
SERVICE LINES REPLACED				
Polybutylene	1	2	12	7
Copper Replaced or Repaired)	4	3	5	5

August 2026 Service Disruptions

For the month of August, we had 5 planned service disruptions:

Plastic: There was 1 plastic service leak on Cypress Rd in West Marin.

Copper: We replaced 4 copper services on 4th St, Alameda De La Loma, and Ignacio Valley Cir.

Unplanned: There were 2 main breaks for the month of August. An 8” AC break on Montego Key that affected 130 customers, and a broken blow-off on Redbud Ct that affected 3 customers.

10. Summary of Complaints and Service Orders – August 2026

Tag Breakdown:

Total: 201 **Consumer:** 72 Office: 129

Type	Aug-26	Aug-25	Added Notes
Billing			
High Bill	3	6	
Low Bill	1	1	
Total	**4**	**7**	
Meter Replacement	58	9	
Total	**58**	**9**	
Need Read	2	3	
Total	**2**	**3**	
Leak			
Consumer	77	78	
District	12	17	
Total	**89**	**95**	
Water Quality			
Other	8	0	
Total	**8**	**0**	
Check Pressure	4	2	
Total	**4**	**2**	
Turn Off / On	29	23	
Total	**29**	**23**	
Other	7	41	
Total	**7**	**41**	
TOTAL FOR MONTH:	**201**	**180**	**12%**

Bill Adjustments Under Board Policy:

August 26 vs. August 25

Aug-26	19	$5,724
Aug-25	17	$6,002

Fiscal Year vs Prior FY

FY 26/27	38	$15,109
FY 25/26	42	$16,199

NORTH MARIN WATER DISTRICT

MEMORANDUM

To: Board of Directors Date: September 15, 2026

From: Julie Blue, Director of Administrative Services JB
Nancy Williamson, Accounting Supervisor NW

Subject: Auditor-Controller's Monthly Report of Investments for July 2026
T:\AC\WORD\invest\27\Investment Report 0726.docx

RECOMMENDED ACTION: Information

FINANCIAL IMPACT: None

At month end the District's Investment Portfolio had an amortized cost value (i.e., cash balance) of $15,461,342 and a market value of $15,452,565. During July the cash balance decreased by $2,201,156. The market value of securities held decreased $2,198,904 during the month. The total unrestricted cash balance at month end was $176,678, 58% of the Target Reserves are funded and 78% of the Minimum Reserves are funded.

At July 31, 2026, 50% of the District's Portfolio was invested in California's Local Agency Investment Fund (LAIF), 35% in Time Certificates of Deposit, 7% in the Marin County Treasury, 4% in the US Bank Money Market Fund and 4% retained locally for operating purposes. The weighted average maturity of the portfolio was 119 days, compared to 114 days at the end of June. The LAIF interest rate for the month was 3.84%, compared to 3.82% the previous month. The weighted average Portfolio rate was 3.51%, compared to 3.51% for the prior month.

Investment Transactions for the month of July are listed below:

7/15/2026	CA State Treasurer	LAIF	$103,166	4-6/26 Quarterly LAIF interest credit
7/13/2026	BMW Bank	US Bank Investment Account	$244,000	CD Maturity
7/22/2026	LAIF	US Bank	$1,000,000	Transfer from LAIF account
7/27/2026	LAIF	US Bank	$1,100,000	Transfer from LAIF account

ATTACHMENTS:

1. Monthly Report of Investments – July 2026

ATTACHMENT 1

NORTH MARIN WATER DISTRICT
AUDITOR-CONTROLLER'S MONTHLY REPORT OF INVESTMENTS
July 31, 2026

Type	Description	S&P Rating	Purchase Date	Maturity Date	Cost Basis[1]	7/31/2026 Market Value	Yield[2]	% of Portfolio
LAIF	State of CA Treasury	AA-	Various	Open	$7,783,729	$7,774,952	3.84% [3]	**50%**
Time Certificate of Deposit								
TCD	Israel Disc Bk Ny	n/a	9/13/24	9/14/26	245,000	245,000	4.00%	2%
TCD	Ally Bank Sandy Utah	n/a	10/3/24	9/28/26	245,000	245,000	3.80%	2%
TCD	Utah First Fec CR UN Salt Lake	n/a	10/18/24	10/19/26	249,000	249,000	4.00%	2%
TCD	American Express Nat'l Bank	n/a	11/7/24	11/6/26	245,000	245,000	4.00%	2%
TCD	Bank of Hapoalim NY	n/a	11/26/24	11/23/26	245,000	245,000	4.10%	2%
TCD	Dr Bank Darien	n/a	12/20/24	12/21/26	249,000	249,000	4.10%	2%
TCD	Goldman Sachs Bk USA	n/a	1/28/25	1/28/27	244,000	244,000	4.15%	2%
TCD	Oregon Community CU	n/a	2/24/25	2/24/27	249,000	249,000	4.30%	2%
TCD	Security First Bk	n/a	3/21/25	3/22/27	245,000	245,000	4.00%	2%
TCD	Toyota Fncl Svgs BK NV	n/a	4/10/25	4/12/27	245,000	245,000	4.00%	2%
TCD	Transportation Alliance Bk	n/a	5/12/25	5/12/27	249,000	249,000	3.95%	2%
TCD	B1 Bank Baton Rouge La	n/a	6/30/25	6/30/27	249,000	249,000	4.00%	2%
TCD	Bny Melon	n/a	8/13/25	8/13/27	245,000	245,000	3.80%	2%
TCD	Institution Svgs Newbury	n/a	10/28/25	10/28/27	249,000	249,000	3.60%	2%
TCD	Morgan Stanley Bk NA	n/a	11/12/25	11/12/27	245,000	245,000	3.65%	2%
TCD	Austin Telco	n/a	12/19/25	12/20/27	249,000	249,000	3.80%	2%
TCD	Morgan Stanley Private Bk NA	n/a	1/21/26	1/21/28	245,000	245,000	3.70%	2%
TCD	UBS Bank USA	n/a	2/25/26	2/25/28	249,000	249,000	3.80%	2%
TCD	Anderson Bros Bk	n/a	2/27/26	2/28/28	249,000	249,000	3.65%	2%
TCD	Merrick Bank	n/a	3/20/26	3/20/28	249,000	249,000	3.85%	2%
TCD	Bank of America NA	n/a	4/10/26	4/10/28	245,000	245,000	3.95%	2%
TCD	First Fncl Bk USA	n/a	6/12/26	6/12/28	249,000	249,000	4.10%	2%
					$5,433,000	**$5,433,000**	**3.92%**	**35%**
MM	US Bank Mmda Global Fund		Various	Open	**$625,114**	**$625,114**	**3.36%**	**4%**
Other								
Agency	Marin Co Treasury	AAA	Various	Open	$1,044,474	$1,044,474	0.76%	7%
Other	Various	n/a	Various	Open	575,024	$575,024	0.28%	4%
				TOTAL IN PORTFOLIO	**$15,461,342**	**$15,452,565**	**3.51%**	**100%**

Weighted Average Maturity = **119 Days**

LAIF: State of California Local Agency Investment Fund.
TCD: Time Certificate of Deposit.
Treas: US Treasury Notes with maturity of 5 years or less.
Agency: STP State Revolving Fund Loan Reserve.
Other: Comprised of 5 accounts used for operating purposes. US Bank Operating Account, US Bank STP SRF Loan Account, US Bank FSA Payments Account, Bank of Marin AEEP Checking Account & NMWD Petty Cash Fund.

1 Original cost less repayment of principal and amortization of premium or discount.
2 Yield defined to be annualized interest earnings to maturity as a percentage of invested funds.
3 Earnings are calculated daily - this represents the average yield for the month ending July 31, 2026.

Interest Bearing Loans	Loan Date	Maturity Date	Original Loan Amount	Principal Outstanding	Interest Rate
Marin Country Club Loan	1/1/18	11/1/47	$1,265,295	$937,843	1.00%
Marin Municipal Water - AEEP	7/1/14	7/1/32	$3,600,000	$1,122,883	2.71%
Employee Housing Loan	Various	Various	$1,150,000	$1,150,000	Contingent
		TOTAL INTEREST BEARING LOANS	**$6,015,295**	**$3,210,726**	

The District has the ability to meet the next six months of cash flow requirements.

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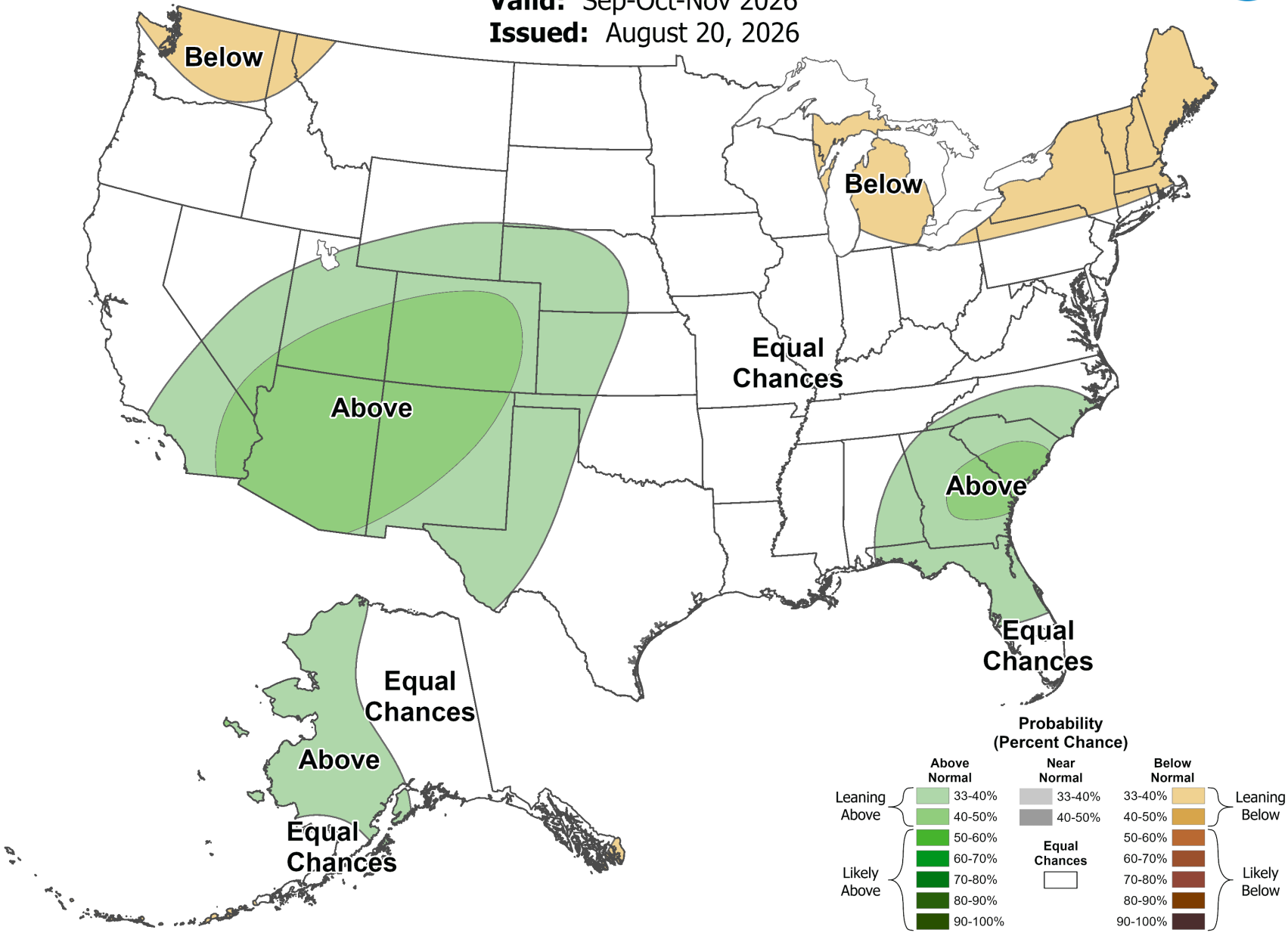
Seasonal Precipitation Outlook

Valid: Sep-Oct-Nov 2026
Issued: August 20, 2026



Supervisor Rebecca Hermosillo
First District

August 19, 2026

Dear Water and Technical Advisory Committee Members:

As the chair of the Sonoma County Water Agency Board of Directors, I'm pleased to share with our water contractor community that the Sonoma Water Board of Directors has selected Assistant General Manager Brad Sherwood to serve as interim general manager, effective Sept. 15. Brad will succeed General Manager Grant Davis, who will retire Sept. 14 after 16 years of dedicated leadership at Sonoma Water.

Brad brings extensive knowledge of Sonoma Water, strong relationships throughout our region and a deep commitment to public service. His nearly two decades with the agency give him a strong understanding of our organization, our employees and the important work you do every day. The Board is confident that he will provide steady leadership during this transition while keeping Sonoma Water focused on its mission and the communities we serve.

On behalf of the Board of Directors, I want to thank General Manager Davis for his many years of service to Sonoma Water. His steady leadership has been invaluable to the agency. I also want to congratulate Brad and thank him for stepping into this important role.

The Board expects to begin a nationwide search for Sonoma Water's permanent general manager soon, and we will share additional information as that process moves forward.

Please join me in congratulating Brad and supporting him as he takes on this new responsibility.

The Sonoma Water Board of Directors appreciates the work and commitment each of you make to serving our community. We are grateful for your partnership on all things water and look forward to working collaboratively into the future.

Rebecca Hermosillo
Chair, Sonoma Water Board of Directors

SONOMA COUNTY BOARD OF SUPERVISORS
575 Administration Drive - Room 100A | 575 Administration Drive - Room 100A
office: (707) 565-2241

Tony Williams

From: Tony Williams
Sent: Friday, August 21, 2026 1:36 PM
To: Grant Davis - SCWA
Cc: Ken Eichstaedt - Personal; Stephen Petterle - Personal
Subject: NMWD Recognition

Dear Grant,
As a follow up to our phone call earlier this week, I wanted to formally thank you on behalf of the Board of Directors and staff of the North Marin Water District. In lieu of a fancy Resolution as we discussed, I wanted to share the raw comments from our Directors at the August 18th Meeting:

"Are we going to recognize Grant's departure…like a letter of gratitude for his long service and all the great contributions to Sonoma Water?"

"He is a good guy, hard worker and well organized"

"I think he has provided extraordinary service considering all the special interests"

"He kept everybody sort of calm and collected with Potter Valley…and a magnificent job on behalf of the area…"

"Our partnership with Sonoma Water has been a good thing"

On behalf of the staff, officers, and Directors of the North Marin Water District, we extend to you, Grant Davis, sincere good wishes in your retirement and for many happy productive years filled with all the good things of life.

I wanted to personally thank you for demonstrating what good leadership is supposed to be through your actions with staff, elected officials, the Army Corps of Engineers, and the public.

Please consider this an open invitation to visit NMWD at any time.

I have cc'd Ken Eichstaedt, Board President and Steve Petterle, Vice President who I briefed yesterday about our exchange.

Cheers,

Tony Williams, PE
General Manager
North Marin Water District
(415) 897-4133

NORTH MARIN WATER DISTRICT

COALITION URGES CALIFORNIA COURT TO CONSIDER WILDFIRE IMPLICATIONS ON PUBLIC WATER SYSTEMS

BY ACWA STAFF AUG 24, 2026 NEWS RELEASES

SACRAMENTO — A coalition of organizations representing state and national water providers have filed a joint legal brief with the California Second District Court of Appeal in response to a lawsuit seeking to hold a water utility responsible for wildfire damage.

The lawsuit, *Grigsby et al. v. City of Los Angeles et al.*[1], was filed in January 2025 following the Palisades wildfires. The joint brief emphasizes the unique operational and regulatory responsibilities of water agencies and the importance of preserving workable legal standards for agencies responsible for providing water service under extraordinary circumstances. A California Court of Appeal is on the verge of making a decision that will pose significant implications for water providers and customers.

Public water agencies provide the public with critical retail water service across the state. This includes delivering safe and reliable drinking water as well as an immediately available water service to aid in structural fire suppression. These domestic water systems were not designed to combat the expansive wildfires experienced today.

Public water systems have already taken actions to prepare for future wildfire events in recognition of the devastating impacts wildfires pose on communities. This includes investments to modernize aging infrastructure and develop emergency preparedness and response plans. If a water utility can be held liable whenever a wildfire outpaces the capacity of its system, then every public water agency in the State becomes a potential defendant after every major fire regardless of fault.

“While this wildfire devastated Southern California’s communities, public water systems can only aid firefighting activities and should not be held to an unrealistic standard of fully combating a wildfire,” said Caleb Raspler, Federal Relations Representative with the Association of California Water Agencies. “ACWA’s members remain committed to working with federal, state and local partners to implement methods and investments that deliver reliable water resources to communities throughout California, including in emergencies.”

“The Palisades Wildfire was a tragedy, but it would be misguided to penalize local water sys

for being unable to supply the immense quantities of water necessary to effectively fight the massive blaze," said Dan Hartnett, Interim Chief Executive Officer of the Association of Metropolitan Water Agencies. "Public water systems across California and the U.S. need funding support to solidify their infrastructure, not penalties for failing to achieve fire suppression objectives that are beyond their regulatory mandates and design capabilities."

###

The Association of California Water Agencies (ACWA) is the largest statewide coalition of public water agencies in the United States, organized and existing under the laws of the State of California since 1910. ACWA represents approximately 470 member agencies that are responsible for delivering about 90 percent of the water to communities, farms, and businesses in California. ACWA and its members are dedicated to providing a high-quality, reliable water supply in an environmentally sustainable and fiscally responsible manner.

The Association of Metropolitan Water Agencies (AMWA) is an is an organization of the largest publicly owned drinking water systems in the United States. AMWA's members provide more than 140 million people across the country with safe drinking water, including nearly 40 million Californians. AMWA was established in 1981 and today the association works with federal policymakers to ensure that the interests of large publicly owned drinking water systems are represented in Washington, D.C.

© 2026 Association of California Water Agencies

Eel-Russian Project Authority

Eel-Russian Project Authority
c/o Sonoma County Water Agency
404 Aviation Blvd, Santa Rosa, CA 95403
https://www.eelrussianauthority.org

Board of Directors

County of Sonoma James Gore	Mendocino County Inland Water and Power Commission Madeline Cline Janet Pauli, Vice Chair
Round Valley Indian Tribes James Russ	Sonoma County Water Agency David Rabbitt, Chair

Board Meeting
August 6, 2026 12:00-2:00pm

County of Sonoma Board of Supervisors Chambers
575 Administration Drive, Room 102A
Santa Rosa, CA 95403

EXCERPT

Board of Directors Meeting Agenda
August 6, 2026

1. Call to Order
2. Approval of the Agenda
3. Consent Calendar
   a. Approve the minutes of the meeting of the Board of Directors on December 11, 2025
   b. Insurance for Eel-Russian Project Authority

Regular Calendar Items

4. 2026-27 Eel-Russian Project Authority Budget and Related Actions
5. Informational Items
   a. New Eel-Russian Facility water diversion modeling analysis update and presentation
   b. Executive Director's report
6. Public Comment - items not on the agenda
7. Board Member Announcements/Reports

Eel-Russian
Project Authority

Item 5. Informational Items

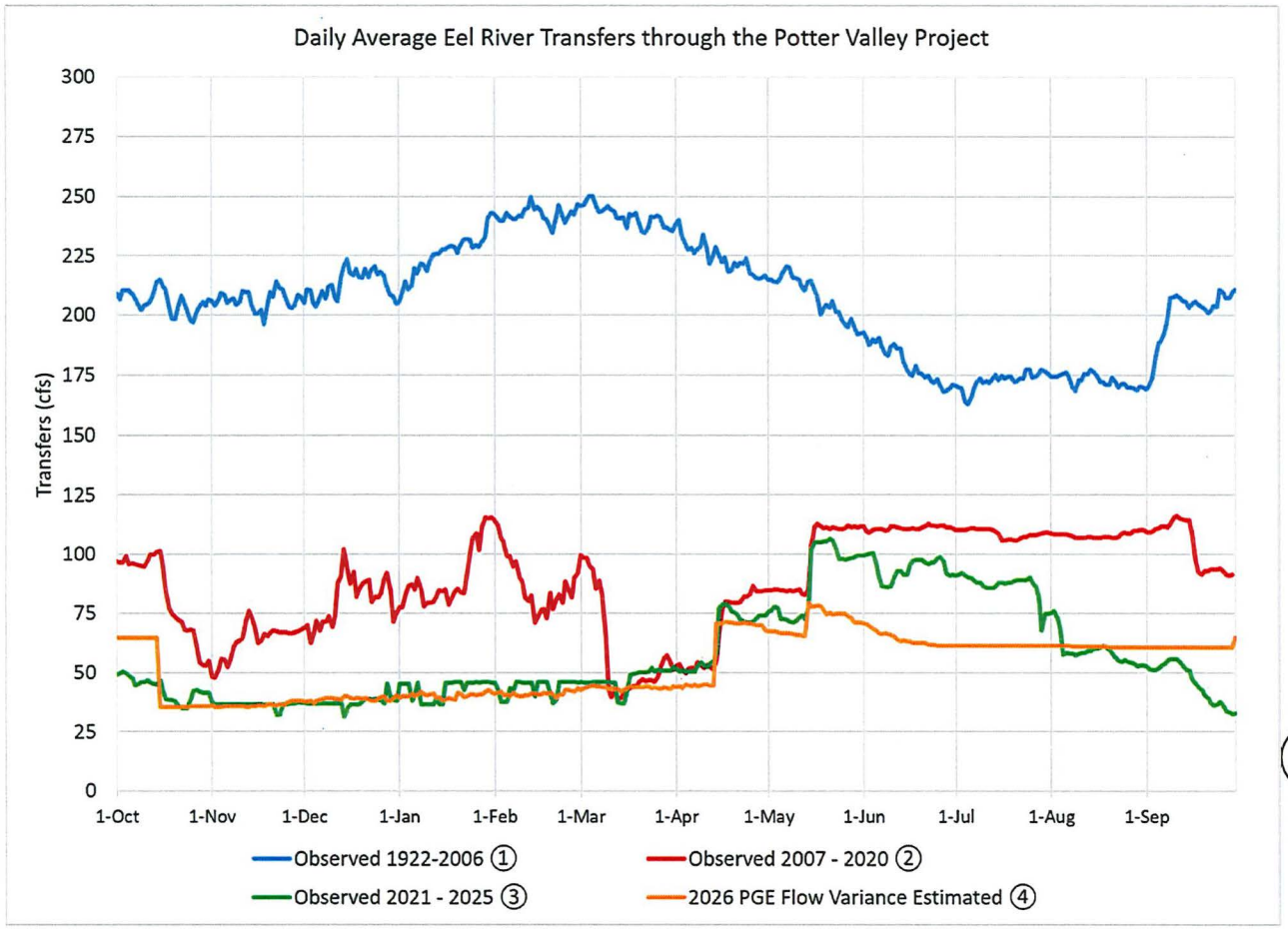
a. NERF Water Diversion Modeling Analysis and Update

John Mendoza, P.E. (Water Resources Engineer IV, Sonoma Water)

NERF Water Diversion Modeling Analysis
Presentation Overview

- Sonoma Water has been modeling how transfers from the Eel River to the Russian River will be different than historical diversions as a result of the decommissioning of the Potter Valley Project and the construction of the New Eel-Russian Facility (NERF). This analysis will continue to be refined and updated as new information becomes available. Results may change from previous presentations.
- This modeling is made more complicated by major changes in the diversion rules implemented over the last 20 years as a result of the 2004 FERC License Amendment, the transformer bank failure, seismic risk assessment that reduced operational storage capacity at Lake Pillsbury, major drought, and FERC flow variances.
- Under the NERF rules, there is water for diversion in all year types, even drought years such as 2020 and 2021, and water would have been diverted in water years 2025 and 2026.
- In general, the average annual water available to be transferred through NERF under the Water Diversion Agreement each year is similar to transfers under the 2004 FERC License Amendment, but more Russian River storage is needed to maximize those transfers because of change in seasonality of the transfers.
- The Eel-Russian Project Authority continues to lead the effort to design, permit, and construct NERF so that water can continue to be diverted. Design and permitting are currently 100% funded.

Historical Eel River Transfers



① **Water Years 1922-2006:**
Post Scott Dam construction, Pre-2004 FERC License Amendment
Average WY Volume: ~150,000 ac-ft

② **Water Years 2007-2020:**
Post-2004 FERC License Amendment
Average WY Volume: ~64,000 ac-ft

③ **Water Years 2021-2025:**
Post transformer bank failure, Scott Dam seismic risk determination, and major drought
Average WY Volume: ~42,000 ac-ft

④ **Post Water Year 2025 Estimated:**
Estimated average transfers with FERC Flow Variances until NERF construction (2026 Flow Variance)
Average WY Volume: ~38,000 ac-ft

Eel River Transfer Analysis: 2 Operational Scenarios

Scenario #1: Observed (reported values)

- Eel River Transfers = observed (reported values)
- Lake Mendocino storage and outflow = observed (reported values)

Scenario #2: NERF Modeled

- *Eel River Assumptions*
  - Flow at Cape Horn Dam (NERF Facility)
    - Calculated using reported/estimated values from Scott Dam, Cape Horn Dam, and Potter Valley Project transfers
  - Transfer Operations (NERF Operations)
    - Consistent with the 2025 Water Diversion Agreement (WDA) Terms (Table 1)
    - Developed to allow transfers through the NERF while being protective of salmonid life stages in the Eel River

	Fall Flows	Winter Flows	Spring Flows	Summer Flows
	Oct 1 – Dec 31	Jan 1 – Feb 29	Mar 1 – May 31	June 1 – Sept 30
Floor (cfs)	300	250	125	35
Diversion Rate (% of flow)	20%	30%	20%	20%
Additional Rules	Require 1 freshet over 500 cfs	N/A	N/A	N/A

Table 1: NERF operation assumptions

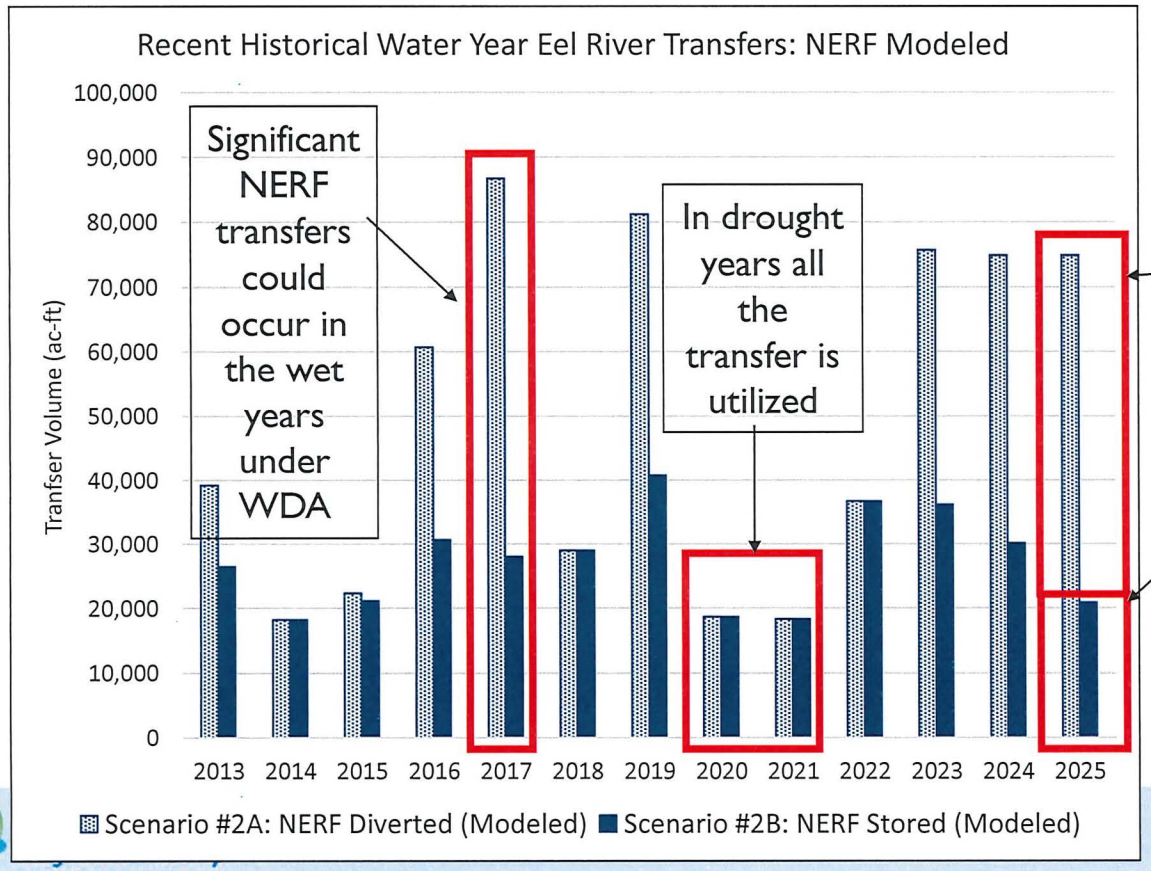
- *Russian River Assumptions (Current Lake Mendocino Operations)*
  - 2025 Lake Mendocino Updated Water Control Manual (includes FIRO)
  - Lake Mendocino Storage Thresholds Hydrologic Index
  - 2025 Biological Opinion Minimum Instream Flow Requirements
  - Inflows and downstream flows/losses = observed

Modeled NERF Eel River Transfers last 13 Water years (WY2013-WY2025)

Analyze Two Metrics (A and B)

A) Diverted: Total transferred based on Eel River conditions. NERF modeled based on WDA.

B) Stored: Transfers that can be currently stored in Lake Mendocino or passed through for downstream beneficial use (not released for flood control). NERF model assumes a PVID future storage project. The modeling has included a placeholder 3,000 ac-ft.

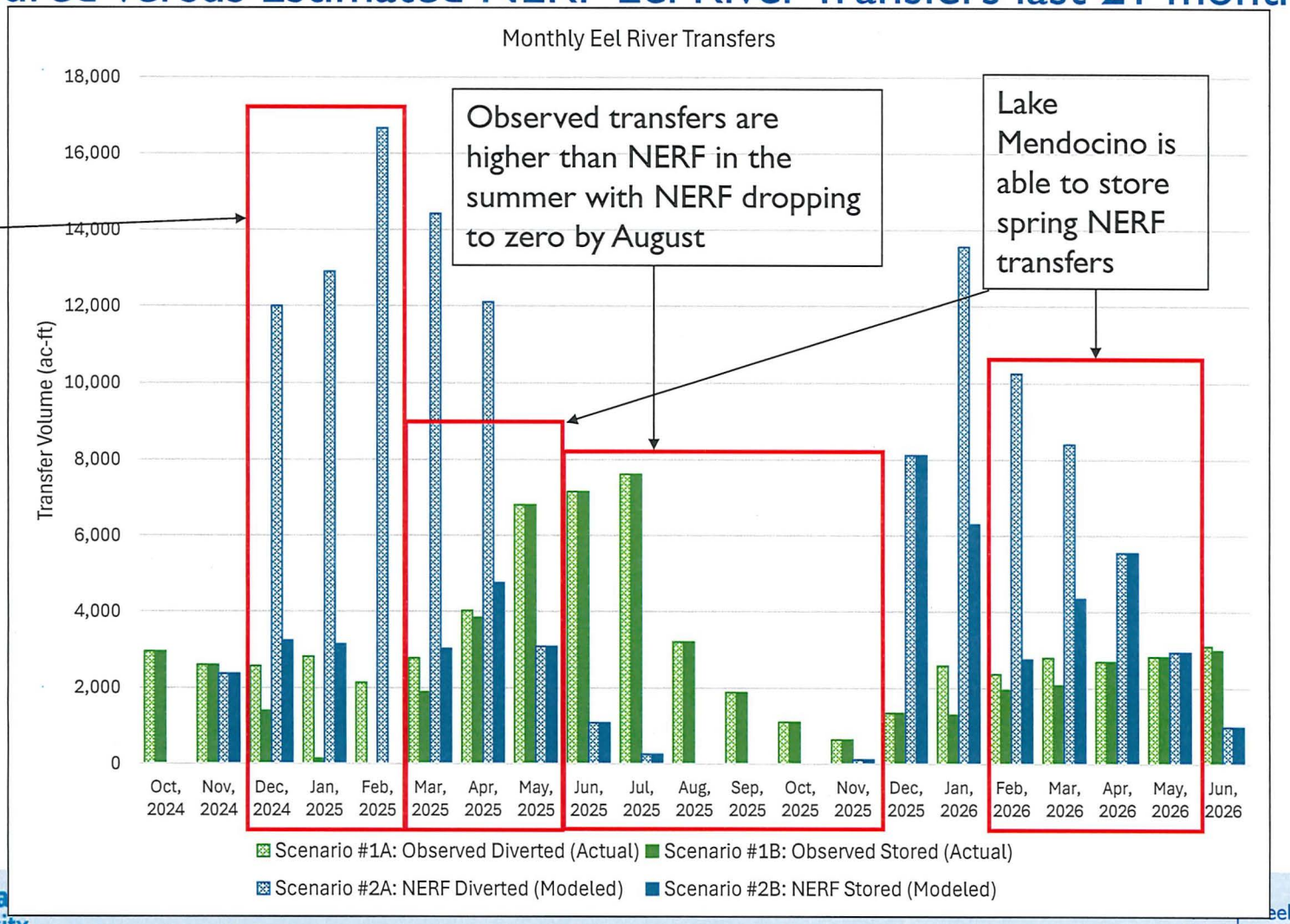


Hatched pattern column volume above the solid column represents the volume of additional transfer available if additional system storage is available

Solid represents the volume of transfer that could be captured with current storage capacity

Measured versus Estimated NERF Eel River Transfers last 21 months

Large NERF transfers available under WDA with future storage projects in wet winters



Observed transfers are higher than NERF in the summer with NERF dropping to zero by August

Lake Mendocino is able to store spring NERF transfers

NERF versus Measured Eel River Transfers

	Monthly Volumes (ac-ft)			
	Scenario #1A: Observed Diverted (Actual)	Scenario #1B: Observed Stored (Actual)	Scenario #2A: NERF Diverted (Modeled)	Scenario #2B: NERF Stored (Modeled)
Oct-24	2,942	2,942	0	0
Nov-24	2,588	2,588	2,358	2,358
Dec-24	2,563	1,381	11,994	3,223
Jan-25	2,805	132	12,894	3,132
Feb-25	2,130	0	16,658	0
Mar-25	2,773	1,880	14,416	3,020
Apr-25	4,017	3,838	12,093	4,742
May-25	6,799	6,799	3,073	3,073
Jun-25	7,145	7,145	1,070	1,070
Jul-25	7,603	7,603	243	243
Aug-25	3,197	3,197	0	0
Sep-25	1,870	1,870	0	0
Oct-25	1,089	1,089	0	0
Nov-25	629	629	112	112
Dec-25	1,333	1,333	8,109	8,109
Jan-26	2,575	1,285	13,560	6,297
Feb-26	2,360	1,948	10,241	2,745
Mar-26	2,787	2,071	8,399	4,339
Apr-26	2,686	2,686	5,549	5,549
May-26	2,817	2,817	2,928	2,928
Jun-26	3,088	2,981	972	972
Period Total	65,795	56,213	124,667	51,913

Lake Mendocino stores NERF diversions in a springs:
Spring 2025 (wet spring):
~11,000 ac-ft for NERF (modeled)
~12,000 ac-ft for observed

Spring 2026 (dry spring):
~15,000 ac-ft for NERF (modeled)
~9,000 ac-ft for observed

Over the October 2024 through June 2026 period: NERF is modeled to have stored similar transfers over the last 21 months compared to observed

Variance start: August 2025 and May 2026

Large NERF transfers available if system storage is available

Key Take Aways

- **NERF Transfers would occur every year**
  - In the last 13 years the annual NERF transfers (modeled) range from ~18,000 ac-ft in the 2021 drought to ~86,000 ac-ft in the 2017
- **Over the Last 21 months, the NERF stored transfers (modeled) are similar to observed transfers**
  - In the last 21 months NERF (modeled) stored transfers are modeled ~52,000 ac-ft and observed stored transfers ~56,000 ac-ft
- **Significant benefits could be gained from constructing additional storage in the Russian River watershed.**
  - In the last 13 years (non-drought years) there is an average of ~40,000 ac-ft/yr of additional NERF transfers that can be utilized with additional water supply projects
- **This analysis will continue to be refined and updated as new information becomes available.**

Questions

John.Mendoza@scwa.ca.gov
Donald.Seymour@scwa.ca.gov

Tony Williams

From: Brad Sherwood <Brad.Sherwood@scwa.ca.gov>
Sent: Wednesday, September 9, 2026 1:20 PM
Subject: Water year webinar scheduled for September 30th

Follow Up Flag: Follow up
Flag Status: Flagged

Dear Water Advisory and Technical Advisory Committee Members:

We are once again hosting our bi-annual water supply webinar on September 30th from noon-1pm, moderated by Director Hermosillo. Below are the details and please do share with your constituents – we will be marketing this on our website and social media outlets. Please let me know if you have any questions.

Sonoma Water's *Water Year Update: Water Year Wrap-up* webinar offers a concise look at the past water year's rainfall, current reservoir conditions and what they mean for water supply and flood protection.

The presentation will look at how Lake Mendocino and Lake Sonoma are performing, how the Forecast-Informed Reservoir Operations program is shaping real-time decisions and what to expect going into the next water year with a very strong El Niño. Register for the webinar at https://scwa-ca-gov.zoom.us/webinar/register/WN_RAcUjP8hRtKBjXjMyWF2JA.

Speakers:

· **Rebecca Hermosillo**, Chair, Sonoma Water Board of Directors

· **Jeanine Jones**, Consultant, Sonoma Water

· **Nick Malasavage**, Chief, Operations and Readiness Division, U.S. Army Corps of Engineers San Francisco District

· **Donald Seymour**, Deputy Chief Engineer, Sonoma Water

The webinar will be conducted in English, with Spanish captions available once the video is uploaded to YouTube after the event.

Don't miss this opportunity to stay informed about water supply updates!

Thank you,
Brad Sherwood
Assistant General Manager
Business Services & External Affairs Division
Sonoma Water
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Sonomawater.org

MARIN NOV. 3 ELECTION

Candidate field gets larger at deadline

Flurry of hopefuls as filing period ends

Voters make selections at the American Legion Log Cabin polling place in San Anselmo on June 2. A long list of candidates got longer as the filing period drew to a close for the Nov. 3 elections in Marin County. Alan Dep — Marin Independent Journal, file

BY KERI BRENNER

KBRENNER@MARINIJ.COM

A long list of candidates got longer as the filing period drew to a close for the Nov. 3 elections in Marin County.

The initial filing period ended Aug. 7, but it was extended to Wednesday afternoon in cases where incumbents with expiring terms did not seek reelection. With that door open, a flurry of additional candidates jumped into council races in Corte Madera, San Anselmo, Tiburon and Fairfax, as well as board races in several districts.

The lineup as of Thursday:

Councils

Belvedere City Council: Terms are expiring for Jane Cooper and Peter Mark. Both filed for reelection. Kate Benediktsson filed to run.

Corte Madera Town Council: Terms are expiring for Rosa Thomas, Pat Ravasio and Eli Beckman. Ravasio and Beckman filed to seek another term. Ava Fruin, Deborah Gallegos and David Bell filed to run.

Fairfax: Council terms are expiring for Lisel Blash and Stephanie Hellman. Blash filed to seek reelection but withdrew. Susan Adams, Larry Bragman, Aubrey Harmon, Doug Kelly, Cheryl Scorza and Matt Da Cunha filed to run. Also: Talia Friedman filed to run for town treasurer; Deborah Benson and Bruce Ackerman filed to run for town clerk.

Larkspur City Council: The terms of Sarah Margulies, Stephanie Andre and Catherine Way are expiring. Andre and Margulies filed for reelection. Jeanne Friedel, Aaron Burnett, Spencer Doyle, Gareth Walter and Brian Jaffee filed to run.

Mill Valley City Council: Terms are expiring for Max Perrey and Stephen Burke. Both filed to run for a new term.

Novato City Council: Terms are expiring for Rachel Farac of District 2, Councilmember Pat Eklund of District 4 and Councilmember Sandeep Karkal of District 5. Farac, Bob Rasmussen and Michael Little have filed for the District 2 seat. Eklund, Luiggino Joseph Galletto, Chris Carpiniello and Daniel Christian have filed for the District 4 seat. Karkal has filed for reelection.

Ross Town Council: Terms are expiring for Julie McMillan and Elizabeth Robbins. McMillan filed for reelection. Paul Roesler, Jeff Kuhn and Robert Herbst filed to run.

San Anselmo: The terms of Councilmember Steve Burdo and Councilmember Tarrell Kullaway are expiring. Burdo filed to seek reelection. William Dittmar and Philip Chigos filed to run. Also: Lori Lopin has filed to run for town treasurer, and Cecily Wilson has filed to run for town clerk.

San Rafael City Council: Terms are expiring for Eli Hill in District 2 and Maribeth Bushey in District 3. Hill filed for reelection in District 2. Robert Sandoval and Daryoush Davidi filed for the open District 3 seat.

Sausalito City Council: Terms are expiring for Jill Hoffman and Joan Cox. Both filed to seek another term. Natassya Saad and Adrian Brinton have filed to run.

Tiburon Town Council: Terms are expiring for Jonathan Welner, Alice Fredericks and Jack Ryan. Fredericks and Ryan have filed to seek another term. Chuck Hornbrook, Kathleen Defever and Faris Jafar have filed to run.

EDUCATION

Bolinas-Stinson Union School District board: Terms are expiring for Arianne Dar, Nathan Siedman and Jacob Tonski. Dar and Tonski filed to run for another term.

Kentfield School District board: Terms are expiring for Benny Joseph, Cari Irwin and Larry Moscato. Brent Goldman, Zachary Portnoy and Traci Wilda filed to run.

Laguna Joint School District board: Terms are expiring for Sharon Hess, Sam Dolcini and Penny Bayless. Hess filed for another term. Daniel Hess filed to run.

Lagunitas School District board: Terms are expiring for Stephen Rebscher, Aaron Michelson and James Sanders. Michelson filed for reelection. Dave Cort, Ally Dukkers Wilson and Charlotte Burger Troy filed to run.

Larkspur-Corte Madera School District board: Terms are expiring for Jessica Dinday, Amir Movafaghi and Natalie Medved. Dinday and Movafaghi filed for reelection. Ryan Woodring filed to run.

Marin Community College District board: Terms are expiring for Suzanne Brown Crow, Wanden Treanor and Diana Conti. All three filed to seek reelection. Jessica Deakyne filed to seek election to the vacant seat in Area 7, which is for a short term.

Marin County Board of Education: Terms are expiring for Cynthia Irish, Marilyn Nemzer and Curtis Robinson. All filed for reelection. Craig Stuart Adams filed to challenge Irish in Trustee Area 3. Avery Lieberman filed to challenge Nemzer in Area 5. James Goddard filed to challenge Robinson in Area 6.

Miller Creek School District board: Terms are expiring for Caitlin McShane, Megan Hutchinson and Bradley Honsberger. All filed for reelection. Adam Compton and Matt Dance filed to run.

Mill Valley School District board: Terms are expiring for Yunhee Yoo, Natalie Katz and Sharon Nakatani. All filed to run for a new term.

Nicasio School District board: Terms are expiring for Elaine Doss and Mark Burton. Burton filed to seek a new term.

Novato Unified School District board: Terms are expiring for Abbey Picus, Trustee Area 4; Diane Gasson, Trustee Area 5; and Magali Limeta, Trustee Area 6. Picus and Gasson filed to seek reelection. Limeta has been elected to the Marin County Board of Supervisors. Francis Drouillard filed to challenge Picus in Trustee Area 4. Theresa Odisio Rogoff filed to run in Trustee Area 6.

Reed Union School District board: Terms are expiring for Shelby Tsai, Afsaneh Zolfaghari and Michael Ghaffary. Tsai and Ghaffary filed to run for reelection. Lina Godfrey and Krupa Antani filed to run.

Ross School District board: Terms are expiring for Jeff Bergholt, Chris Ericksen and Darius Mozaffarian. Mozaffarian filed to seek reelection. Gabriella Solar, Brad Hill, David Allen-Hughes and Elizabeth Sutro filed to run.

Ross Valley School District board: Terms are expiring for Chris Landles-Cobb and Anna Marsh. Both filed to seek reelection.

San Rafael Board of Education: Terms are expiring for Kennedy Rodas-Dias, Wing Keung Jason Lau and Carolina Martin. All filed for reelection.

Sausalito Marin City School District board: Terms are expiring for Bonnie Hough, Lauren Walters and Caroline Tiziani. Walters filed to seek a new term. Tiziani resigned on June 26, and the board plans to appoint a candidate to fill the seat on a provisional basis until the Nov. 3 election. LeShawn Holcomb, Alena Maunder and Eduardo Vazquez filed to run. Also: Recent appointee Jamal Graham filed to seek election to a two-year term.

Shoreline Unified School District board: Terms are expiring for Heidi Koenig, Trustee Area 1, and Jane Healy, Trustee Area 2. Healy filed to seek reelection. Buddy Faure and Yezenia Hernandez filed for the Trustee Area 1 seat.

Tamalpais Union High School District board: Terms are expiring for Kevin Saavedra, Cynthia Roenisch and Emily Uhlhorn. Roenisch and Saavedra filed for another term. Brian Sutherland, Leslie Harlander, Joy Koo, Maria Sandoval and Valerie Wynn filed to run.

CSD BOARDS

Bel Marin Keys Community Services District board: Terms are expiring for Steven Nash and Vincent Lattanzio. Both filed to seek reelection. Kevin Dugan filed to run.

Marin City Community Services District board: Terms are ending for full-term incumbents Kevin Douglas, Angela Haynes and Terrie Harris Green, and for short-term incumbent Sarah Canson. Haynes and Douglas filed to seek reelection. Royce McLemore, Capri Price, La Tanya Wiggins, Derek Morgan, Beatra Hall and Eboni McKinley filed for the full-time seat. Canson and Terrie Harris Green filed for the short-term seat.

Marinwood Community Services District board: Terms are expiring for Sivan Oyserman and William Shea. Both filed to run for a new term.

Muir Beach Community Services District board: Terms are ending for Leighton Hills, Christine Murray and Steven Shaffer. All three filed.

Tamalpais Community Services District board: Terms are ending for Jim Jacobs and Jeff Brown. Brown filed for reelection. Pam Keon filed to run.

Tomales Village Community Services District board: Terms are expiring for William Bonini, Dru O'Neill and John Ward. All filed for reelection.

WATER DISTRICTS

Marin Municipal Water District board: Terms are ending for Matthew Samson, Division 1; Ranjiv Khush, Division 3; and Jed Smith, Division 4. Samson and Khush filed to seek another term. Erika Lovejoy filed for the Division 4 seat.

North Marin Water District board: Terms are ending for Kenneth Eichstaedt in Division 1 and Richard Fraites in Division 5. Eichstaedt filed to seek another term. Laurie Williams filed to run in Division 5.

Stinson Beach County Water District board: Terms are ending for Lawrence Baskin and Jim Zell. Both filed to seek reelection.

HEALTH CARE

Marin Healthcare District board: Terms are expiring for Brian Su in Division 3; Jennifer Rienks in Division 4; and the open seat in Division 1. Rienks and Su filed to seek reelection. Dr. Jonathan Goff filed to compete for the Division 3 seat. Clayton Hess and Kendra Hoepper filed to run in Division 1.

FIRE SERVICES

Bolinas Fire Protection District board: Terms are ending for Nancy Torrey and Claire Molesworth. Both filed to seek reelection.

Kentfield Fire Protection District board: Terms are expiring for Dennis Ryan, Ronald Naso and Barry Evergettis. All filed to seek reelection.

Novato Fire Protection District board: Terms are expiring for Bruce Goines in District 4 and Bill Davis in District 5. Both filed to seek new terms.

Sleepy Hollow Fire Protection District board: Terms are expiring for full-term incumbent Richard Shortall and short-term incumbent Jennifer Gauna. Both filed to seek new terms.

Southern Marin Fire Protection District board: Terms are expiring for Cristine Deberry, Kurt Chun, Thomas Perazzo and Peter Fleming. All filed to seek new terms. Eric Steinhofer, Amy Svendberg and Thomas Clark have filed to run.

Stinson Beach Fire Protection District board: Terms are expiring for full-term incumbents Ariel Poler and Mark White, and for short-term incumbent Christophe Bertrand. Poler and Bertrand filed to seek new terms.

Tiburon Fire Protection District board: Terms are expiring for Joy Ho, Cheryl Woodford and Richard Jones. All filed to seek reelection.

SANITARY DISTRICTS

Alto Sanitary District board: Terms are expiring for Porter Merriman and Marc Nash. The county reported no candidates.

Homestead Valley Sanitary District board: Terms are expiring for Allan Leibof and Alan Saltzman, and for short-term incumbent Penelope Alexandris. All filed to seek new terms.

Las Gallinas Valley Sanitary District board: Terms are ending for Crystal Yezman, Nicholas Lavrov and Megan Clark. All filed to seek new terms.

Novato Sanitary District board: Terms are ending for Dennis Bentley in Division 2; Tim Fuette in Division 3; Carole Dillon-Knutson in Division 5; and short-term incumbent Jeffrey Tarantino in Division 1. Bentley, Fuette and Tarantino filed to seek new terms. Sherri Jacobs filed to run in Division 5.

Richardson Bay Sanitary District board: Terms are expiring for Mark Fitzgerald, Peter McIntosh and Patrick Walravens. All filed to seek new terms. John Turnacliff filed to run.

Sausalito-Marin City Sanitary District board: Terms are expiring for Shirley Thornton, Dan Rheiner and Barbara Rycerski. All filed to seek new terms. Short-term incumbent James McKibben filed for a new term.

Sanitary District No. 5 board: Terms are expiring for Catharine Benediktsson and Tod Moody. Both filed to seek new terms.

PARK BOARDS

Mesa Park Recreation District board: Terms are expiring for full-term incumbents Simon Dunne, Blair Tom and Benjamin Lowrance, and for short-term incumbent Daniel Suda. Dunne, Lowrance and Suda filed to run for reelection.

Strawberry Recreation District board: Terms are expiring for full-term incumbents Peter Teese, Sohrab Saghezchi and Sarah Waterfield. All filed to seek reelection. David Morgenthaler filed to run for the full-term post. The term for short-term incumbent Doug Twillman is also expiring, and he filed for reelection. Aliza Hawkins filed to run.

Marin Resource Conservation District board: Terms are expiring for Melissa Williams and Jerry Meral. Both filed to seek a new term.

PUBLIC UTILITIES

Bolinas Community Public Utility District board: Terms are expiring for Jack Siedman, Grace Godino and Andrew Alexander Green. Godino and Green filed to run for a new term. Mickey Murch and Nathan Siedman filed to run.

Inverness Public Utility District board: Terms are expiring for Ken Emanuels and David Press. Press filed to seek reelection. John Longstreth filed to run.

Candidates emerge as election filing closes

Filing closed this past Wednesday for offices on the Nov. 3 general election ballot. That included a flock of candidates vying for posts on city and town councils, school boards and special purpose districts.

This November, Marin will conduct elections in all 11 of our incorporated cities and towns. That's plus posts for the Marin County Board of Education, Marin Community College District and 16 elementary and high school districts.

Marin will see elections for multiple categories of independent special purpose districts. That includes six community services, seven fire prevention, two public utilities, two recreation, six sanitary and three water agencies.

Add to that Marin's Healthcare District (which excludes Novato) and West Marin's Resource Conservation District.

In a handful of local governments, including in both the city of Mill Valley and its school district, some posts up for election this year are uncontested. In Mill Valley only the incumbents filed for the two open posts on the City Council and three positions on its elementary school district board.

In years past, Marin Municipal Water District's board seats were fiercely contested. The leading issue was whether the district's 191,000 customers in southern and central Marin would have adequate water supplies when dry years inevitably return.

Recent wet winters resulted in reservoirs filled to 91% of capacity. The political result: In each of MMWD's three divisions, candidates will run opposed. Incumbents Ranjiv Khush and Matt Samson plus an impressive newcomer, Erika Lovejoy, have automatically been elected.

In the North Marin Water District, Division 1 incumbent, Ken Eichstaedt, has no opponent. In District 5, veteran incumbent Rick Freitas is retiring. Competing to succeed him are Marc Lewis Hunter and Laurie Williams. It's hard to believe, but if Williams prevails, she'll be the first woman to serve on NMWD's board in 22 years.

Two Novato council members will face opponents. Pat Eklund, first elected to the city council in 1995, faces three challengers in southwestern District 4. They include Chris Carpiniello, Dan Christian and Luiggino Galletto III.

In her west Novato District 2, incumbent Rachel Farac faces two challengers: Bob Rasmussen and Mike Little. Appointed incumbent Sandeep Karkal is unopposed in southwest Novato District 5.

Since local elections are governed according to first-past-the-post rules, Eklund and Farac need only a plurality to prevail. There's no top-two run-off as there are in state and federal contests. With high name recognition and famed dedication to Novato, Eklund's challengers risk dividing up the anti-incumbent vote three ways. If that's the upshot, Eklund will be reelected to an unprecedented ninth term.

Alice Fredericks has been a member of Tiburon's Town Council since 2001. She's running again in an at-large election where three council seats are at stake. The four candidates include Fredericks and incumbent Jack Ryan, along with challengers Chuck Hornbrook and Faris Jafar.

It's no surprise that Fairfax residents will once again see a furious contest for two seats on their factious Town Council. The two incumbents, Lisel Blash and Stephanie Hellman, announced before filing commenced that they would not run for reelection.

Ultimately neither filed, but Blash did so in an only-in-Fairfax manner. After declaring she's retiring from the council, Blash surprisingly took out papers to run for reelection. The second surprise was that she ultimately withdrew.

Instead, six candidates will contest for the two posts which could switch control of the council between its socialist-aligned current majority and the more centrist block. Candidates include Doug Kelly, former Councilmember Larry Bragman, Cheryl Scorza, Aubrey Harmon, Matt Da Cunha and Susan Adams, who isn't the former county supervisor with the same name.

On Wednesday, I will focus on two usually low-profile boards: Marin County Board of Education and the Marin Healthcare District. Then I'll dive into the remaining elections for town and city councils, school trustees and special purpose district governing boards.

Columnist Dick Spotswood of Mill Valley writes on local issues Sundays and Wednesdays. Email him at spotswood@comcast.net.

BOARD VOTE

MMWD general manager selected

New leader was watershed director

BY ADRIAN RODRIGUEZ

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The Marin Municipal Water District has named a new general manager.

The district board voted unanimously Tuesday to promote Shaun Horne, the director of watershed resources, to the top position effective Oct. 1. He will succeed Ben Horenstein, who has been general manager since 2018.

Once Horne takes the helm, Horenstein, who is retiring at the end of the year, will stay on in an advisory role to ease the transition.

An 18-year veteran in water and natural resource management, Horne held positions at the Sonoma County Water District and the Napa County Flood Control and Water Conservation District prior to joining the Marin agency in 2018.

The promotion to general manager will raise Horne's annual pay from $286,620 to $350,000.

"Under our current general manager Ben Horenstein's leadership, this district has taken meaningful steps towards investing in our infrastructure, focused on our engagement of our staff, and really shined a light on our watershed in a way I don't think had been done before," Horne said at the Tuesday board meeting. "So I really appreciate that and I look forward to kind of building on the foundation that he's set forth."

"I really can't say enough that I'm looking forward to working with the talented team here to deliver on the priorities that the board has put forth in the strategic plan, and I look forward to doing that with you all in the coming years," he said.

Horne was selected from a pool of more than 50 applicants after a national search commenced in April.

"After working with Shaun for close to eight years, I think that the board of directors made a considered and thoughtful selection, and I have absolutely full confidence in Shaun's leadership as general manager to guide Marin Water in the years ahead," Horenstein said.

With the Marin Municipal Water District, Horne led implementation of the "Biodiversity, Fire, and Fuels Integrated Plan," which focuses on the health of the natural resources, including fire prevention efforts.

Horne has also helped advance the Lagunitas Creek restoration project, a multiyear, multimillion-dollar undertaking to rehabilitate key habitat for coho salmon, trout and other species.

Horne is also leading the update to the Mount Tamalpais Watershed Roads and Trails Plan, which involves exploring new opportunities for expanded bicycle access on trails and conservation efforts.

“We had over 56 people apply for this role,” Jed Smith, president of the water district board, said ahead of approving the contract. “And we narrowed it down, and we narrowed it down, and you rose to the top. Your focus and your diligence is exceptional. You are so bright and capable. We are here to support you in every way that we can. Your success is our success.”

Board member Ranjiv Khush said it was a difficult process to consider all the candidates.

“Know that you did an amazing job and you have inspired a lot of confidence in all of us to continue in this new position,” Khush said. “Congratulations.”

Board member Diana Meier said, “You really kind of blew us away, and I know you’re going to do a fantastic job. You’ve done a fantastic job in your role. Your passion for the position, the work that we do, it was really inspiring, and I have every confidence you’re going to do a great job.”

Horne’s contract includes a $500 monthly vehicle allowance, a California Public Employees Retirement System package and other benefits.

Horne has a master’s degree in international water resource management from Sonoma State University and a bachelor’s degree in environmental sustainability and social justice from San Francisco State University.

WEST MARIN

$28.5M bridge replacement project gains momentum

Cars wait at a temporary traffic signal on the Lagunitas Creek Bridge in Point Reyes Station. The signal lights were put in place for one-way traffic control during the bridge replacement project. Alan Dep — Marin Independent Journal

BY ADRIAN RODRIGUEZ

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Work is underway to replace the old Lagunitas Creek Bridge in Point Reyes Station.

Caltrans started the $28.5 million project this summer. The initial work includes widening an overflow culvert to match the width of the new bridge and installing the foundation.

Known for its distinctive green frame, the bridge on Highway 1 crosses the creek just north of the Sir Francis Drake Boulevard turn toward Inverness and the coast. It was built in 1929 and sits near the San Andreas Fault.

“Caltrans determined that the existing Lagunitas Creek Bridge does not meet current safety and seismic design standards,” said Matt O’Donnell, spokesperson for Caltrans. “The new bridge will provide a safer, more reliable and resilient crossing for the community for decades to come.”

The bridge is being replaced with a precast concrete structure with 5-foot cycling lanes on the shoulders and a 6-foot pedestrian sidewalk on the western side. The sidewalk and curb ramps will be compliant with Americans with Disabilities Act standards.

Utility relocation began in June and was completed this month. Caltrans is scheduled to continue one-way traffic control through November while work is underway. The project will be suspended in winter and continue in the spring.

A full 21-day closure of the bridge is scheduled for after Labor Day weekend next year when the old bridge will be demolished and removed.

Caltrans first proposed replacing the bridge in 2018, but the plan met with opposition and hit several roadblocks over the years.

A group called Friends of the Green Bridge sued, asserting that the project violated the California Environmental Quality Act because the state’s final environmental impact report failed to consider retrofitting as an option.

After Caltrans received a favorable ruling in Marin County Superior Court, the matter was appealed to the 1st District Court of Appeal in San Francisco. In 2023, a three-judge appellate panel affirmed the earlier decision by Superior Court Judge Andrew Sweet.

Delays increased the project cost from an estimated $5.8 million to $28.48 million.

More recently, a major point of controversy has been over a redwood tree. Project planners said the tree needs to be removed in order to relocate utilities, but community opponents protested the plan.

In 2024, the California Coastal Commission approved the bridge replacement on one condition: Before the California Department of Transportation can cut down the tree, it must submit a thorough analysis to the commission’s executive director demonstrating that there are no viable alternatives.

Marin County Supervisor Dennis Rodoni prioritized the concern and met with residents this year, which led to a collaboration between Pacific Gas & Electric Co. and Caltrans to salvage the redwood.

Rodoni said he supports the project because it will improve access for drivers, cyclists and pedestrians while improving the seismic integrity.

“This bridge is a critical connection for West Marin residents, businesses, emergency responders, schools, service providers and visitors,” Rodoni said. “My priority is to ensure

Caltrans communicates as early, clearly and consistently as possible so our communities understand what to expect and have enough time to prepare."

Rodoni said he views the project as an opportunity to strengthen the relationship between Caltrans and the West Marin communities.

"By staying connected throughout the project, sharing information early, and creating opportunities for community input, we can work together to minimize impacts and make this important project as successful as possible," he said.

The project, which is funded by a federal grant, is expected to be completed in summer 2028.

City approves $16.8M contract for Novato Boulevard work

A car drives along Novato Boulevard in Novato. The City Council approved a $16.8 million contract for the upgrades. Alan Dep — Marin Independent Journal

BY CALLIE RHOADES

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Novato is moving forward with Novato Boulevard improvements that have been in the works for 25 years.

The City Council approved a $16.8 million contract with contractor Team Ghilotti Inc. in a 4-0 vote on Aug. 25. Councilmember Sandeep Karkal, the general manager and chief engineer for the Novato Sanitary District, one of the project partners, recused.

Novato is required to award contracts to the lowest responsive and responsible bidder, which staff determined to be Team Ghilotti. A couple of hours before the council meeting, the city

received a bid protest from Argonaut Constructors of Santa Rosa, challenging the responsiveness of the Team Ghilotti bid.

City staff are reviewing the protest, according to Sherin Olivero, a city spokesperson for Novato. Team Ghilotti has submitted a response to the protest.

“We intend to move on this rapidly to determine if there’s merit to the protest and if so to move forward with making the changes,” Chris Benigni, the public works director, said at the council meeting.

If changes are needed, staff will return to council with a new item at a future meeting.

The plans for the road improvements started in 2001. The City Council approved the project designs in 2018.

“There are a lot of things that have happened throughout the last 25 years that have pushed the project — much outside of the control of the city — but we’re finally at a momentous stage where we are ready to go to construction,” Benigni said.

The project will involve the segment of Novato Boulevard from Diablo Avenue to Grant Avenue. It is being conducted in partnership with the Novato Sanitary District and the North Marin Water District.

The project is estimated to cost about $23.9 million, including construction costs, staff time and contingencies.

In May, Novato awarded $2.2 million to Ghirardelli Associate for construction management and inspection services. The city received about $8.49 million in Measure AA funds for its portion of the construction work.

The Novato Sanitary District is putting forward about $4.7 million for the project, and $2.7 million is estimated to be funded by the North Marin Water District. Benigni said the numbers might be adjusted based on differences between anticipated construction costs and bid estimates, which have to be approved by both agencies. Updated numbers will be brought as a budget amendment.

As part of the work, the sanitary district is replacing lateral sewer lines that need to be removed because of the age of infrastructure. The water district is also replacing water lines that flow from the nearby houses underground. The city will add new stormwater pipe systems; replace traffic signals; add a new center lane, bike lanes and sidewalks; and make other landscaping and driveway improvements.

“This is a massive project for the community,” said Amy Cunningham, city manager.

“We’re drastically increasing safety in that corridor for all modes of transportation,” Benigni said.

Pacific Gas & Electric Co. has been conducting undergrounding and gas main rehabilitation work on the boulevard since last year. The city estimates the additional construction work to begin in late September and be completed in two years.

“It’s going to be another 24 months of dirt, dust, noise, and I realize that the community has dealt with a lot as PG&E and the private utilities have been doing their undergrounding work for years now,” Benigni said. “But we’ve learned and watched and intend to communicate with the neighborhood better, have better traffic control, be less disruptive, and give well in advance notice when there’s going to be major disruptions to the traffic.”

MMWD

New fee could hit wireless holdouts

Charge proposed for analog meter checks

BY ADRIAN RODRIGUEZ

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Marin Municipal Water District customers who choose not to upgrade their analog water meters to wireless "smart" technology could end up paying bimonthly fees under a new proposal.

The district is in the beginning stages of its 10-year rollout to the new meters known as advanced metering infrastructure, or AMI. The transition aims to improve conservation, lower customer bills and reduce the staff time and costs involved in reading meters.

For customers who opt out of the switch, the district is proposing a fee rate of $40 to offset the cost of in-person manual meter reads. With installation preparations underway, staff wants to get the policy on the books soon.

"AMI is the most important modernization project we have undertaken in a long time," said Jed Smith, president of the district board. "The agency will now have data to be smarter, our customers will be able to detect leaks earlier, and research shows we should be able to save 5% water waste."

Declining the upgrade forces staff to drive to homes, which costs the district money and reduces the water savings the customer could receive, Smith said.

"Staff is suggesting a fee to cover those costs to have our trucks reach those remote homes and enter the data," he said. "This is standard practice in other like agencies and I am supportive of not charging the additional administrative fee to service those homes as some agencies do. The good news is that most customers, historically 99.9%-plus, at like districts have proven to realize the value of such smart meters and not opted out."

After years of discussing the project, the board approved the 10-year rollout plan in May, hiring Badger Meter Inc. for $20.6 million to supply the meters and equipment, services and staff training. The first lot of meters is due to be delivered in the coming week.

In May, the board also approved hiring two limited-term staffers to focus solely on meter replacements and repairs. Recruitment is underway, said Craig Lauridsen, the district's meter operations supervisor.

The option to opt out would apply only to the wireless transmission of data, not the device itself, Lauridsen said. He said it's an important distinction.

There could be instances where dying meters need to be replaced at properties where customers rejected the upgrade. The district would likely replace the old meter with an AMI-ready meter to have consistency across the service area. However, wireless automated transmission features would not be activated for the opt-out customers.

The opt-out policy would apply only to houses and duplexes, which make up more than 85% of customer meters, Lauridsen said.

If customers opt out, the meters at those properties would be upgraded as soon as they move, Lauridsen said. All new accounts would be required to have AMI, he said.

Additionally, opt-out customers would not be eligible for the district's leak adjustment discounts on their bills.

"One of the most powerful benefits of AMI is leak detection and automated leak alerts," Lauridsen said. "So by opting out of AMI, you're essentially opting out of that tool and therefore the leak adjustment itself."

The new technology will provide real-time data online. Billing cycles will remain the same, said Jessie Underhill, spokesperson for the district.

"Customers will have the ability to see their water usage data down to 15-minute intervals, rather than waiting months until their bill arrives," she said. "This will help customers monitor their water use, catch leaks early and curb water use before their next bill."

Regarding the fee, a read from a single meter is estimated to cost the district about $92 for gas and staff time. Assuming there would be multiple opt-outs in each service area, which would improve efficiencies in data collecting, the district adjusted the estimate to $60 per read.

The district proposed the $40 fee because it's unclear how many customers will actually decline the AMI upgrade. The district cannot charge more than the expected cost, Lauridsen said. The fee, however, can be increased down the line, he said.

The district looked at other agencies with AMI opt-out fees for comparison. The Alameda County Water District charges a bimonthly fee of $48. Petaluma charges a $20 monthly fee. The North Marin Water District charges a $10 bimonthly fee.

Out of 88,000 service connections, the Alameda County Water District has about 10 opt-outs, Lauridsen said. Petaluma has 15,000 service connections and one opt-out. The North Marin Water District has 21,000 connections, and fewer than five opt-outs.

Lauridsen presented the proposal at the district board meeting on Tuesday.

Board member Ranjiv Khush offered an idea to encourage participation.

“As part of the policy you’re recommending that people that have opted out don’t receive a leak adjustment,” he said. “I’m wondering if we can tweak that and offer the leak adjustment if they opt in.”

The board and staff liked the idea.

“I think that could be a motivator,” Lauridsen said.

Ban on watering decorative grass nears despite no signs of drought

Bill signed by Newsom in 2023 amid dry years starts on Jan. 1

Juan Ruiz, left, and Martin Ibarra of K & D Landscaping install native plants at the Villas of Almaden in San Jose. Photos by Jane Tyska — Bay Area News Group

A broad new water conservation law will soon take effect in phases, banning the watering of “ornamental turf.”

Martin Ibarra of K&D Landscaping installs native plants at the Villas of Almaden in San Jose. Jane Tyska — Bay Area News Group

BY PAUL ROGERS

BAY AREA NEWS GROUP

It's been more than three years since California was in a drought. Reservoirs are above average levels. A strong El Niño is brewing in the Pacific and could bring soaking storms this winter.

But there's a new endangered species across the state: grass. A broad new water conservation law will soon take effect in phases, banning the watering of "ornamental turf" at corporate, industrial, government and homeowners association properties with drinking water across California as a way to preserve supplies.

Gov. Gavin Newsom signed the law in 2023 as California was emerging from a harsh three-year drought. Starting on Jan. 1, it will be illegal for local and regional government agencies across the state — including schools, cities, counties, courthouses, fire stations and libraries — to irrigate decorative grass with potable water, whether or not California is in a drought.Enforcement is expected to be light at first. But scofflaws eventually could face fines of up to $1,000 a day. On Jan. 1, 2028, the ban will expand to commercial businesses like office

parks, car dealerships, supermarkets, strip malls and corporate campuses, along with colleges and universities. And on Jan. 1, 2029, it will apply to homeowners associations.

The rules do not apply to lawns at houses, apartment buildings, cemeteries or any "functional turf" with a recreational use, including sports fields, golf courses, playgrounds, pet exercise areas and picnic grounds, along with areas regularly used for community gatherings.

Supporters say the law, AB 1572, will save millions of gallons of water wasted every year by watering grass on road medians, the edges of parking lots and between buildings — landscape people don't use or eat.

"Despite a few wet winters and the anticipation of another, water is a precious resource for Californians," said Victoria Rome, state government affairs director at the Natural Resources Defense Council, an environmental group in San Francisco that co-sponsored the law. "Local cities, towns and school districts should be evaluating their water usage now to ensure that every drop of potable water is used only on the most necessary of landscapes, like parks and ball fields."

California has suffered through three severe droughts since 2007. As the climate continues to warm, more are inevitable, backers of the law say. Sources like the Colorado River and Sierra snowpack are becoming more precarious, so locking in savings of drinking water now preserves more for dry years ahead, they add.

"These are long-term investments to ensure we have sustainable supplies," said Tracy Quinn, chief executive officer of Heal the Bay, an environmental group in Santa Monica that co-sponsored the bill. "This is not taking turf out of play yards or baseball fields. It's where the grass is purely ornamental. It's low-hanging fruit."

Opponents call it overkill.

They argue that most local governments aren't ready for the new rules, and haven't budgeted money to replace grass with water-efficient landscaping.

"This was enacted three years ago under different circumstances than we have now," said Jon Coupal, president of the Howard Jarvis Taxpayers Association, a taxpayer rights group in Sacramento. "It's an example of knee-jerk legislation, an immediate reaction to a problem. Legislation passed under those circumstances is not often well-thought through. I would hope that if this proves to be unworkable, they can go back and tweak it or repeal part of it."

Coupal said the state would do better to build more reservoirs and provide voluntary incentives to encourage water conservation, like more rebates for property owners who choose to replace grass with low-water landscaping.

"The law is an example of legislating scarcity when there are ways you can legislate abundance and meet the needs people have," he said.

It's unclear how widely aware local government leaders are of the law.

A survey of landscape and property companies at the Central Coast Water Summit in June in Santa Cruz found that 80% said their clients “are still waiting for direction or avoiding the subject.”

When asked what message moves property owners to replace their landscaping, half said lowering water bills. Almost none said environmental sustainability.

In recent months, more homeowners associations and commercial property owners have begun to learn about the law and ask about it, said Daniel Nemire, a manager for K&D Landscaping in Watsonville, which hosted the event.

“Our message is you don’t want to be stuck,” Nemire said. “If they do start enforcing and you have thousands of feet of turf, it’s a big thing for your budget. You want to spread it out. Do yourself a favor and break it up. There are dozens of plant types you can use. It doesn’t look like the desert. It can look really beautiful.”

Landscape and irrigation equipment upgrades can cut water use by up to half, he said.

Some cities have tried to get ahead of the rules.

Last year, Morgan Hill held a public contest to design new landscaping around its city hall to save water. Crews removed grass over 4,400 square feet, put down mulch and park benches and planted 173 species of native plants, such as deer grass, ceanothus, sticky monkey flower, red buckwheat and manzanita. They planted three new trees and moved five others from a parking lot where they had installed solar panels. The total cost was about $32,000, minus an $8,000 rebate from the Santa Clara Valley Water District.

“We’re trying to be proactive. We want to lead by example,” said Shannon Rossow, an environmental programs coordinator with the Morgan Hill Environmental Services Division. “Then other property owners can see it’s possible.”

The law might run into controversy. It was modeled on a law that the Nevada state legislature passed in 2021, outlawing the use of Colorado River water on ornamental grass and commercial, government and homeowners association properties in places like Las Vegas.

This year, homeowners associations representing more than 10,000 property owners filed a class action lawsuit against the Southern Nevada Water Authority in an attempt to block it. They argue it will kill trees, place an unfair burden on property owners and increase the urban “heat island” effect.

In California, the law will be enforced by retail water providers, including government water districts, private water companies and city water departments, according to the State Water Resources Control Board, which also has enforcement authority.

“Slowly, the news is getting spread among property owners about this,” said James Nachbaur, director of research, planning, and performance at the state water board. “Generally our

approach is trying to get people into compliance with education as opposed to jumping immediately to enforcement."

Local water agencies agreed.

The East Bay Municipal Utility District is reminding large property owners that it offers rebates for landscape work, including providing landscape architects for free consultation. It likely will not fine violators unless the state enters a drought again, said Geneva Gondak, a water conservation supervisor for the district.

"We don't want to see all of these green areas turn into dead patches, and we don't want the trees to die," she said. "We are helping people convert these landscapes to more sustainable areas."

In San Jose, one homeowners association is trying to get ahead of the law. The Villas of Almaden is spending $100,000 to replace turf around 180 homes with water-efficient landscaping and upgrading its irrigation system, which dates back to the 1980s, to a high-tech system with weather sensors. After a rebate from the Santa Clara Valley Water District, the project will cost $80,000, said Fadi Cotran, president of the homeowners association board, and should cut water use by about 35%, paying for itself in five to 10 years.

"We have huge water bills. We are trying to find ways to conserve," he said, adding that the board is trying to be proactive by also replacing aging roofs and improving fire protection. "And we wanted to get the rebates before the money runs out. The early bird gets the worm."

PT REYES LIGHT 8/27/26

Water district plans to modernize Nicasio Reservoir spillway

By Sage Ríos Mace

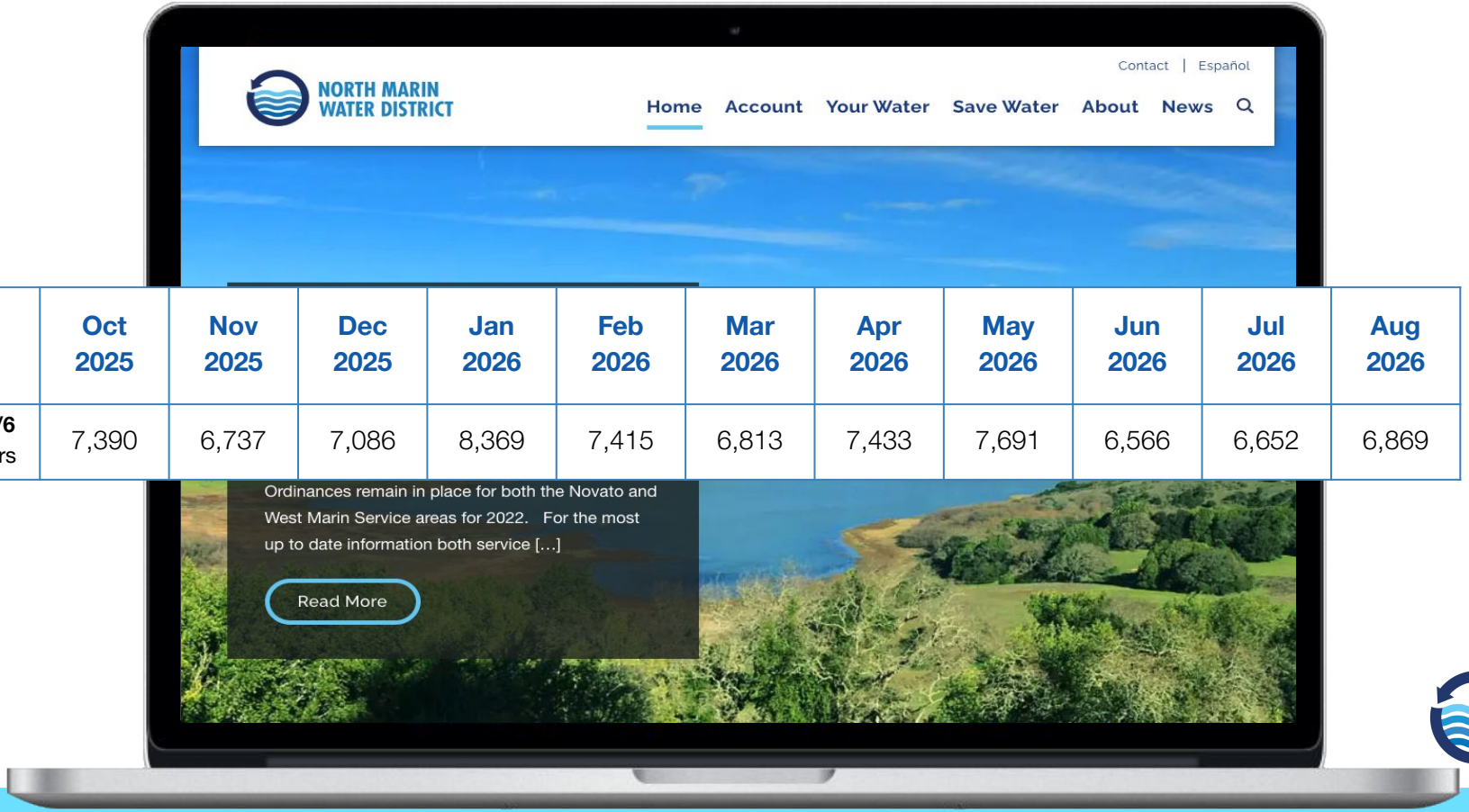
Marin Water has hired a consulting firm that specializes in dam design and rehabilitation as it seeks to modernize the Nicasio Reservoir spillway. Seeger Dam, built in 1961, received a downgraded status from the California Division of Safety of Dams, from satisfactory to fair, this spring, after an evaluation identified design flaws. The California Department of Water Resources ordered the district to submit a repair plan by Dec. 1. The "fair" rating indicates the dam is safe under normal operating conditions but has vulnerabilities that could emerge during an extreme event. According to Marin Water's director of engineering, Alex Anaya, the evaluation revealed signs of blockage in the drainage system, a significant concern for a system that needs to flow freely. Other issues included a lack of water stops, which provide reinforcement and prevent water leakage in concrete structures. The existing water stops also need to be updated to modern standards to keep water from flowing underneath the structure. Mr. Anaya said further reinforcement and anchorage will help bolster the spillway. "None of this means that it is going to fail; it's not deficient or at risk," he told the *Light*. "It just needs to be modernized." After the Oroville Dam crisis in 2017, when heavy rains damaged the spillways and prompted a mass evacuation, the state's dam division ordered an additional evaluation of spillways with similar designs to Oroville. Seeger Dam, which also has a concrete chute spillway, was among those identified for further review. It underwent a multiphase evaluation that included field inspections and subsurface investigations. The district's response—a $50 million project—seeks to improve the spillway's long-term resilience and bring it up to current engineering standards. The planning phase began this summer and is expected to end around April 2028. A consultant will draft alternatives for analysis, after which the plans will move through design, environmental review, and permitting phases. The full project is expected to be completed in 2031. Until then, Marin Water will continue to monitor the dam closely. "We're keeping an eye, especially before and after events to make sure that nothing comes up," Mr. Anaya said. The Nicasio Reservoir has a storage capacity of 22,430 acre-feet and plays a vital role in the district's ability to store and manage water, particularly during dry periods. A recent plan by Marin Water to raise the height of the spillway, separate from the modernization project, was opposed by community members worried about increased flooding from higher reservoir and creek levels.

NORTH MARIN
WATER DISTRICT

Web & Social Media Report

August 2026

Website Statistics



	Oct 2025	Nov 2025	Dec 2025	Jan 2026	Feb 2026	Mar 2026	Apr 2026	May 2026	Jun 2026	Jul 2026	Aug 2026
2025/6 Visitors	7,390	6,737	7,086	8,369	7,415	6,813	7,433	7,691	6,566	6,652	6,869

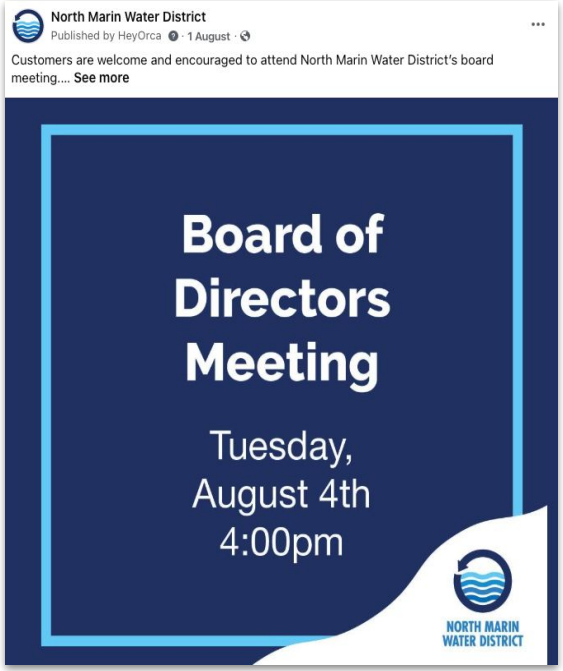
Social Media Followers

	Oct-2025	Nov-2025	Dec-2025	Jan-2026	Feb-2026	Mar-2026	Apr-2026	May-2026	Jun-2026	Jul-2026	Aug-2026
Facebook Followers	2,905	2,926	2,952	2,990	3,008	3,040	3,069	3,099	3,116	3,139	3,158
X (Twitter) Followers	123	125	125	125	125	125	125	124	125	125	125
Instagram Followers	1,015	1,018	1,020	1,028	1,027	1,028	1,040	1,051	1,055	1,066	1,069

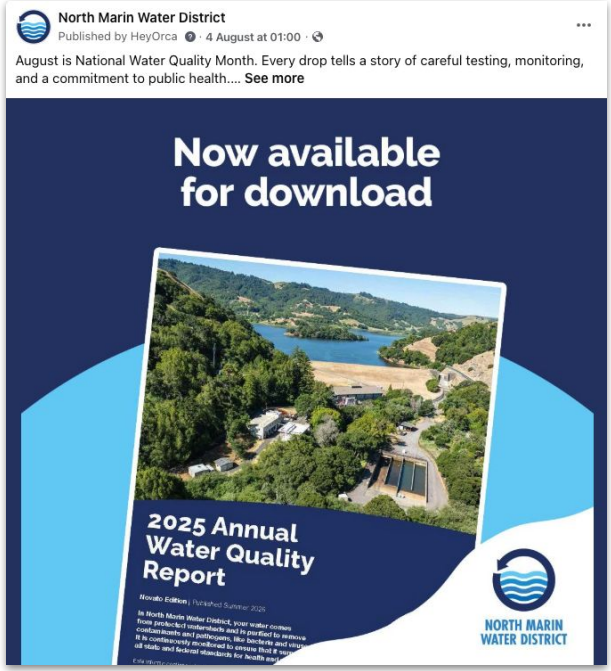
NMWD Most Visited Pages

Pages	Views
Home	3,789
Online Billing	2,844
My Water Usage (WaterSmart Portal)	957
What Is An Acre Foot?	410
Employment Opportunities	396
Meetings 2026	264
FAQs	255
Stop Service	221
Contact	216

August Social Media Highlights | Facebook



79 people reached | 0 engagement

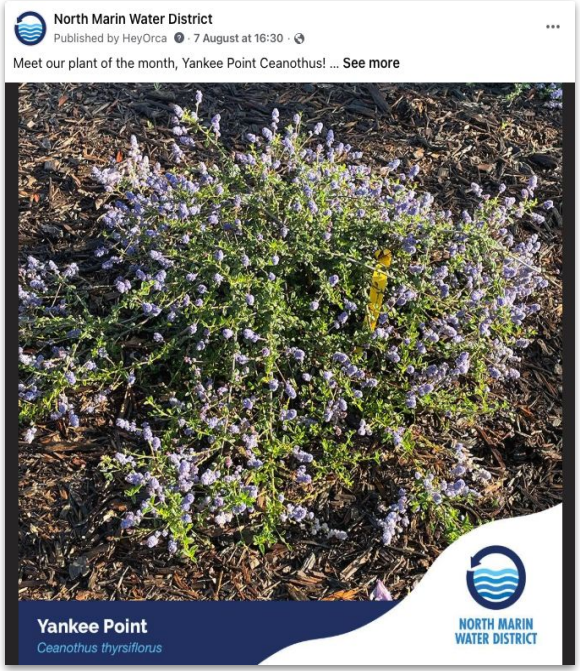


113 people reached | 3 engagements

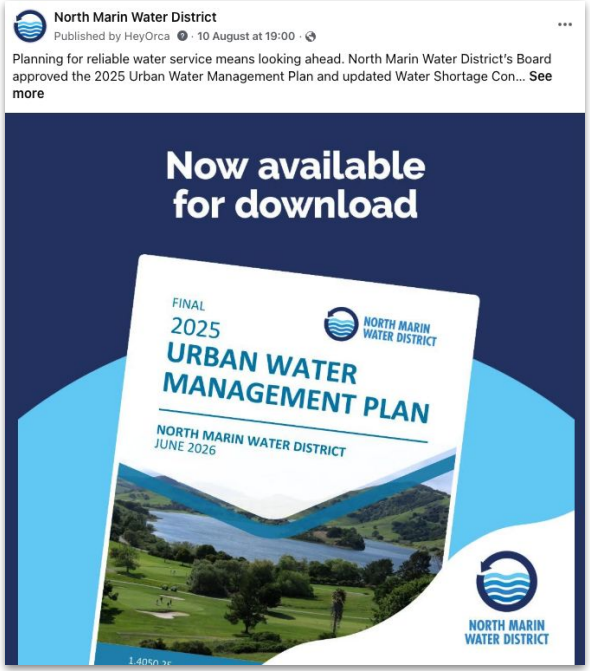
974 people reached | 6 engagements

Engagements include likes, reactions, clicks and comments

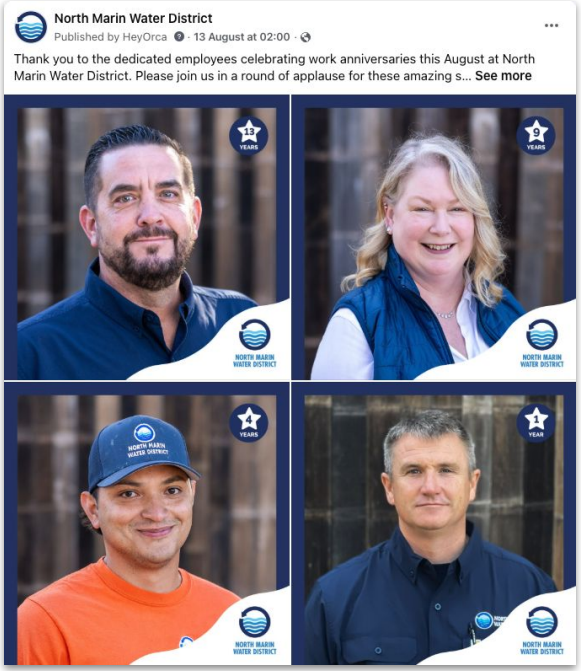
August Social Media Highlights | Facebook



138 people reached | 7 engagements



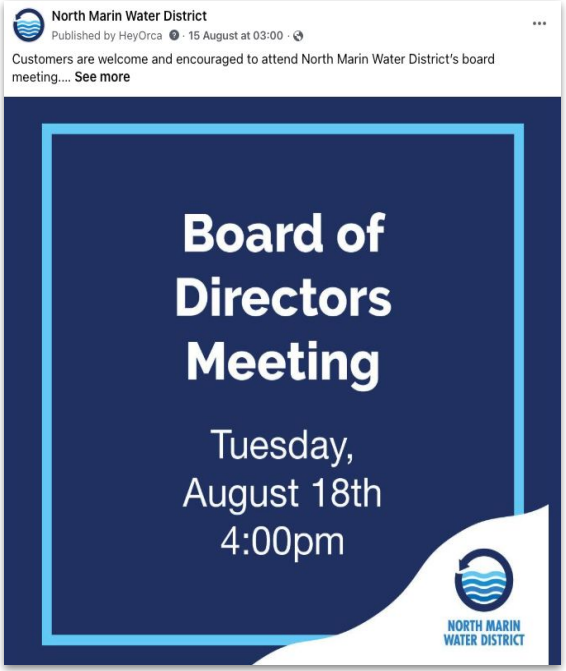
129 people reached | 12 engagements



1,093 people reached | 85 engagements

Engagements include likes, reactions, clicks and comments

August Social Media Highlights | Facebook



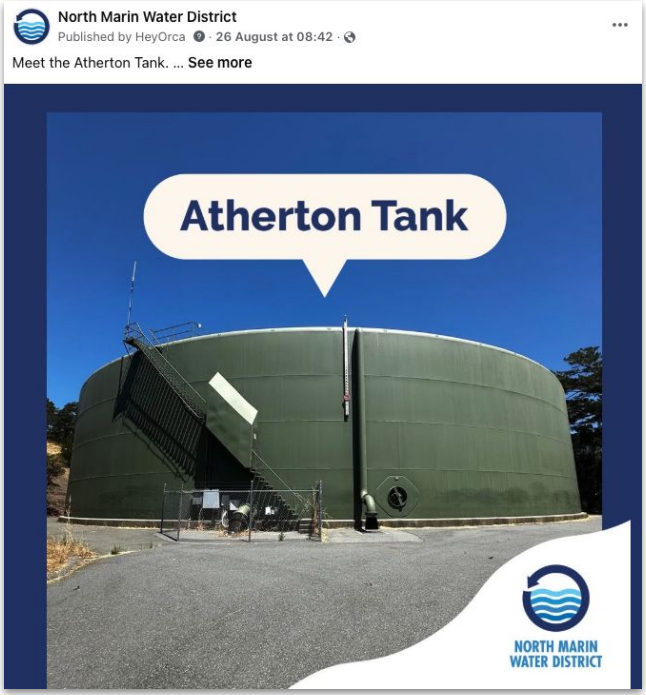
96 people reached | 5 engagements

117 people reached | 1 engagement

78 people reached | 6 engagements

Engagements include likes, reactions, clicks and comments

August Social Media Highlights | Facebook



928 people reached | 50 engagements

Engagements include likes, reactions, clicks and comments

August Social Media Highlights | Instagram

Profile Overview

Key Performance Metrics

Views	Engagement Rate	Total Engagement	Change in Followers
1,766	2.6%	46	5

Post Performance Overview

Filter

Key Performance Metrics

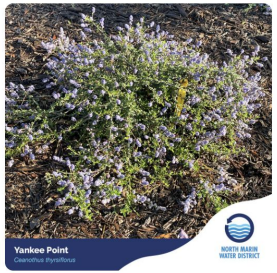
Post Reach	Post Engagement	Post Views	Story Views
550	42	1,014	0

August Social Media Highlights | Instagram

North Marin Water District
Aug 12, 2026 12:01 PM
Thank you to the dedicated employees celebrating work anniversaries this

0 Comments	14 Likes	0 Saves
0 Shares	138 Reach	290 Views
14 Engagement		

North Marin Water District
Aug 7, 2026 7:30 AM
Meet our plant of the month, Yankee Point Ceanothus! This California native

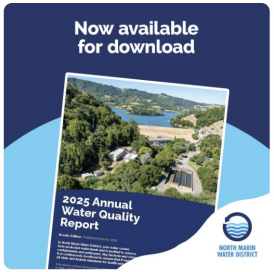


0 Comments	6 Likes	0 Saves
1 Shares	75 Reach	115 Views
7 Engagement		

North Marin Water District
Aug 17, 2026 2:01 PM
A water-smart yard can make room for more than plants. Shade, seating,

0 Comments	5 Likes	1 Saves
0 Shares	47 Reach	86 Views
6 Engagement		

North Marin Water District
Aug 3, 2026 12:30 PM
August is National Water Quality Month. Every drop tells a story of careful testing



0 Comments	5 Likes	0 Saves
0 Shares	49 Reach	94 Views
5 Engagement		

North Marin Water District
Aug 5, 2026 12:30 PM
Ready to replace your thirsty lawn with a low-water-use landscape? North Marin

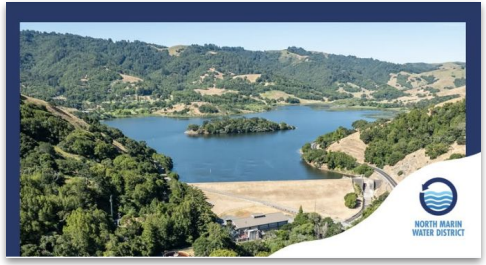
0 Comments	4 Likes	0 Saves
0 Shares	35 Reach	72 Views
4 Engagement		

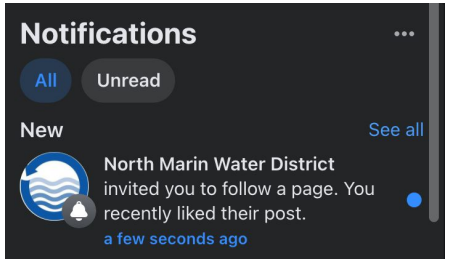
North Marin Water District
Aug 10, 2026 12:30 PM
Planning for reliable water service means looking ahead. North Marin Water

0 Comments	4 Likes	0 Saves
0 Shares	47 Reach	86 Views
4 Engagement		

Posts with the most engagement on Instagram

Facebook Likes Campaign - August Report





We are running an evergreen ad which encourages customers in the NMWD service areas to 'like' (follow) the NMWD Facebook page. We selected images that have historically performed the best to drive more likes.

Spend in August 2026	**Reach** (Number of people who saw the ad)	**Impressions**	**Results** (New Page Likes)	**Cost Per New Page Like**
$46.52	2,556	3,773	19	$2.45

This month, we were able to reach over 2,500 people with the Likes Campaign

What's Next?

- Kiosk has begun posting new video assets that are part of the Educational Campaign that will be highlighted throughout the social media channels.
- Kiosk has begun work on the motion graphics videos that will be part of the Education Campaign.
- Kiosk to continue rolling out the new social campaign highlighting the facilities around Novato.
- Kiosk to continue with the social campaign on drought tolerant plants featured in the new demonstration garden at the NMWD office.
- Social media posts will also feature national holidays, summer water savings tips & resources, employees on their work anniversaries, as well as highlight indoor/outdoor rebates.

Thank You